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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.

Case IPR2025-00216
Patent 11,487,138

**PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 11,487,138**

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LIST OF EXHIBITS

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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
1003	Declaration of John Feland
1004	Curriculum Vitae of John Feland
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
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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
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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
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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”)
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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
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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

ANNOTATED INDEPENDENT CLAIMS

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.

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.

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.

Petitioner Luxottica of America Inc. requests *inter partes* review (“IPR”) of claims 1-20 of U.S. Patent No. 11,487,138 (“the ’138 patent,” Ex.1001), which is purportedly owned by e-Vision Smart Optics, Inc. (“Patent Owner” or “PO”).

I. INTRODUCTION

For over a decade, people have been able to ask their phones questions and receive answers that their phones looked up on the Internet. Ask “What’s the weather like today?” and your phone responds with the daily forecast. Say “I’d like a romantic place for Italian food,” and your phone provides restaurant recommendations. The best-known example of this is the Siri assistant for iPhones. Siri was first released as an independent standalone app in 2010. Apple acquired the Siri technology and, in 2011, released the iPhone 4S, which came standard with built-in, integrated Siri.

Even in 2010, Siri could be used hands-free. Users could make verbal queries, and Siri would respond. Users could also use Bluetooth earpieces or headsets to relay their spoken queries and receive Siri’s responses. Assistants like Siri that could interpret natural-language queries were the next step in the evolution of older services that looked up weather, stock prices, and other information in response to spoken queries conforming to a specific syntax. Like Siri, those older services could be used hands-free, with mobile phone owners using Bluetooth earpieces to relay spoken queries.

Despite claiming priority only to 2012, the challenged claims cover this well-known, basic user experience. The '138 patent claims devices that use a microphone and a chip to relay a query to an external device, like a mobile phone, and to play back the response via a speaker. The '138 patent claims this user experience conceptually, without reciting any details of the technology making it possible for a system to detect a user's verbal query, interpret the query, or respond appropriately.

The '138 patent tries to reign in the sweeping ambit of its claims by limiting the claimed devices to eyewear. They also require that the phone or other external device search the Internet for the response. Some claims limit themselves to wireless communication, with some further limiting themselves to Bluetooth.

None of those limitations makes the claims patentable. Bluetooth-enabled eyewear was widely disclosed in patents and publications well before 2012. Such eyewear could connect with a Bluetooth-enabled phone to play back content provided by the phone. Users could request the content through voice commands captured by a microphone on the eyewear. The challenged claims are obvious in view of this prior art and Apple's patent publication on Siri.

By focusing on verbal queries answered by an external device via Internet searches, the challenged claims stray far from the focus of the '138 patent's specification. Titled "Eyewear Docking Station and Electronic Module," the '138 patent focuses on eyewear with a docking station to which a user can dock various

“application modules,” allowing the user to swap out modules and change the eyewear’s functionality.

Patent Owner mined the specification and found a single two-sentence example disclosing that the application module could be used to “look up the weather on the internet wirelessly.” Patent Owner built the entire claim set around this thin disclosure. The ’138 patent does not describe any voice-recognition or natural-language-processing technology. It does not disclose any audio signal processing. It does not disclose any process or data structure for searching the Internet for answers to user queries. It does not disclose any novel wireless hardware or protocols. And it does not disclose any novel microphones or speakers. The ’138 patent thus assumes those skilled in the art would have no trouble making the claimed eyewear with no more guidance than that the eyewear can be used to “look up the weather on the internet wirelessly.” The paucity of relevant disclosure in the ’138 patent’s specification confirms the claims are simply an obvious application of Siri-over-Bluetooth to the eyewear context.

Since the prior art renders all the claims obvious, the Board should cancel all the claims of the ’138 patent.

II. OVERVIEW OF PRIOR ART

A. By the early 2010s, Bluetooth wearables were ubiquitous, and many relayed voice commands to phones.

1. Formalized in 1999, Bluetooth quickly became a standard way to connect headsets with mobile phones.

Based on technology developed in the 1980s and 1990s, Bluetooth was standardized in 1999. Ex.1003, ¶33. Effective for short-range wireless communication, Bluetooth quickly found applications in devices like hands-free mobile headsets. *Id.*, ¶¶33-34. By 2001, Ericsson had released a Bluetooth-enabled mobile phone, and IBM had released a Bluetooth-enabled laptop. *Id.*

Bluetooth's adoption accelerated rapidly, with many users embracing the technology for convenient communication through headsets. *Id.*, ¶35. In 2007, Apple released the iPhone, ushering in the modern smartphone era. *Id.*, ¶36. From its inception, the iPhone supported Bluetooth. *Id.* That same year, Apple introduced its own Bluetooth earpiece that could communicate with the iPhone, which it called the "iPhone Bluetooth Headset":



Id.

2. By 2010, Bluetooth earpieces offering voice control were widely available.

By 2010, Bluetooth earpieces were ubiquitous. Ex.1003, ¶37. Models available in 2010 included the Motorola Finiti and CommandOne, as well as the Plantronics Savor M1100 and Voyager Pro Plus:



Motorola Finiti



Motorola CommandOne



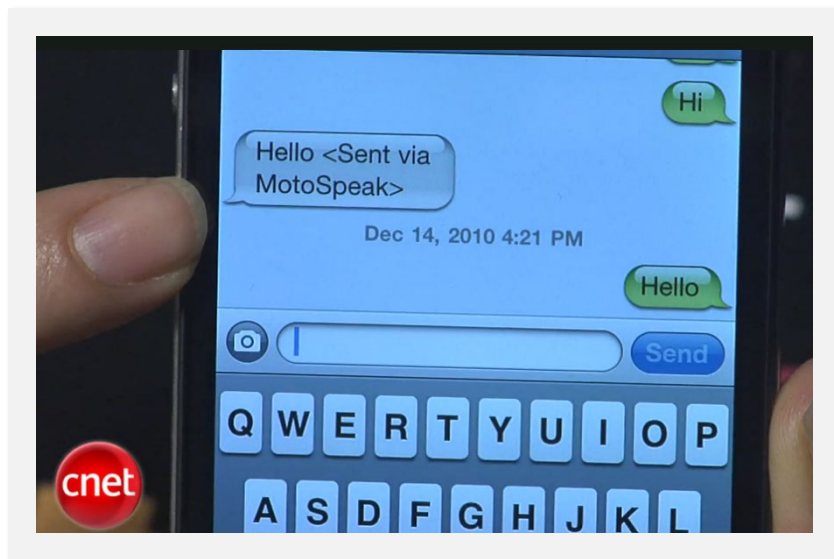
Plantronics Savor M1100

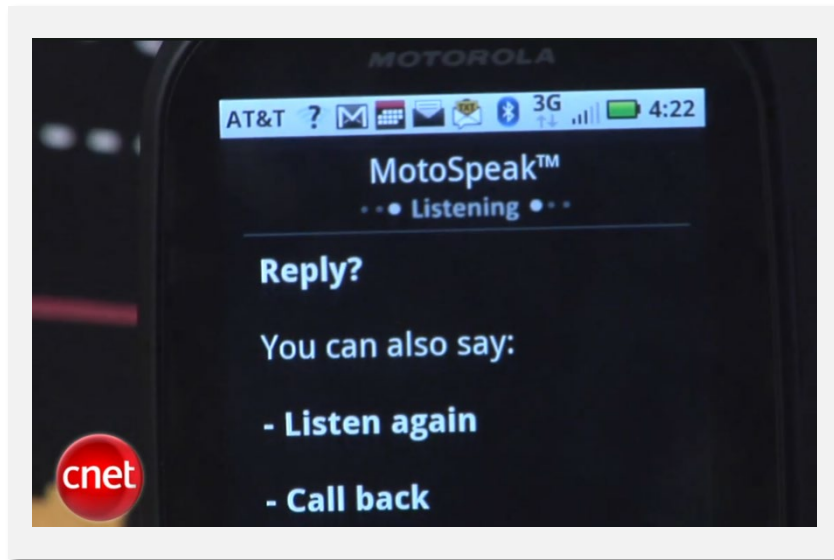


Plantronics Voyager Pro Plus

Id.

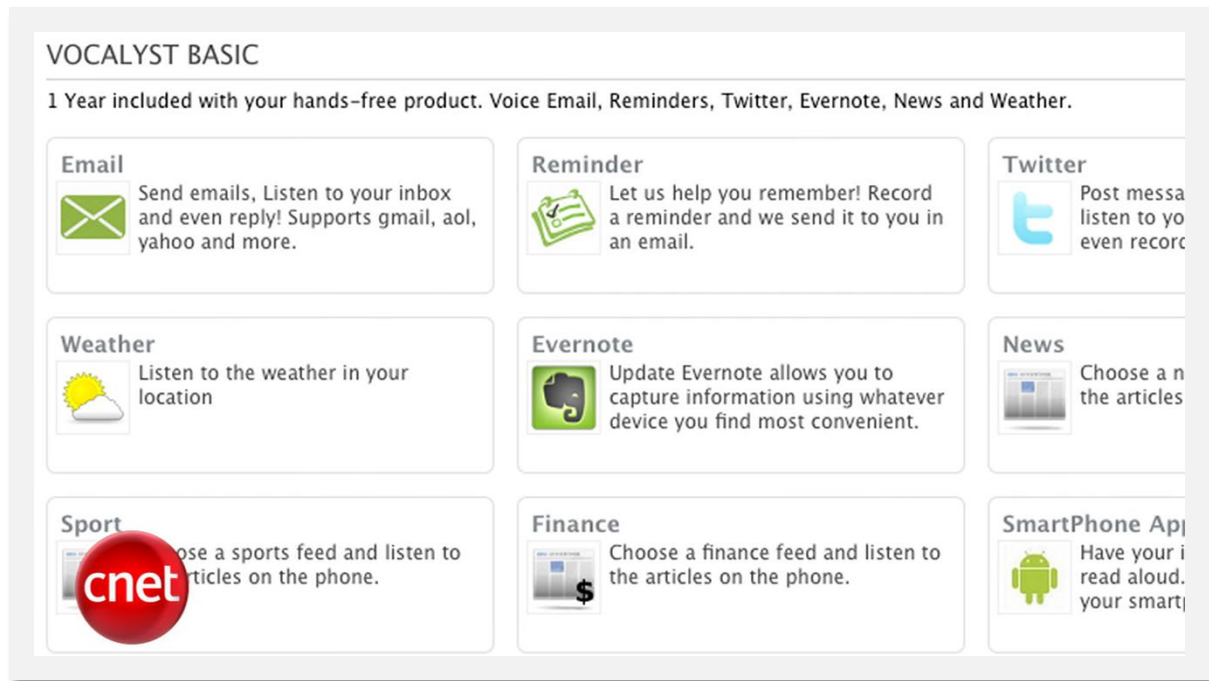
These models offered voice commands to activate smartphone technology. *Id.*, ¶38. For example, both the Finiti and CommandOne worked with Motorola’s Motospeak app for Android. *Id.* The Finiti or CommandOne would communicate via Bluetooth to an Android phone, and users could speak a voice command to listen to and send text messages via Motospeak:





Id.

The Plantronics Savor M1100 and Voyager Pro Plus worked with an even more versatile application called Vocalyst. *Id.*, ¶39. Users could not only send and play back text messages but also manage emails, hear weather reports, get news articles, and post to Twitter, all via voice interaction with their Bluetooth-connected phones. *Id.*



Id.

B. As Bluetooth earpieces became more and more popular, patent applications were filed on Bluetooth-enabled eyewear.

1. In 2010, Thiel disclosed eyewear that used Bluetooth to transmit a user's voice commands to the user's phone.

Thiel is a patent application that published in 2010. Ex.1028. Thiel discloses eyewear that streams audio from a phone in response to voice commands. *Id.*, [0039], [0043]-[0044]; Ex.1003, ¶¶40-41. A person can also use the eyewear to control a phone or computer with voice commands. Ex.1028, [0044]; *see also id.*, [0026]-[0027].

Two “audio devices 30” attach to the ends of conventional eyewear:

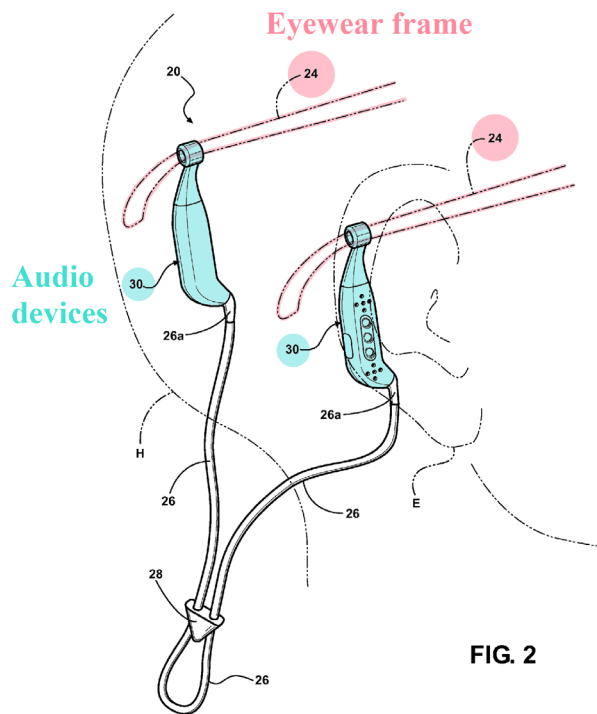


FIG. 2

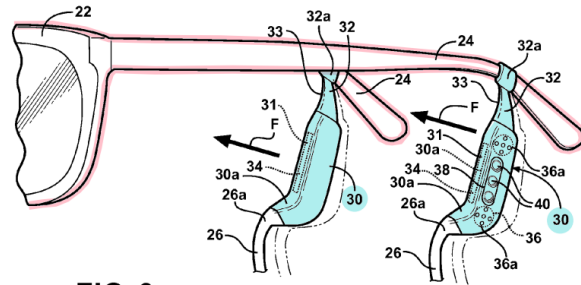


FIG. 3

Id., Figs.2-3.¹ At least one audio device has a microphone and a Bluetooth transceiver chip. *Id.*, [0049]. The microphone captures the user's voice signals, which can include voice commands. *Id.*, [0043]-[0044]. The Bluetooth chip transmits the user's voice commands to the user's Bluetooth-enabled phone. *Id.* For example, in this manner, the user can use verbal instructions to initiate music playback on the phone, turn volume up or down, and request a new music track or playlist. *Id.*, [0044]. The phone sends the requested audio content back to the Bluetooth chip, which relays the audio content to speakers for playback to the user. *Id.*, [0049].

¹ Petitioner has marked up figures in color throughout.

2. In 2011, Jannard-740 described eyewear with a Bluetooth module for voice interaction with a phone.

Filed in 2011², Jannard-740 discloses eyewear with a Bluetooth module that can communicate with a cellular phone. Ex.1003, ¶¶42-44.

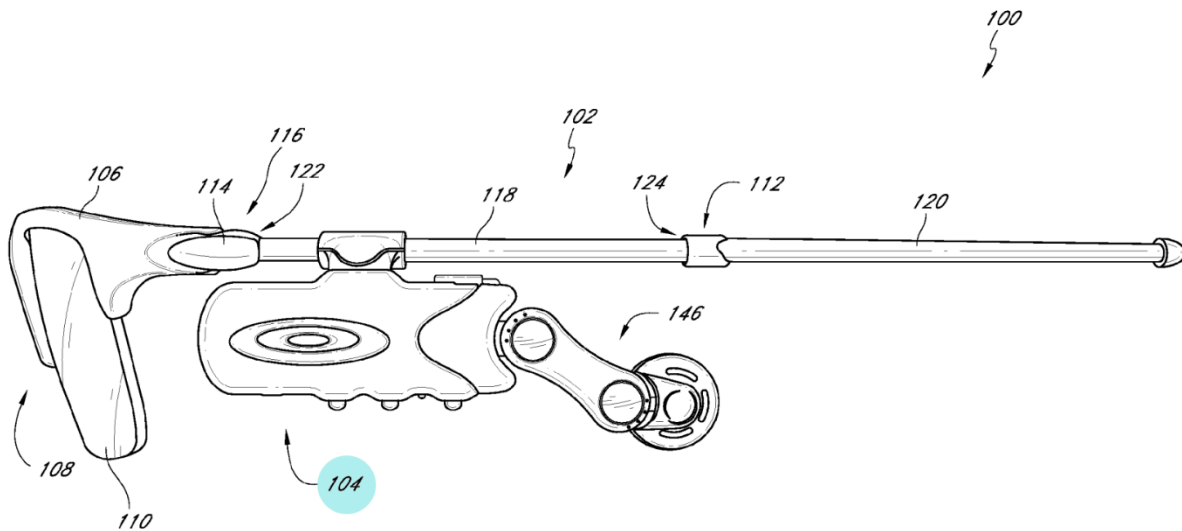


FIG. 1

Ex.1005, Fig.1.

Figure 1 above and Figure 3 below show such a module 104. *Id.*, [0083]-[0084].

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

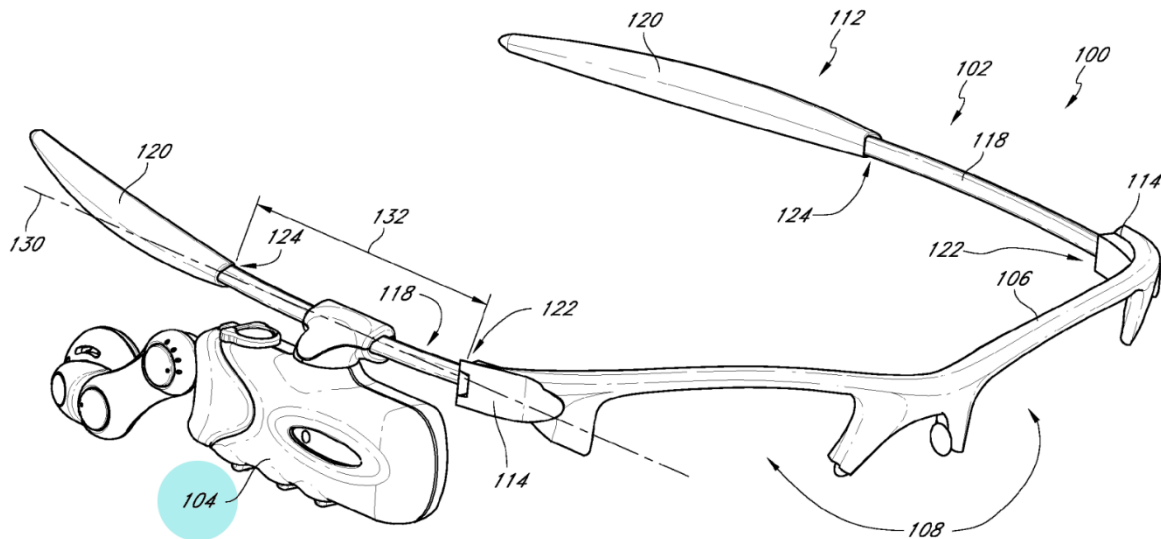


FIG. 3

Id., Fig.3. The module includes “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.” *Id.*, [0086].

In Figure 51, a user wears an audio device 510C on their head. *Id.*, [0194] (referring more generally to “audio device” 510C); *cf. id.*, [0188]-[0189], Fig.49 (“audio device 510A” shown as “eyeglass 540”).

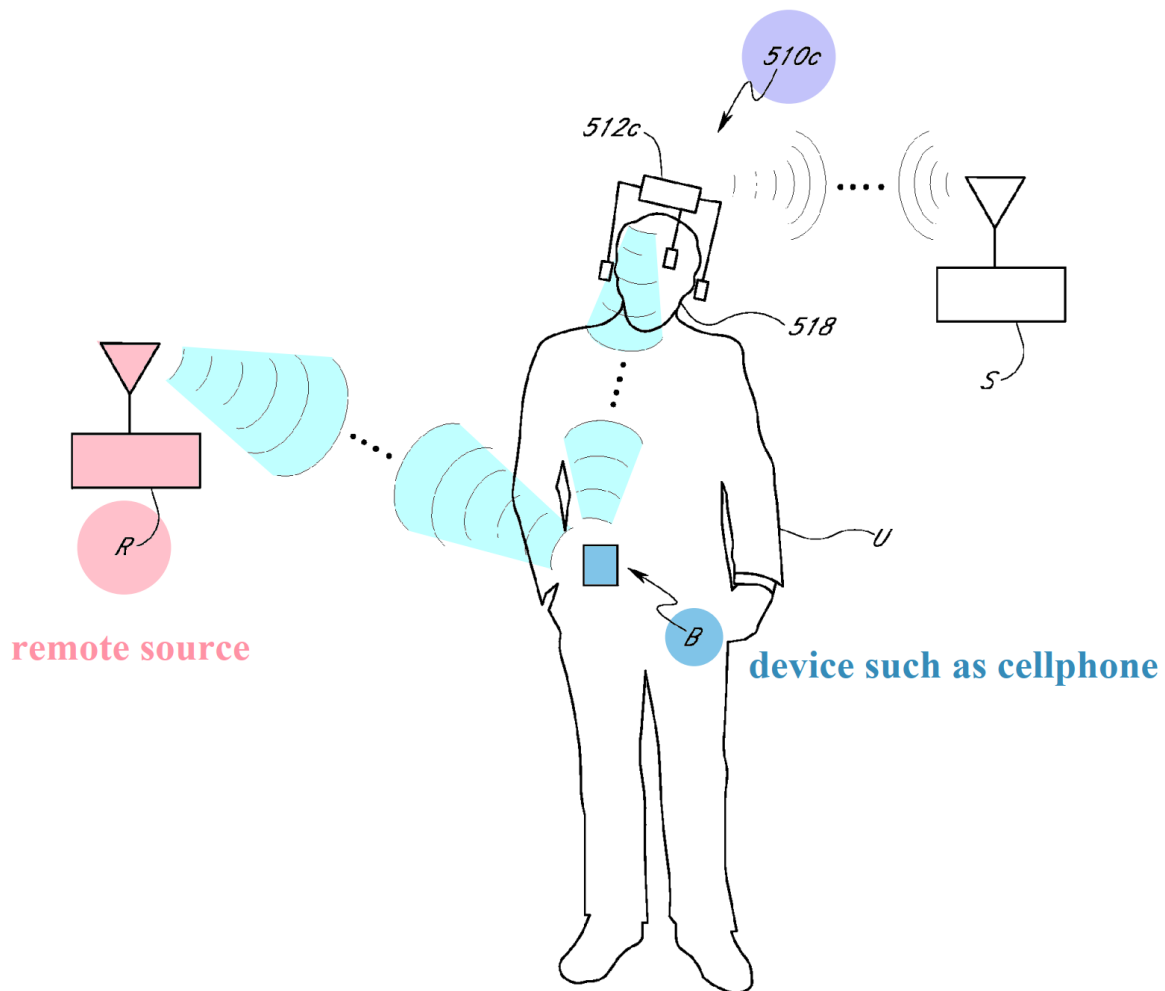


FIG. 51

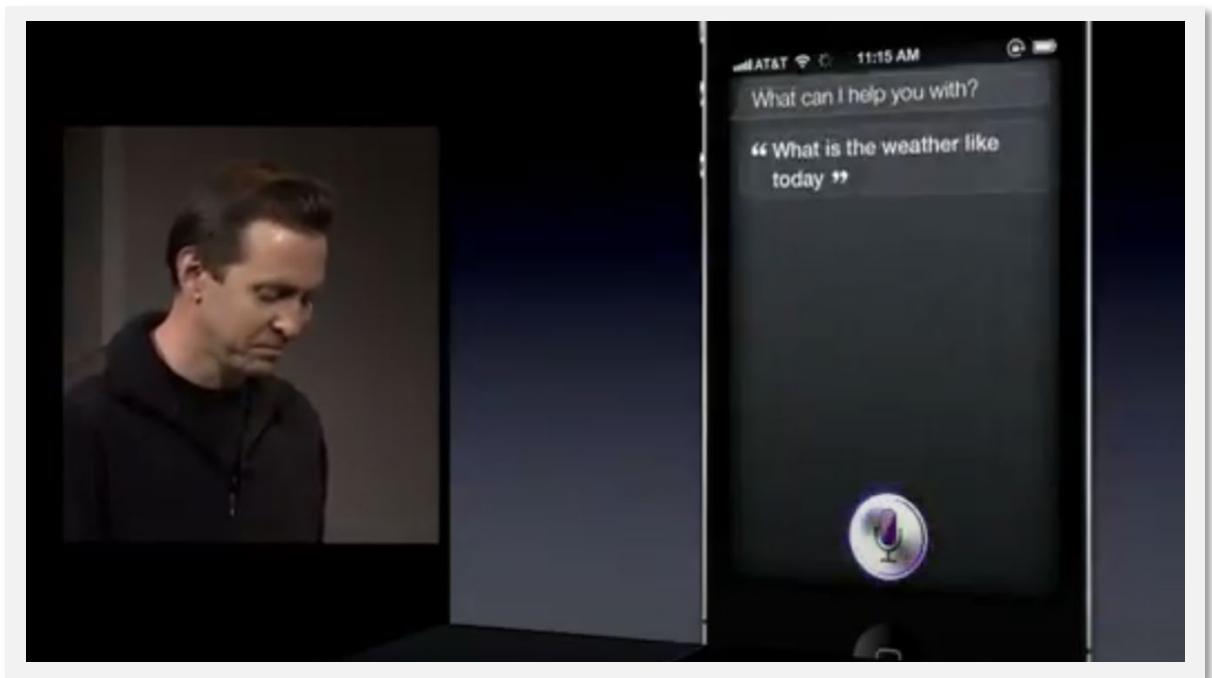
Id., Fig.51. The user also carries a device B such as a “cellular phone” or “palmtop computer.” *Id.*, [0194]. The phone or computer communicates with a “remote source R” over a “wireless data network.” *Id.*, [0195].

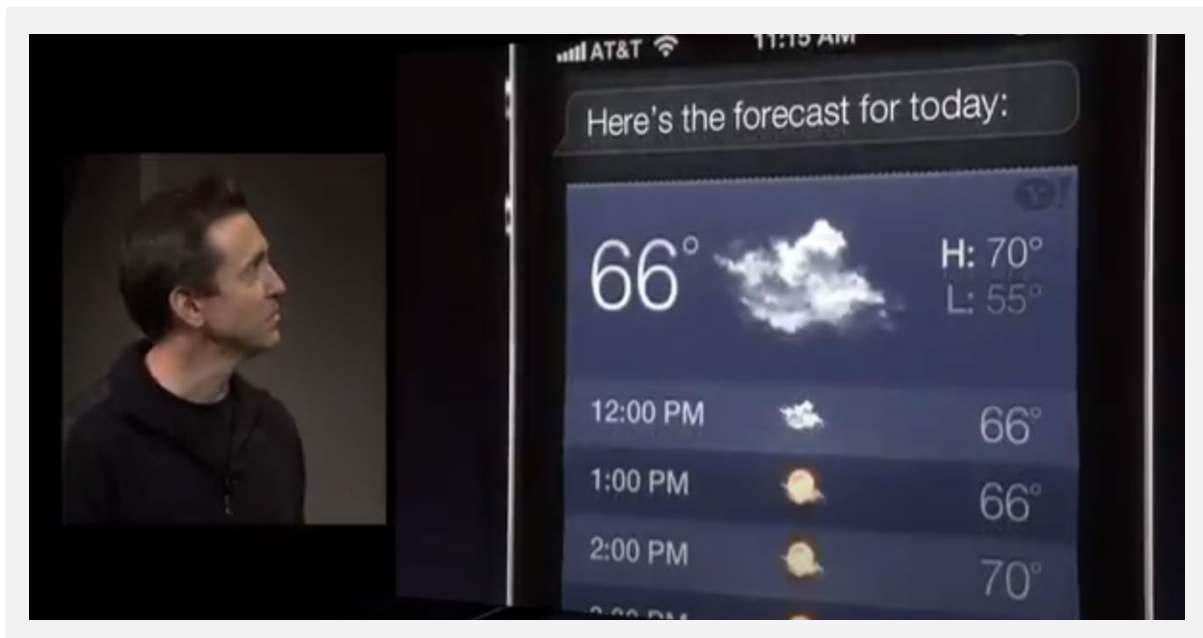
The user may speak voice commands to offboard electronics, e.g., a cellular phone, which can communicate with a remote source, e.g., the Internet. *Id.*, [0161], [0220], [0236]. Jannard-740 discloses, for example, that the user can request and

listen to content, including an email, from another device without manually operating that device. *Id.*, [0188] and [0237] (incorporating by reference Ex.1017); Ex.1017, [0295]-[0299].

C. In 2011, Apple made Siri a standard component of iPhones and filed the Gruber application describing Siri, including that Siri responded to queries from Bluetooth headsets.

Siri was initially released as a third-party app in 2010. Ex.1003, ¶45. Apple then acquired Siri, and in 2011, Apple integrated Siri into the iPhone 4S as a standard feature. *Id.* Coinciding with the 4S's release, Apple demonstrated Siri live at a public Apple Special Event in October 2011. *Id.* Apple showed that Siri could respond to verbal queries like “What is the weather like today?”:





Id. Apple also demonstrated Siri’s ability to answer “What time is it in Paris”; provide market performance in response to “How is the NASDAQ doing today”; recommend restaurants in response to “Find me a great Greek restaurant in Palo Alto”; and provide navigation in response to “Give me directions to Hoover Tower.”

Id. (citing Ex.1021, 3-7).

Apple explained that users could 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[.][”]

Id. (citing Ex.1026, 6-8).

Apple disclosed this functionality and underlying technology in U.S. patent application 12/987,982, which published as publication 2012/0016678 (“Gruber”). Ex.1024; Ex.1003, ¶¶47-51. Filed in January 2011, Gruber discloses electronic devices, such as smartphones, that function as an intelligent automated assistant. Ex.1024, [0073], [0138], Abstract. The assistant “engages with the user in an integrated, conversational manner.” *Id.*, [0008]. Through natural language dialogue, the assistant can “automate the use of data and services available over the Internet.” *Id.*, [0120]-[0124].

For example, Gruber illustrates how Siri responds to requests for a restaurant:



FIG. 2

Id., Fig.2. In Figure 2, the user speaks a query for a romantic Italian restaurant near their office, the phone reproduces the query as conversation bubble 101B, and the assistant (Siri³) responds with a list of restaurants it found (101C, 101D). *Id.*, [0161].

Gruber also illustrates an example where the user asks about the weather:

³ While Gruber uses the more generic term “assistant” or “intelligent automated assistant,” Gruber also refers to “Siri,” such as in Figures 12-19. Petitioner will often use the more familiar term “Siri” to refer to Gruber’s assistant.

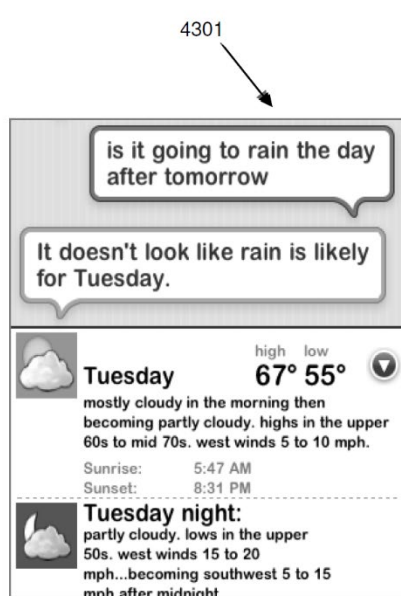


FIG. 43A

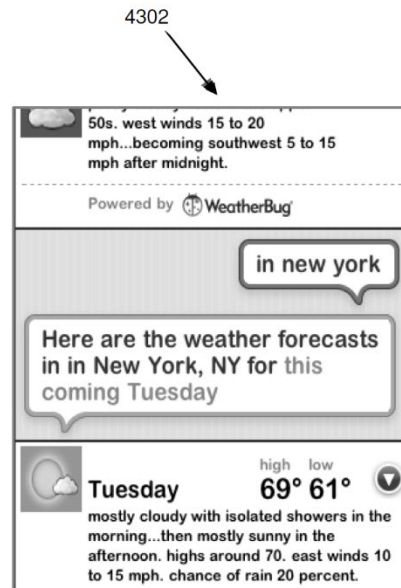
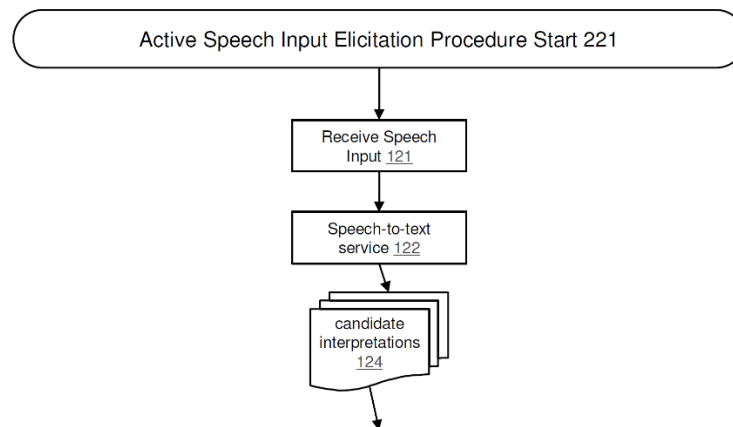


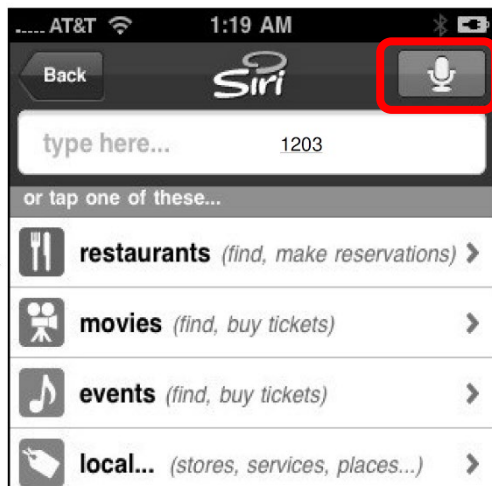
FIG. 43B

Id., [0627], Figs.43A-43B.

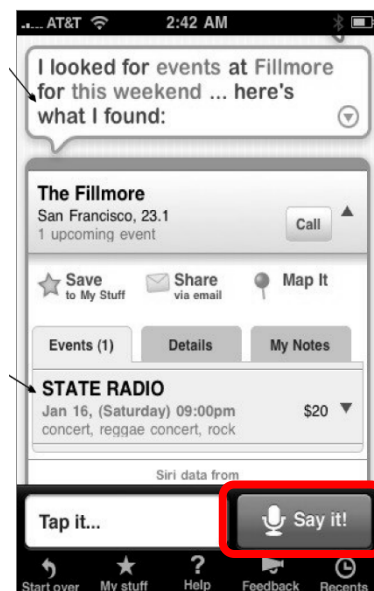
In a section titled “Active Speech Input Elicitation,” Gruber walks through Figure 22 and describes the user inputting their query through speech. *Id.*, [0309]-[0327].



Id., Fig.22 (excerpt). Other figures illustrating user interfaces include the speech-input button:



Id., Fig.12 (excerpt).



Id., Fig.21 (excerpt).

The Siri assistant can receive the user's voice input from "mobile devices such as mobile telephones and tablets," as well as through "Bluetooth headsets." *Id.*, [0139]-[0146].

In many cases, the Siri assistant formulates its responses by looking up information on the Internet. For example, the 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.” *Id.*, [0021]. Additionally, the assistant accesses the Internet to provide responses about movies, hotels, restaurants, “and any other source of entertainment or social interaction which may be found on the Internet.” *Id.*; *see also id.*, [0121]-[0124]. Indeed, Gruber explains an advantage of Siri is its “ability to solve user problems by invoking services on their behalf over the Internet.” *Id.*, [0129]. Gruber’s figures illustrate this, showing Siri responding to user queries by collecting information over the Internet from sites like Yelp (Figure 2), Yahoo! (Figure 27), Google Maps (Figure 27), and WeatherBug (Figure 43B).

III. THE ’138 PATENT

A. Overview

The ’138 patent is directed to electronic eyewear with a docking station. Ex.1001, 1:66-2:4; Ex.1003, ¶¶52-55. This docking station allows the eyewear to be “easily joined with a plurality of electronic application modules.” Ex.1001, 1:66-2:4. These so-called “application modules” include electronic devices to implement a function, such as “audio playback” or “video recording.” *Id.*, 9:32-43. The

universality of the docking station and the modular nature of the application modules supposedly provide the user “with a variety of interchangeable applications.” *Id.*, 2:7-8. Moreover, if “electronic application modules break, they can also be easily replaced without replacing the entire system.” *Id.*, 2:10-11.

The ’138 patent devotes nearly all its specification to discussing the application modules and docking stations, including how the modules dock with the stations, how many docking stations different embodiments have, and where to put the docking station and application modules within the eyewear system.

Despite the importance of the docking station in the specification, the ’138 patent’s claims do not expressly recite a docking station. Nor do they recite details about how the application module docks with the eyewear—the claims just recite the application module is “mechanically coupled” to the eyewear frame.

Rather than align with the focus of the specification, the ’138 patent’s claims emphasize the high-level concept of an external device receiving a verbal query from a wearer of the eyewear and searching the Internet to formulate a response. Only a few sentences in the specification correspond to this concept. The ’138 patent asserts an application module could, “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, 20:2-13. The ’138 patent does not elaborate except to say that one example would be “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.” *Id.*, 20:13-16. Based on that meager disclosure, Patent Owner drafted the challenged claims.

B. Prosecution History

The Examiner rejected the claims during prosecution and asserted that Jannard-382 (Ex.1017) and Tran (Ex.1030) teach or suggest all limitations of the independent claims other than “by searching the Internet for the response to the verbal query.” Ex.1002, 32-33, 71, 74-86. To overcome the rejections, PO amended independent claim 1 to further recite “by searching the Internet for the response to the verbal query” and similarly amended the other independent claims. *Id.*, 59-62. The Examiner next allowed the claims. *Id.*, 27-34. The Examiner did not consider Thiel (Ex.1028), Jannard-740 (Ex.1005), or Gruber (Ex.1024).

IV. LEVEL OF ORDINARY SKILL

The '138 patent relates to electronic eyewear. Ex.1001, 1:66-2:4. Based on the relevant factors, *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995), a hypothetical person of ordinary skill in the art (“POSITA”) would have had 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. Ex.1003, ¶¶28; *see also id.*, ¶¶1-65. A POSITA would have also had at least 2 years of experience designing

eyewear and/or consumer electronics. *Id.*, ¶28. Work experience could substitute for formal education and additional formal education could substitute for work experience. *Id.*

This Petition does not turn on this specific definition of the level of ordinary skill. The claims would have been obvious from the perspective of a POSITA under any reasonable definition. *Id.*

V. CLAIM CONSTRUCTION

In June 2024, Patent Owner threatened to sue Petitioner for infringement of the '138 patent in *e-Vision Optics, LLC et al. v. Luxottica Group S.p.A. et al.*, No. 8:23-cv-02013 (C.D. Cal.) (“the Litigation”). Although the parties may propose constructions for certain terms in litigation for purposes of determining infringement, no claim terms require construction to resolve the obviousness challenges here. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). Nonetheless, the ordinary meaning of a term is assessed from the perspective of a POSITA, who is “deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc). Accordingly, in its arguments below, Petitioner identifies passages from the specification

demonstrating that the prior art discloses claim terms in the manner the '138 patent uses them.

VI. STATEMENT OF RELIEF REQUESTED

A. Grounds

Petitioner requests IPR for the following grounds of unpatentability:

Ground	Reference(s)	Basis	Challenged Claims
1	Thiel and Gruber	§103	1-20
2	Thiel, Gruber, and Maddern	§103	5
3	Thiel, Gruber, and Lu	§103	8
4	Jannard-740	§103	1, 5-6, 8, 11-16
5	Jannard-740 and Maddern	§103	5
6	Jannard-740 and Osterhout	§103	7, 17-18
7	Jannard-740 and Gruber	§103	1-20
8	Jannard-740, Gruber, and Maddern	§103	5

In support of the Petition, Petitioner submits the expert declaration of John Feland, Ph.D. Ex.1003.

B. Asserted References

The '138 patent's earliest claimed priority date is January 6, 2012. Ex.1001. However, the '138 patent's claims are not entitled to this priority date because the

priority provisional application filed on that day does not support the claim limitation “by searching the Internet for the response to the verbal query,” as recited in independent claim 1, nor does it support similar limitations in the other independent claims. Ex.1003, ¶60. The terms “search,” “Internet,” “verbal,” and “query” are absent from that provisional application. Ex.1027, 14-48. And that provisional application fails to describe the claim limitation through different words. Ex.1003, ¶60. Therefore, the ’138 patent’s claims are entitled to a priority date of no earlier than April 10, 2012.

Furthermore, claim 8 of the ’138 patent is entitled to a priority date significantly later than 2012. Claim 8 recites “pairing the Bluetooth wireless chip with the external device before transmitting the verbal query to the external device.” However, none of the priority applications of the ’138 patent provide sufficient written description support for this limitation, including “pairing” or the timing of pairing relative to the transmission of the verbal query. *Id.*, ¶61. Therefore, claim 8’s effective filing date is the ’138 patent’s actual filing date, March 16, 2020.

The ’138 patent initially appears entitled to pre-AIA status based on its asserted priority date before 2013. But because claim 8’s effective filing date is in 2020, the ’138 patent is not entitled to pre-AIA status. Nonetheless, in the table below, Petitioner includes a “Pre-AIA Art Type” column that would apply if all claims were effectively filed before 2013.

The references herein are prior art for at least the following reasons:

Ex.	Reference	Date	Pre-AIA Art Type	Post-AIA Art Type
1028	Thiel	Published: October 28, 2010	§102(b)	§§102(a)(1),(2)
1024	Gruber	Filed: January 10, 2011 Published: January 19, 2012	§§102(a),(e)	§§102(a)(1),(2)
1029	Maddern	Published: December 30, 2010	§102(b)	§§102(a)(1),(2)
1031	Lu	Filed: November 13, 2018 Published: March 14, 2019	N/A	§§102(a)(1),(2)
1005	Jannard-740	Filed: August 2, 2011	§102(e)	§102(a)(2)
1006	Osterhout	Filed: February 28, 2011 Published: September 1, 2011	§§102(a),(e)	§§102(a)(1),(2)

The references are analogous art because they are from the same field as the '138 patent, e.g., eyewear and/or consumer electronics. Ex.1003, ¶¶33-55; Ex.1001, 1:66-2:4; *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016). They are also pertinent to a problem the inventors were focused on, e.g., consumer electronics with various communication and processing capabilities. *Id.*

VII. GROUND 1: CLAIMS 1-20 ARE OBVIOUS OVER THIEL AND GRUBER

A. Claim 1

Claim 1 covers certain Bluetooth-enabled eyewear, where an eyewear module's Bluetooth capability allows the eyewear to communicate a verbal query to an external device and receive a response from the external device. Thiel discloses Bluetooth-enabled eyewear as claimed in limitations 1[a] through 1[d]. Gruber discloses Siri, an agent that runs on a device like a phone. Thiel and Gruber overlap in their disclosure of communicating verbal queries over Bluetooth to an external device, like a phone, and receiving a response from the external device as claimed in limitation 1[d]. Gruber discloses limitation 1[e], which specifies that the external device searches the Internet for the response to the verbal query.

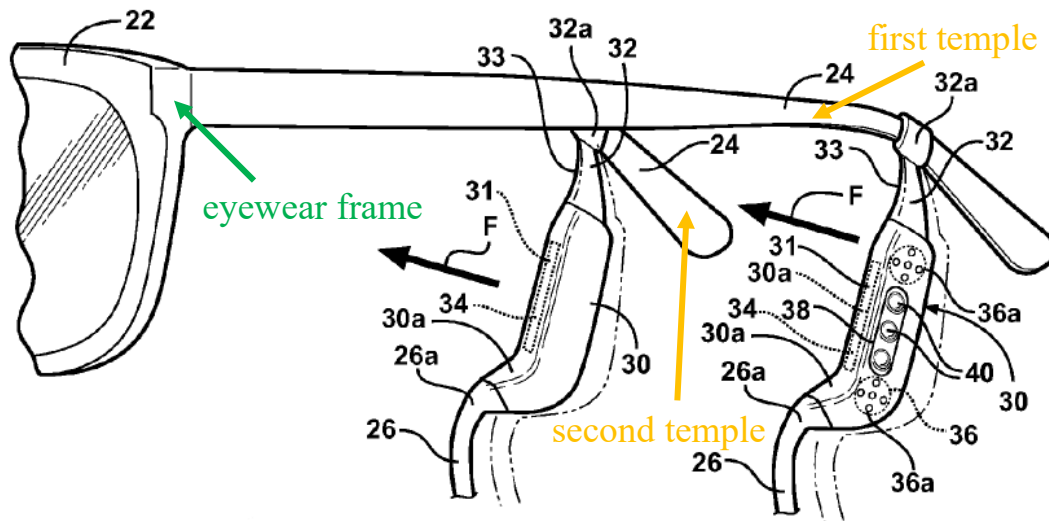
1. Preamble

The preamble recites “[e]yewear.” Thiel discloses eyewear, focusing on an “eyewear retention device [] used to retain eyewear.” Ex.1028, [0024]; *see also id.*, Title, Abstract, [0010]-[0012], [0024]; Ex.1003, ¶67.

2. Limitation 1[a]

This limitation recites “an eyewear frame having a first temple and a second temple.”

Thiel discloses this limitation. Ex.1003, ¶68. As shown in Figure 3, Thiel's eyewear includes an eyewear frame (green) having first and second temples (orange). Ex.1028, [0024], [0038]; *see also id.*, [0003], [0006]-[0009].



Id., Fig.3. The eyewear frame secures lenses through which the wearer sees. Ex.1003, ¶68. Thiel thus discloses what the '138 patent describes as an “eyewear frame.” *Id.*; Ex.1001, 8:17-24.

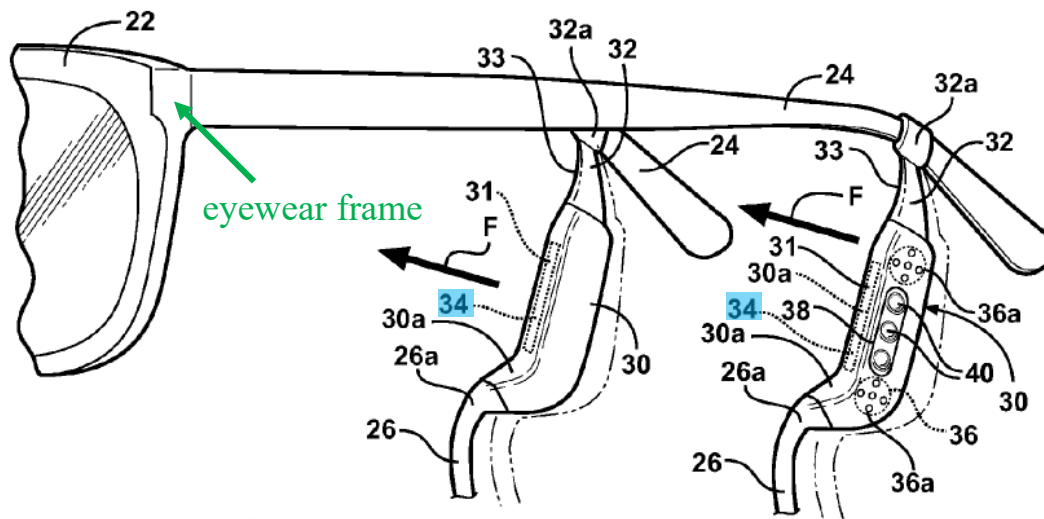
3. Limitation 1[b]

This limitation recites “a speaker coupled to the eyewear frame.”

Thiel discloses this limitation. For example, Thiel discloses that its eyewear retention device includes “a sound transmitter located on a forward-facing inner edge of the audio device.” Ex.1028, [0012]; *see also id.*, [0042]-[0043], [0049]. The sound transmitter “may transmit the audio signals by air conduction.” *Id.*, [0011];

see also id., [0030]. A POSITA would have understood that this sound transmitter is a speaker. Ex.1003, ¶69.

Figure 3 illustrates sound transmitters 34 (blue) of Thiel's eyewear retention device coupled to the eyewear frame:



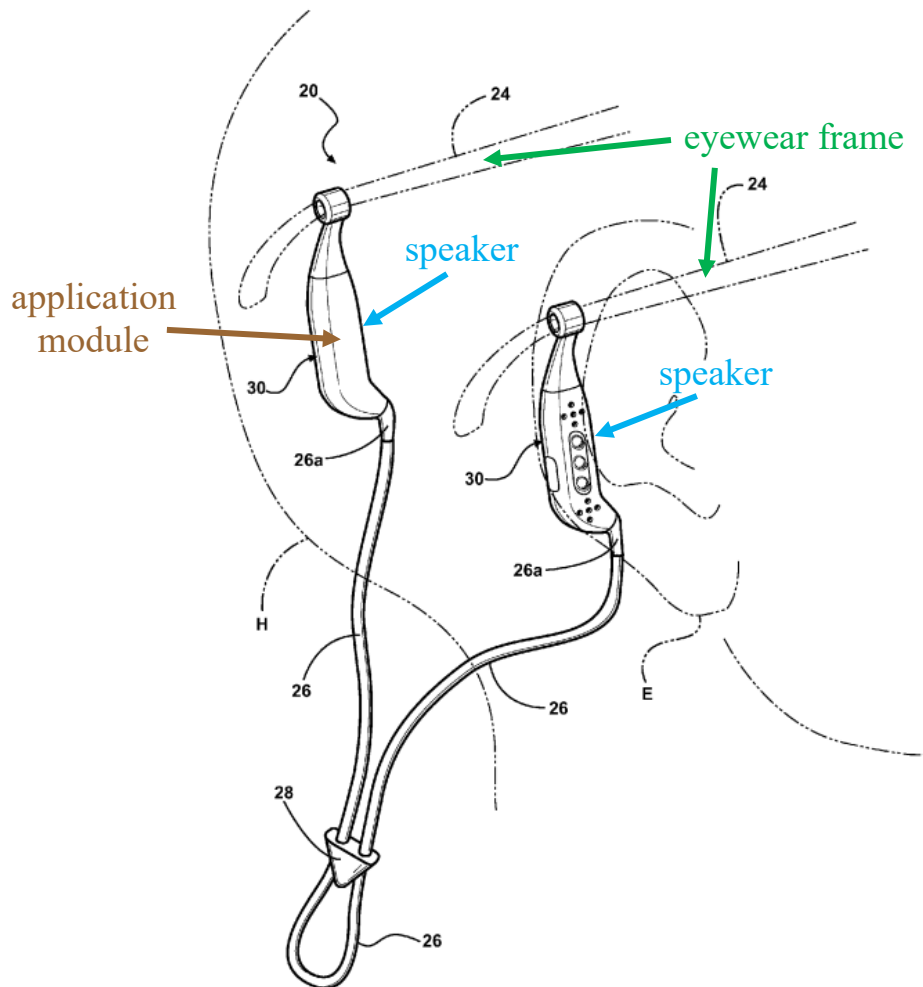
Id., Fig.3; Ex.1003, ¶70. Indeed, the '138 patent states: “As used herein, ‘coupled’ may refer to any manner of connecting two components together in any suitable manner, such as by way of example only: attaching (e.g. attached to a surface), disposing on, disposing within, disposing substantially within, embedding within, embedded substantially within, etc.,” and “coupled” does not require a fixed attachment. Ex.1001, 7:47-65.

Thiel thus discloses a speaker coupled to the eyewear frame. Ex.1003, ¶¶69-71.

4. Limitation 1[c]

This limitation recites “an application module mechanically coupled to the eyewear frame and operably coupled to the speaker.”

Thiel discloses this limitation. For example, Thiel’s eyewear retention device includes an audio device 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, Abstract, [0011], [0031]; *see also id.*, [0049]. This audio device is an “application module” that is mechanically coupled to the eyewear frame, as shown in Figure 2. Ex.1003, ¶¶72-73; Ex.1001, 21:59-62; *see also* Ex.1028, [0041], [0024].



Ex.1028, Fig.2.

In configurations where Thiel's eyewear retention device includes two different audio devices that are separately coupled to the eyewear frame, as shown in Figure 2 above, "[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, [0049], Figs.2-5; *see also id.*, [0032], [0037], [0039], [0046]. Thiel accordingly discloses that a first audio device is

operably coupled to transmit audio both to its own speaker and the speaker of a second audio device. Ex.1003, ¶75. Furthermore, audio device 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, 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, [0049]; *see also id.*, [0005], [0010]-[0011], [0026]-[0027], [0030]. This demonstrates that Thiel’s eyewear retention device has “coupled” components consistent with the broad usage of the term in the ’138 patent. Ex.1003, ¶75; Ex.1001, 7:47-65.

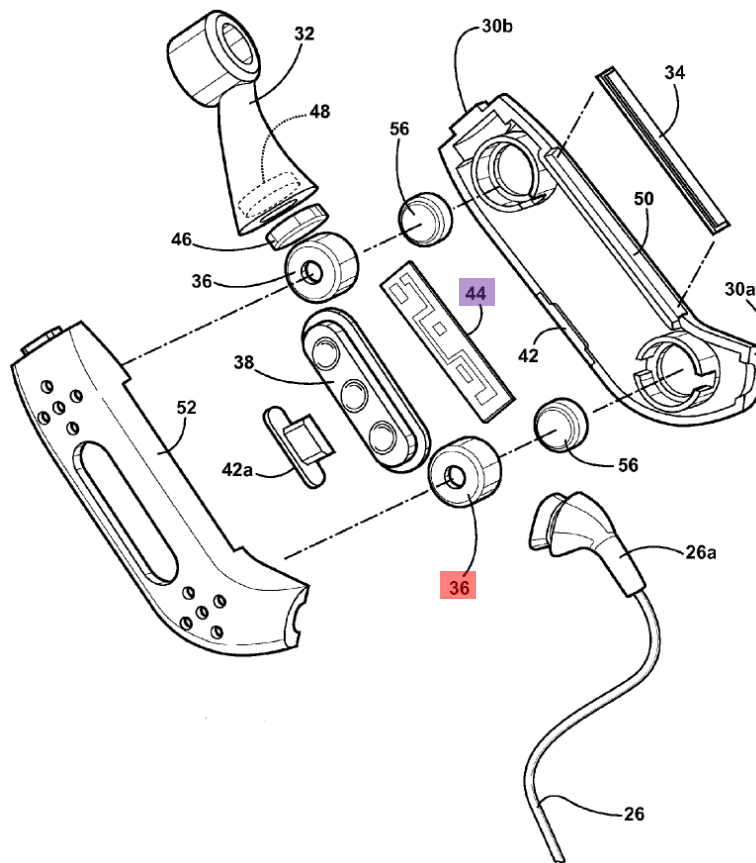
Thus, Thiel discloses an application module that is mechanically coupled to the eyewear frame and operably coupled to the speaker. Ex.1003, ¶¶72-76.

5. Limitations 1[d]-1[e]

Limitation 1[d] recites that the 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.”

Limitation 1[e] specifies that “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.”

Thiel discloses at least limitation 1[d]. As shown in Figure 5, Thiel’s audio device includes one or more microphones 36 (red) and a Bluetooth type chip or chipset type receiver 44 (purple). Ex.1028, [0043], [0046]-[0047], [0049]; *see also id.*, [0027].



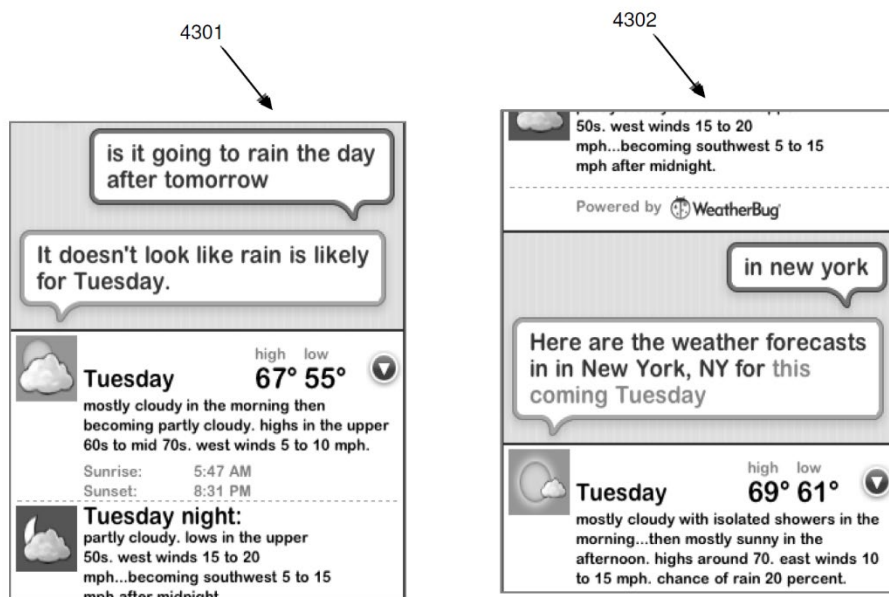
Id., Fig.5. As discussed for limitation 1[c], these components “may be operatively connected as needed by those skilled in the art to enable the receiver 44 to supply

audio signals to sound transmitter 34 from a remote device such as an MP3 player or mobile phone or other device, 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.” *Id.*, [0049]; *see also id.*, [0043]-[0044], [0010], [0037], [0006]. The microphone captures the user’s voice signals, which can include voice commands. *Id.*, [0043]-[0044]. The Bluetooth chip transmits the user’s voice commands to the user’s Bluetooth-enabled phone or other external device. *Id.* For example, in this manner, the user can use verbal instructions to initiate music playback on the phone, turn volume up or down, and request a new music track or playlist. *Id.*, [0044]. The phone sends the requested audio content back to the Bluetooth chip, which relays the audio content to speakers for playback to the user. *Id.*, [0049]. Accordingly, Thiel discloses limitation 1[d]. Ex.1003, ¶¶77-78.

Thiel’s Bluetooth-enabled eyewear is effectively eyewear coupled to a Bluetooth headset. Thiel’s disclosure of using Bluetooth to communicate voice commands to external devices like phones to request audio content represents a small subset of what Bluetooth was used for by the 2012 claimed priority date of the ’138 patent. Ex.1003, ¶79. By the end of 2011, it was well known that Bluetooth headsets could be used with apps like Siri, enabling users to communicate verbal queries over

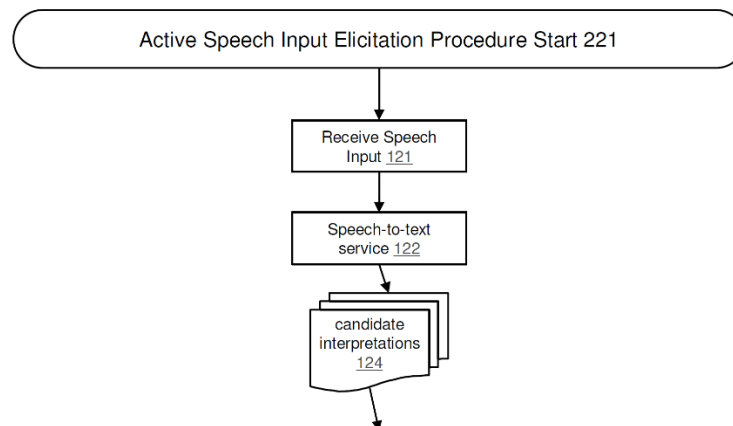
Bluetooth to their phones, receive their phones' responses, and hear the responses played back over speakers. *Id.*

Gruber discloses in detail the user experience with apps like Siri, as well as the underlying systems. Ex.1003, ¶¶80-82. Gruber discloses a Bluetooth-enabled external device, such as a smart phone, functioning as an intelligent automated assistant. Ex.1024, [0079], [0139]-[0140], [0073], Abstract; *see also id.*, [0075]. For a concrete discussion, Petitioner will focus on the example of a smart-phone running Siri, but the discussion below applies equally to other devices that Gruber discusses. Gruber discloses an example where the user asks about the weather:

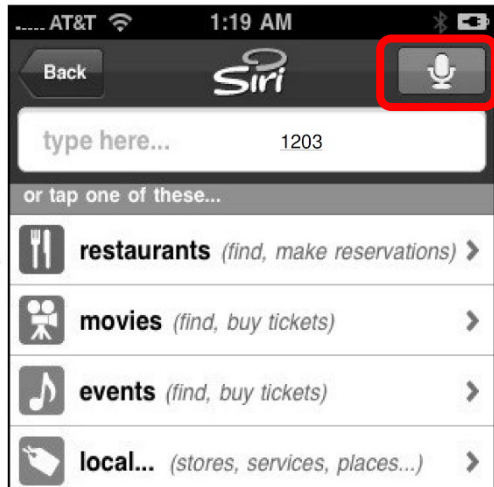
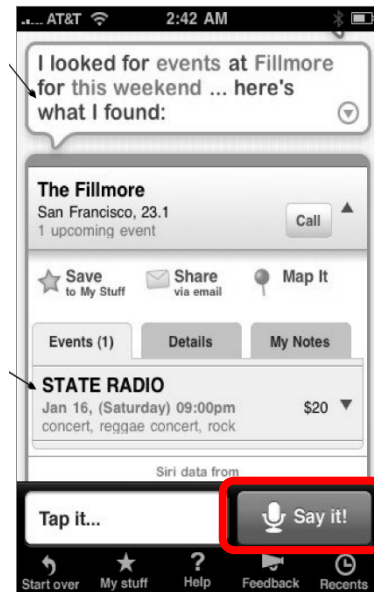
**FIG. 43A****FIG. 43B**

Id., [0627], Figs.43A-43B. The phone's Siri assistant responds to the query, including by providing a weather forecast. *Id.*

The user interacts with Siri through natural-language dialogue, such as by inputting the dialogue through speech. *See id.* Moreover, Gruber’s phone processes voice input from other devices like “Bluetooth headsets.” *Id.*, [0119]-[0124], [0139]-[0140]. This enables voice-based communication methods, where speech is used for both inputs and outputs, “allowing for an embodiment of the assistant for the blind.” *Id.*, [0090]; *see also id.*, [0152]-[0155], [1024]. As shown in Figure 22 of Gruber, the user may input their query through speech. *Id.*, [0309]-[0327].



Id., Fig.22 (excerpt). User interfaces include the speech-input button:

*Id.*, Fig.12 (excerpt)*Id.*, Fig.21 (excerpt)

Based on Gruber's disclosure that a user can interact with Siri over a Bluetooth headset, and based on the background knowledge of Bluetooth headsets, it would have been obvious to a POSITA that Gruber contemplated using a headset with a microphone and Bluetooth chip as recited in limitation 1[d] and as exemplified in Thiel. Ex.1003, ¶183.

Gruber also discloses limitation 1[e] because, in several cases, Siri formulates its responses to user queries by looking up information on the Internet. *Id.*, ¶184. For example, the 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, [0021]. Additionally, Siri accesses the Internet to provide

responses about movies, hotels, restaurants, “and any other source of entertainment or social interaction which may be found on the Internet.” *Id.*; *see also id.*, [0121]-[0124]. An advantage of Siri is its “ability to solve user problems by invoking services on their behalf over the Internet.” *Id.*, [0129]. Gruber’s figures illustrate this, showing Siri responding to user queries by collecting information over the Internet from sites like Yelp (Figure 2), Yahoo! (Figure 27), Google Maps (Figure 27), and WeatherBug (Figure 43B). *See also id.*, [0010], [0120]-[0124], [0129], Claim 44.

Combining Thiel’s Bluetooth-enabled eyewear with Gruber’s smartphone running Siri would have been obvious. Ex.1003, ¶85. A POSITA would have been motivated to combine Thiel and Gruber in this manner with a reasonable expectation of success for several reasons. *Id.*, ¶86. Thiel likens its application module to a Bluetooth headset (Ex.1028, [0005]), and Gruber specifically mentions using its phone with headsets, including Bluetooth headsets (Ex.1024, [0658], [0140]). Thiel discloses using its Bluetooth-enabled eyewear to communicate verbal queries to an external mobile phone that responds with requested audio content, and Gruber discloses a mobile phone whose Siri agent looks up information on the Internet in response to verbal queries input through a Bluetooth headset. Ex.1003, ¶85. A POSITA—indeed, even a layperson—would have been familiar with the commonplace experience of using a Bluetooth headset with a Siri-enabled phone

and would have been aware of Apple’s demonstrations of Siri, including its announcements that Siri could be used handsfree with a Bluetooth headset. *Id.*

Accordingly, combining Thiel and Gruber would have simply been a combination of prior-art elements according to known methods to yield predictable and already-demonstrated results. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). The combination would also represent nothing more than a simple substitution of Gruber’s mobile phone for the mobile phone described in Thiel that Thiel’s eyewear module communicates with—again, with predictable results. *Id.* at 417. A POSITA would also have been motivated to combine Thiel and Gruber to achieve the benefits disclosed in Gruber and expand the applications of Thiel’s eyewear module beyond allowing a user to request and control, e.g., audio content. Ex.1003, ¶86. The combination would allow a user of Thiel’s eyewear module to obtain answers to spoken queries on a wide range of topics, including the weather, nearby restaurants, and directions to destinations. *Id.*; Ex.1024, [0120]. In general, the combination would do nothing more than arrange old elements with each performing the same function it had been known to perform, expanding the applications of Thiel’s eyewear, but yielding known results that were already familiar to a POSITA (as well as laypersons) due to the commonplace using of Bluetooth headsets for communicating with Siri-enabled phones.

Thus, claim 1 is obvious over Thiel and Gruber. Ex.1003, ¶¶67-88.

B. Claims 2-4

Claims 2-4 each depend from claim 1. Claim 2 adds: “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 adds: “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.” And claim 4 adds: “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.”

In each case, the limitation the dependent claim adds does not limit the structure or function of claim 1’s eyewear. Instead, the added limitation merely specifies a function of the Bluetooth-enabled external device (e.g., phone). Moreover, claims 2-4 are written broadly enough to encompass a Bluetooth-enabled phone that controls an external audio device (claim 2), external video device (claim 3), or light or temperature (claim 4) independently of the phone’s interaction with the eyewear module.

Gruber discloses these dependent claim limitations. Ex.1003, ¶90. For example, Gruber discloses that, in response to user instructions, the Siri assistant may operate devices “remotely,” such as by “playing music or video” or by “controlling light and temperature.” Ex.1024, [0123]. In other words, Gruber

discloses that user can instruct Siri to begin or stop playing music or video on an external device and that a user can also implement their preferences on lighting and temperature by instructing Siri to control light or temperature or both. Ex.1003, ¶¶90. In each case, Gruber’s disclosure applies to any user, including a user wearing Thiel’s eyewear. *Id.* And although claims 2-4 do not require it, a wearer of Thiel’s eyewear module could communicate their instructions for controlling music, video, light, and temperature via the Bluetooth connection between the eyewear module and Gruber’s smartphone running Siri. *Id.*

Thus, claims 2-4 are obvious over Thiel and Gruber. Ex.1003, ¶¶89-91.

C. Claim 5

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

Thiel discloses the application module (audio device) may have multiple different “controls 38 operable by the user.” Ex.1028, [0044]. These controls may be buttons that the user manually operates, but “[c]ontrols 38 may also be voice-activated.” *Id.* It would have been obvious to implement this voice activation by incorporating a voice recognition chip in Thiel’s application module and coupling the voice recognition chip to the microphone and the Bluetooth chip. Ex.1003, ¶¶93; *see also* Ex.1019, 1:9-13. Implementing the disclosed voice activation of different

controls requires voice-recognition processing to identify the control the user wishes to activate. Ex.1003, ¶93. A POSITA would have been motivated to implement the voice-recognition processing by incorporating a voice recognition chip and operably coupling it to the microphone and Bluetooth chip because voice recognition chips were readily available on the market in a modular form, providing an “off the shelf” solution and enabling a more efficient, cost-effective implementation than developing a custom component for the required voice recognition. *Id.* Using a voice recognition chip thus represents the use of a known technique (using off-the-shelf voice recognition chip to implement voice-activation functionality) to implement exactly what Thiel discloses with predictable results. *Id.*; *KSR*, 550 U.S. at 416-17. A POSITA would have been motivated to incorporate and couple such a chip in Thiel’s application module with a reasonable expectation of success because the chip is an off-the-shelf solution which provides voice functionality in devices like Thiel’s. Ex.1003, ¶93; *see also* Ex.1019, 1:9-13; Ex.1020, 19:28-20:1 (prior art disclosure in 1999 by ’138 patent inventor Ronald Blum regarding use of “voice recognition chip”); Ex.1012, 3:52-64.

Thus, claim 5 is obvious over Thiel and Gruber. Ex.1003, ¶¶92-94.

D. Claim 6

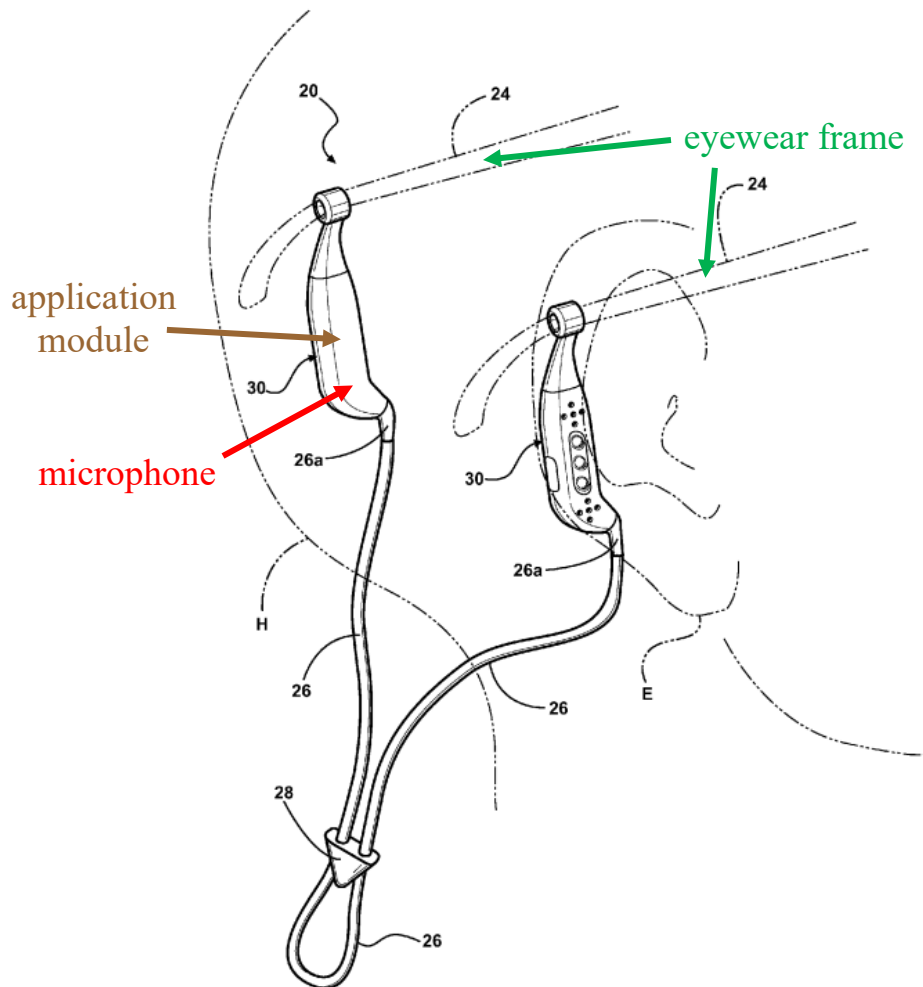
1. Preamble

The preamble recites “[a] method.” Thiel discloses methods. Ex.1028, [0013], [0022], [0037], [0043]; Ex.1003, ¶95.

2. Limitation 6[a]

This limitation recites “receiving, by a microphone mechanically coupled to an eyewear frame, a verbal query from a person wearing the eyewear frame.”

The combination of Thiel and Gruber discloses this limitation for the reasons discussed for limitations 1[c]-1[d] and because Thiel’s Figure 2 illustrates a microphone mechanically coupled to an eyewear frame. *Supra* §§VII.A.4-5; Ex.1003, ¶96.



Id., Fig.2.

3. Limitation 6[b]

This limitation recites “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.”

The combination of Thiel and Gruber discloses this limitation for the reasons discussed for limitations 1[c]-1[e] and because Thiel illustrates in Figure 2 its

wireless chip (e.g., Bluetooth chip) is mechanically coupled to an eyewear frame.

Supra §§VII.A.4-5; Ex.1003, ¶97.

4. Limitation 6[c]

This limitation recites “receiving, by the wireless chip, the response to the verbal query from the external device.”

The combination of Thiel and Gruber discloses this limitation for the reasons discussed for limitation 1[d]. *Supra* §VII.A.5; Ex.1003, ¶98.

5. Limitation 6[d]

This limitation recites “providing the response to the verbal query to the person wearing the eyewear frame via a speaker operably coupled to the wireless chip.”

The combination of Thiel and Gruber discloses this limitation for the reasons discussed for limitation 1[d]. *Supra* §VII.A.5; Ex.1003, ¶99.

A POSITA would be motivated to combine Thiel and Gruber and have a reasonable expectation of success in arriving at claim 6 for the same reasons as claim 1. *Supra* §VII.A; Ex.1003, ¶100. Thus, claim 6 is obvious over Thiel and Gruber. Ex.1003, ¶¶99-101.

E. Claim 7

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.”

Gruber discloses this dependent claim limitation. Ex.1003, ¶103. For example, Gruber discloses its Siri 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, [0120]-[0124]. Gruber also discloses a use-case where a user asks about the weather and, in response, receives weather information for New York. *Id.*, [0627]; *see also id.* [0628], [0021], [0244], [0586], [0934] (“I know about ... weather.”), [0937] (Anchor text: weather). Gruber illustrates this in Figures 43A and 43B:

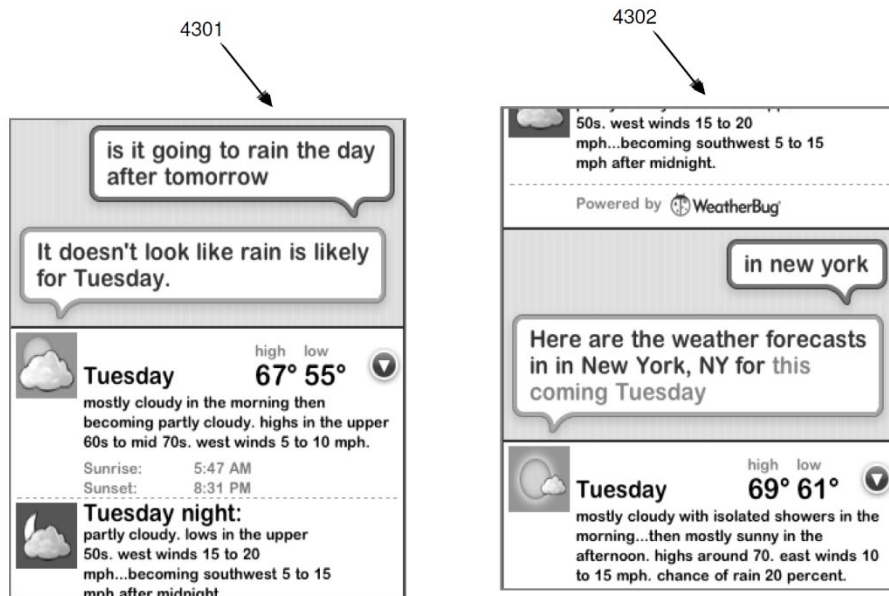


FIG. 43A

FIG. 43B

Id., Figs.43A-43B, [0627].

Thus, claim 7 is obvious over Thiel and Gruber. Ex.1003, ¶¶102-104.

F. Claim 8

Claim 8 depends from claim 6 and 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” appears only in claim 8. The ’138 patent fails to expressly explain how to achieve the claimed “pairing” or specify when such pairing would occur, demonstrating that the ’138 patent assumes a POSITA would be readily familiar with Bluetooth pairing and its timing. That assumption is correct because pairing is an important part of the Bluetooth standard. Ex.1003, ¶105. In

applications where a service over Bluetooth can expose private data or allow one device to control another, maintaining appropriate security requires identifying trusted devices. *Id.* Bluetooth pairing is a part of the Bluetooth standard that provides a protocol for identifying trusted devices and associating cryptographic keys with them. *Id.*

The limitation claim 8 adds would have been obvious. *Id.*, ¶106. For example, as discussed for limitation 1[d], Thiel discloses that the wireless chip is a Bluetooth wireless chip and that the Bluetooth wireless chip communicates with and transmits the verbal query to a Bluetooth-enabled external device, which Thiel's device can control. *Supra* §VII.A.5. A POSITA would have known that, e.g., in compliance with the Bluetooth standard or for security reasons, the Bluetooth devices in Thiel would pair before transmitting data such as a verbal query for searching. Ex.1003, ¶106; *see also* Ex.1029, [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, [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.”). Similarly, Gruber discloses that its Siri-enabled phone can be a Bluetooth-enabled external device that wirelessly communicates with other devices and can control or

be controlled by such other devices. Ex.1024, [0079] (“[V]arious types of interfaces may be provided such as ... BluetoothTM.”), [0139]-[0140] (“Bluetooth headsets”); *see also id.*, [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.”). A POSITA would have known that, e.g., in compliance with the Bluetooth standard or for security reasons, the Bluetooth devices in Gruber would pair before transmitting data such as a verbal query that would cause Siri to search the Internet. Ex.1003, ¶106; *see also* Ex.1029, [0040]; Ex.1007, [0031].

Thus, claim 8 is obvious over Thiel and Gruber. Ex.1003, ¶¶105-107.

G. Claims 9-10

Claim 9 depends from claim 6 and 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 depends from claim 6 and 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.”

Gruber discloses these dependent claim limitations for the reasons discussed for claim 4. *Supra* §VII.B; Ex.1003, ¶109.

Thus, claims 9-10 are obvious over Thiel and Gruber. Ex.1003, ¶¶108-110.

H. Claim 11

Claim 11 depends from claim 5 and recites “wherein the external device is at least one of a cell phone, a smart phone, a computer, an iPad, and/or a tablet.” Claim 11’s dependency from claim 5 rather than claim 6 appears to be the result of a PTO printing error. Ex.1002, 10, 22. Thus, Petitioner analyzes claim 11 both as drafted and also as if it depended from claim 6 rather than claim 5. The analysis is the same because claim 11 merely specifies what kind of device the recited “external device” is and that device performs the same role in these claims.

Thiel discloses the limitation claim 11 adds. Ex.1003, ¶112. For example, Thiel discloses “the eyewear retention device may employ Bluetooth technology and/or wireless technology” to communicate with a variety of devices, “such as a cellular telephone, ..., computer, portable computer, PDA, mobile communications device or other audio transmission device.” Ex.1028, [0010]; *see also id.*, [0026], [0055], [0005], Claims 5, 14.

Gruber also discloses the limitation that claim 11 adds. Ex.1003, ¶113. For example, Gruber discloses several options for a “computing device 60 suitable for implementing at least a portion of the intelligent automated assistant features and/or functionalities disclosed herein,” i.e., suitable for implementing Siri. Ex.1024, [0075]. These options include “an end-user computer system” and a “mobile

computing device (e.g., personal digital assistant, mobile phone, smartphone, laptop, tablet computer, or the like).” *Id.*; *see also id.*, [0074], [0091], [1024].

Thus, claim 11 is obvious over Thiel and Gruber. Ex.1003, ¶¶111-114.

I. Claim 12

1. Preamble

The preamble recites “[e]yewear.” Thiel discloses this preamble for the reasons discussed for the preamble of claim 1. *Supra* §VII.A.1; Ex.1003, ¶115.

2. Limitations 12[a]-12[b]

These limitations recite “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.”

The combination of Thiel and Gruber discloses these limitations for the reasons discussed for limitations 1[a] and 1[c]. *Supra* §§VII.A.2, VII.A.4; Ex.1003, ¶116.

3. Limitation 12[c]

This limitation recites that the application module comprises “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.”

The combination of Thiel and Gruber discloses this limitation in part for the reasons discussed for limitation 1[d]. *Supra* §VII.A.5; Ex.1003, ¶117. Moreover, Thiel discloses that its application module includes a Bluetooth type chip or chipset type receiver (Ex.1028, [0049]; *see also id.*, [0027]), which is or includes a processor for receiving and providing signals. Ex.1003, ¶117; Ex.1025, 3 (definition of processor being “[a] computer or part of a computer capable of receiving data, manipulating it, and supplying results”). Specifically, this processor is operably coupled to Thiel’s microphone and speaker for receiving signals from the microphone, providing signals to the speaker, and wirelessly communicating with external devices. Ex.1003, ¶117; *see also* Ex.1028, Claims 12-13, 4, [0026]-[0027], [0049], [0055].

4. Limitation 12[d]

This limitation recites “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.”

The combination of Thiel and Gruber discloses this limitation for the reasons discussed for limitation 1[e]. *Supra* §VII.A.5; Ex.1003, ¶118.

A POSITA would be motivated to combine Thiel and Gruber and have a reasonable expectation of success in arriving at claim 12 for the same reasons as

claim 1. *Supra* §VII.A; Ex.1003, ¶119. Thus, claim 12 is obvious over Thiel and Gruber. Ex.1003, ¶¶118-120.

J. Claim 13

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

Thiel and Gruber disclose this dependent claim limitation for the reasons discussed for claim 11. *Supra* §VII.H; Ex.1003, ¶122.

Thus, claim 13 is obvious over Thiel and Gruber. Ex.1003, ¶¶121-123.

K. Claim 14

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.”

As discussed for limitation 1[d], Thiel discloses a Bluetooth chip, which is a wireless chip. *Supra* §VII.A.5; Ex.1003, ¶125. Additionally, as discussed for limitation 12[c], Thiel’s Bluetooth type chip or chipset type receiver is or includes a processor. *Supra* §VII.I.3; Ex.1003, ¶125. Therefore, the Bluetooth type chip or chipset type receiver is operably coupled to a processor to facilitate the wireless transmission of the verbal query. Ex.1003, ¶125.

Alternatively, under a different mapping where the processor is an additional processor, it would have been obvious to a POSITA that Thiel’s application module

with the Bluetooth type chip or chipset type receiver either included an additional processor or would have been modified to include an additional processor. *Id.*, ¶126.

A POSITA would have been motivated to configure the application module with a wireless chip dedicated to handling wireless communication and an additional processor dedicated to handling overall processing and control tasks. *Id.*

This configuration adheres to established engineering practices for optimizing system performance by assigning specialized roles to components, thereby improving efficiency, reliability, and scalability—particularly in resource-intensive or multitasking scenarios. *Id.* It also represents the use of a known technique (using additional processor for control and processing) to improve a known device and method (Thiel’s Bluetooth type chip or chipset type receiver for wireless communication) that is ready for improvement and yields predictable results (constructing Thiel’s wireless chip to work with additional processor for transmitting verbal query, receiving response to verbal query, and providing response via speaker). *Id.*; *KSR*, 550 U.S. at 416-17. Moreover, using an additional processor for control functionality would have been a straightforward, off-the-shelf, and cost-effective solution for implementing that functionality in Thiel’s audio device. Ex.1003, ¶126.

Thus, claim 14 is obvious over Thiel and Gruber. Ex.1003, ¶¶124-127.

L. Claim 15

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

Thiel discloses this dependent claim limitation for the reasons discussed for claim 14. *Supra* §VII.K; Ex.1003, ¶129.

Thus, claim 15 is obvious over Thiel and Gruber. Ex.1003, ¶¶128-130.

M. Claim 16

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

Thiel and Gruber disclose this dependent claim limitation for the reasons discussed for claim 11. *Supra* §VII.H; Ex.1003, ¶132.

Thus, claim 16 is obvious over Thiel and Gruber. Ex.1003, ¶¶131-133.

N. Claims 17-18

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

Gruber discloses these dependent claim limitations for the reasons discussed for claim 7. *Supra* §VII.E; Ex.1003, ¶135.

Thus, claims 17-18 are obvious over Thiel and Gruber. Ex.1003, ¶¶134-136.

O. Claims 19-20

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

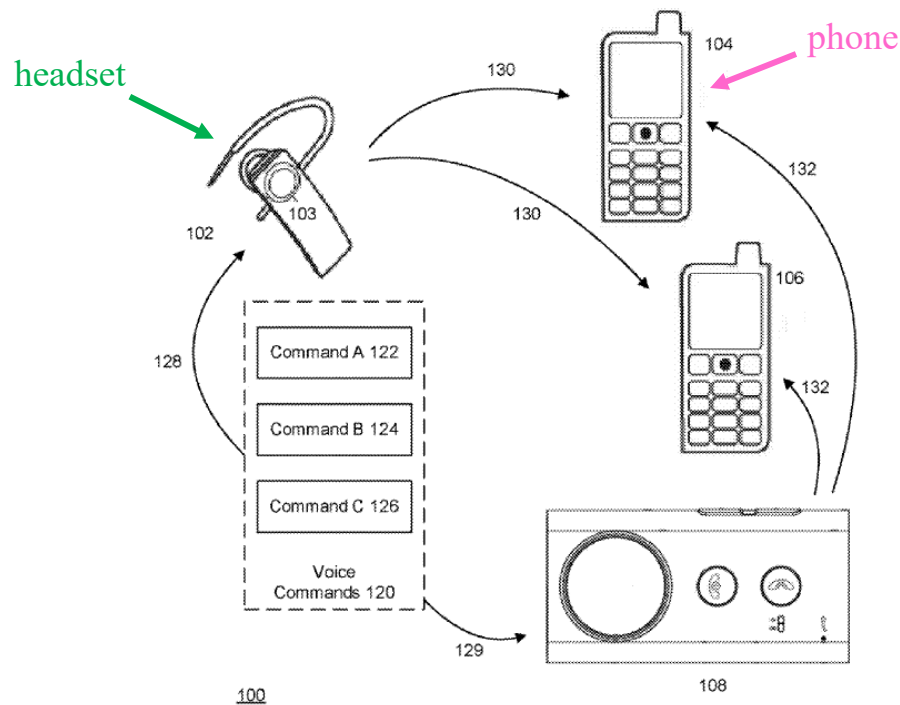
Gruber discloses these dependent claim limitations for the reasons discussed for claims 2-3. *Supra* §VII.B; Ex.1003, ¶138.

Thus, claims 19-20 are obvious over Thiel and Gruber. Ex.1003, ¶¶137-139.

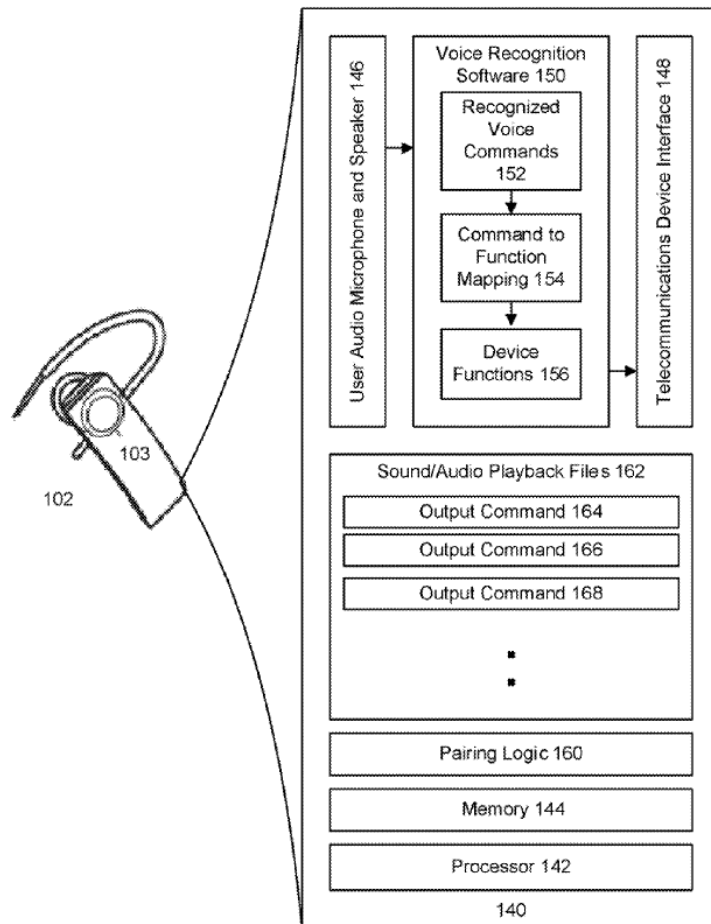
VIII. GROUND 2: CLAIM 5 IS OBVIOUS OVER THIEL, GRUBER, AND MADDERN

To the extent PO argues Thiel and Gruber do not disclose or suggest that the application module comprises a voice recognition chip, Maddern does. Ex.1003, ¶141.

Maddern discloses a headset (green) that communicates via Bluetooth with another device, such as a phone (pink), as shown in Figure 1. Ex.1029, Abstract, [0004], [0013].

*Id.*, Fig.1.

A user can control the headset with voice commands. As illustrated in Figure 2 below, the 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." *Id.*, [0037].



Id., Fig.2. 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.” *Id.*, [0037].

In view of Maddern, it would have been obvious to incorporate a voice recognition chip in the application module of Thiel, where the voice recognition chip is operably coupled to the application module’s microphone and Bluetooth chip, to enable the voice functions disclosed in Thiel and/or Gruber. Ex.1003, ¶143. A POSITA would have been motivated to incorporate such a chip in the application module with a reasonable expectation of success because Maddern discloses such a

chip is useful for implementing voice recognition functionality “in a small form factor for fitting within a headset.” *Id.*; Ex.1029, [0037]. Furthermore, the combination represents 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). Ex.1003, ¶143; *KSR*, 550 U.S. at 416-17.

Thus, claim 5 is obvious over Thiel, Gruber, and Maddern. *Id.*, ¶¶140-144.

IX. GROUND 3: CLAIM 8 IS OBVIOUS OVER THIEL, GRUBER, AND LU

To the extent PO argues Thiel and Gruber do not disclose or suggest pairing the Bluetooth wireless chip as recited in claim 8, Lu does. Ex.1003, ¶146.

Lu discloses:

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, [0004]. This disclosure confirms, consistent with the discussion in Ground 1, that pairing is an important part of the Bluetooth standard for identifying trusted devices and associating keys with them. *Supra* §VII.F. A POSITA would have

known further in view of Lu that, e.g., for security reasons, the Bluetooth devices in Thiel and Gruber should pair before transmitting data such as a verbal query for searching. Ex.1003, ¶147. Lu would have motivated a POSITA to pair Thiel's Bluetooth wireless chip with Gruber's external device before transmitting the verbal query and provided a reasonable expectation of success in doing so. *Id.* This is at least because such a pairing would enable Thiel's Bluetooth wireless chip and Gruber's external device to establish a secure channel for communication before the Bluetooth wireless chip transmits the verbal query via the secure channel. *Id.*

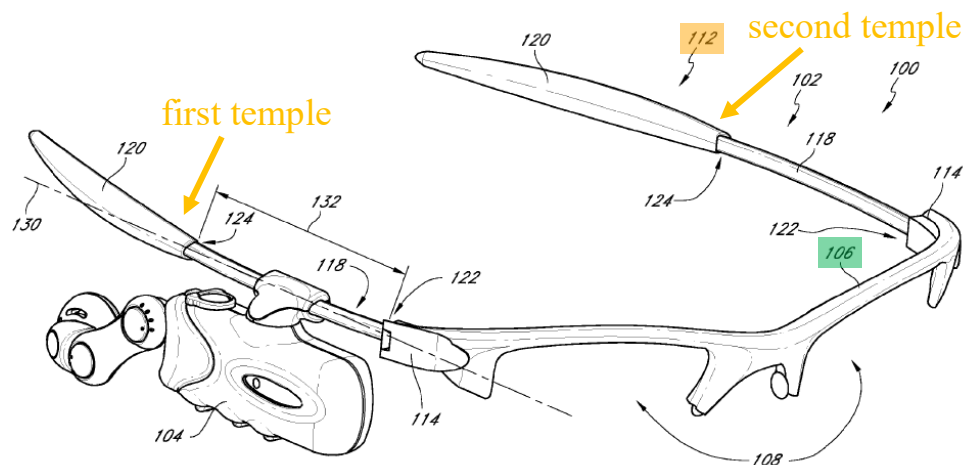
The combination represents the use of a known technique (pairing Bluetooth devices to create secure channel for communication) to improve a known device and method (Thiel's application module for eyewear that transmits verbal query to external device and receives response via Bluetooth communication) that is ready for improvement and yields predictable results (pairing eyewear application module and external device prior to communicating to secure channel for communication). *Id.*, ¶148; *KSR*, 550 U.S. at 416-17.

Thus, claim 8 is obvious over Thiel, Gruber, and Lu. Ex.1003, ¶¶145-149.

A. Claim 1

Jannard-740 discloses “eyewear with [a] detachable adjustable electronics module.” Ex.1005, Title, Abstract, [0080], [0154], [0167], [0215], [0237]; Ex.1003, ¶150.

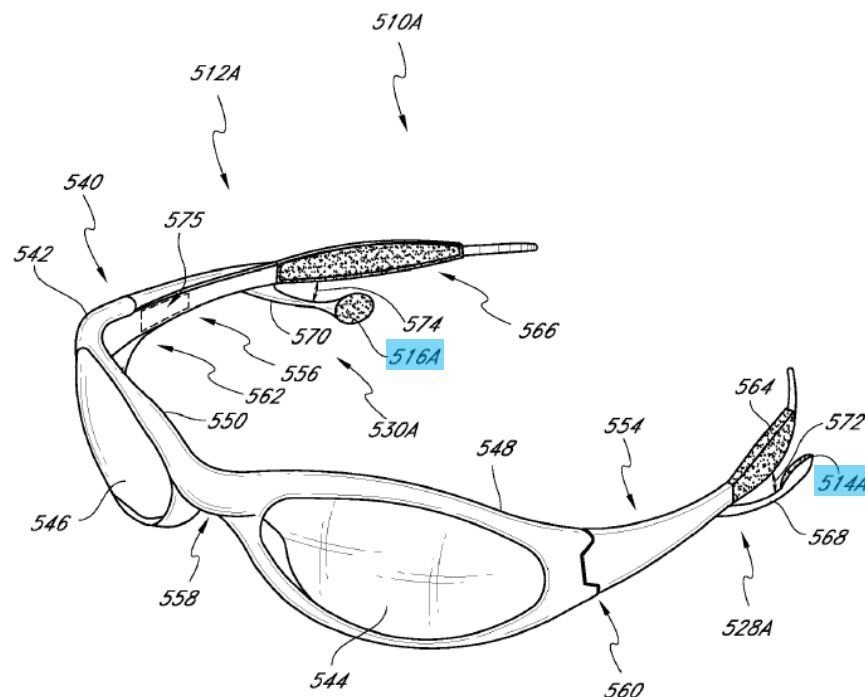
Jannard-740 discloses this limitation. Ex.1003, ¶151. As shown in Figure 3, Jannard-740's eyewear includes a frame 106 (green) having first and second temples 112 (orange). Ex.1005, [0082]-[0083]; *see also id.*, [0010], [0160], [0189]-[0191].



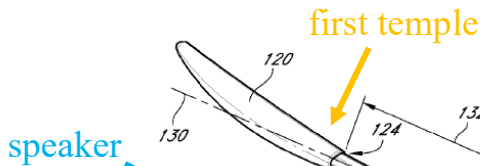
61

3. Limitation 1[b]

Jannard-740 discloses this limitation. Ex.1003, ¶152. For example, Jannard-740 discloses: “A first speaker is supported by the right earstem, and a second speaker is supported by the left earstem.” Ex.1005, [0010]; *see also id.*, Claim 1. Figure 49 shows an embodiment in which dual speakers (blue) are coupled to the eyewear frame. *Id.*, [0191]; *see also id.*, Fig.43, [0160]; Ex.1001, 7:47-65.



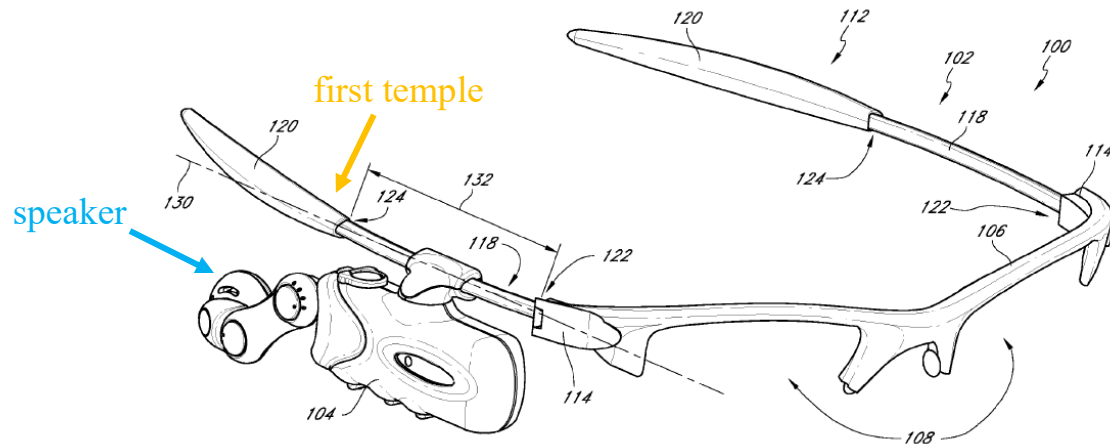
Ex.1005, Fig.49. Jannard-740 also discloses embodiments with a single speaker, including in Figure 3 where one speaker (blue) is shown coupled to the eyewear frame (specifically, the first temple (orange)). Ex.1005, [0093]-[0094]; *see also* Ex.1001, 7:47-65.



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

4. Limitation 1[c]

In Figure 3, Jannard-740's detachable module 104 is shown mechanically coupled to the first temple and operably coupled to a speaker. Ex.1005, [0084].

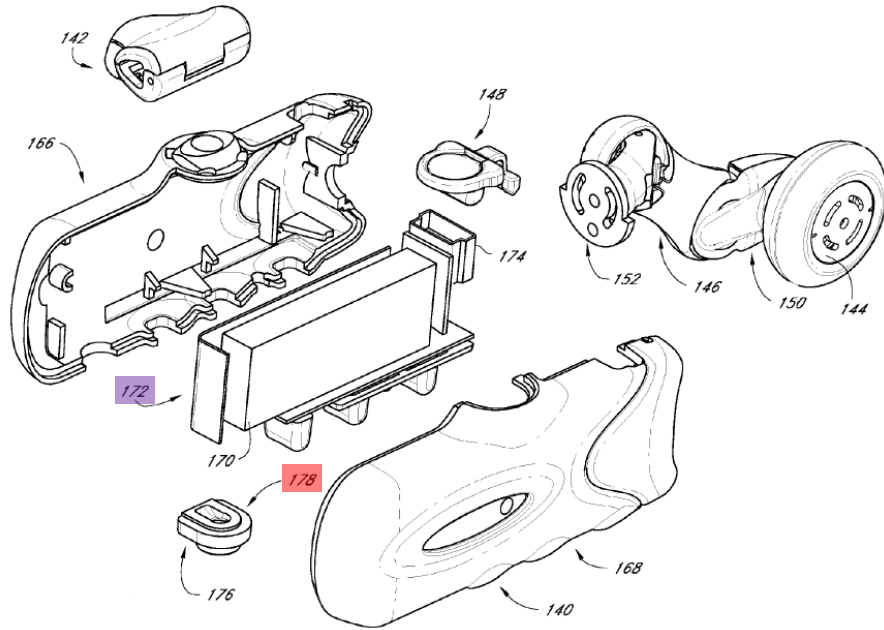


Id., Fig.3, [0089], [0091]. Jannard-740’s eyewear has “coupled” components according to the broad usage of the term in the ’138 patent. Ex.1003, ¶155; Ex.1001, 7:47-65.

Thus, Jannard-740 discloses an application module that is mechanically coupled to the eyewear frame and operably coupled to the speaker. Ex.1003, ¶¶154-156.

5. Limitations 1[d]-1[e]

Jannard-740 renders obvious these limitations. For example, Jannard-740’s module 104 includes a housing that at least partly contains a microphone 178 (red) and electronics module 172 (purple), as shown in Figure 12. Ex.1005, [0102]; *see also id.*, [0194]-[0196], [0204]-[0207].



Id., Fig.12. The electronics module 172 can include a Bluetooth transceiver that facilitates wirelessly communicating with an external device like a cellular telephone. *Id.*, [0104], [0086]; *see also id.*, [0158], [0160], [0163]. Jannard-740 provides that such a transceiver may be implemented as a RF transceiver chip (*id.*, [0235]), which is a wireless chip and, specifically, a Bluetooth chip when configured to communicate using a Bluetooth protocol with a Bluetooth-enabled external device. Ex.1003, ¶157; *see also* Ex.1005, [0158], [0204], [0207], [0218], [0227]. Thus, Jannard-740 discloses its application module comprises a microphone and a Bluetooth chip. Ex.1003, ¶¶157-158.

Jannard-740’s microphone receives a verbal query from an eyewear’s wearer. Jannard-740 discloses that its application module may support a “multitude of commands” and provide voice control functionality so that a user need not

manipulate mechanical controls to select different communication, audio, or video functions. Ex.1005, [0161]. Such voice control, for instance, enables the wearer to “control[] selection between primary and secondary sources 602, 604 based upon verbal commands provided by the wearer.” *Id.*, [0220]; *see also id.*, [0185], [0202], [0208]. These sources include a computer, communications-enabled device (e.g., smart phone), Internet, or the like and provide content including “audio files, entertainment, news, media, music, photos, videos, advertising, etc.” Ex.1005, [0236]; Ex.1003, ¶159; *see also* Ex.1005, [0193]-[0194], [0196], [0211]. Jannard-740 also discloses that a microphone is usable to send voice signals or commands to an external device like a cellular phone by speaking into the microphone. Ex.1005, [0195]; *see also id.*, [0104], [0193]-[0194], [0198], Fig.51. Thus, Jannard-740 discloses a microphone to receive a verbal query. Ex.1003, ¶159.

Jannard-740 discloses that its Bluetooth chip is operably coupled to both the microphone and speaker, enabling the chip to connect to an external device to transmit the verbal query and receive and provide a response. *Id.*, ¶¶160-161. Jannard-740’s electronics module 172 (with its Bluetooth chip) receives signals from the microphone and transmits these to the external device. Ex.1005, [0104]. Additionally, the electronics module 172 (with its Bluetooth chip) receives signals from the external device and outputs audio signals to the speaker. *Id.* Jannard-740 describes an example where a module communicates with an external device, which

in turn communicates with a remote network, such as an internet service provider. *Id.*, [0193]-[0195], Fig.51; Ex.1003, ¶160. The external device can relay communications from the module with or without modification. Ex.1005, [0198]. This configuration allows the module to “off load[]” its driver electronics, reducing the module’s bulk, weight, and power characteristics. *Id.* Thus, Jannard-740 discloses that the 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. Ex.1003, ¶¶159-161.

It would have been obvious, in view of Jannard-740, for the application module—comprising a microphone and a Bluetooth chip—to receive and transmit a verbal query (e.g., request for specific email, audio file, or news) to a Bluetooth-enabled source device and, in turn, for the verbal query to cause the Bluetooth-enabled source device to obtain a response (e.g., specific email, audio file, or news) to the verbal query via the Internet by searching the Internet for the response. *Id.*, ¶¶162-171. Jannard-740 broadly discloses head-worn devices with such functionalities.

Jannard-740 describes, with reference to Figure 51, a user wearing an audio device 510C. Ex.1005, [0194] (referring more generally to “audio device” 510C); *cf. id.*, [0188]-[0189], Fig.49 (“audio device 510A” shown as “eyeglass 540”).

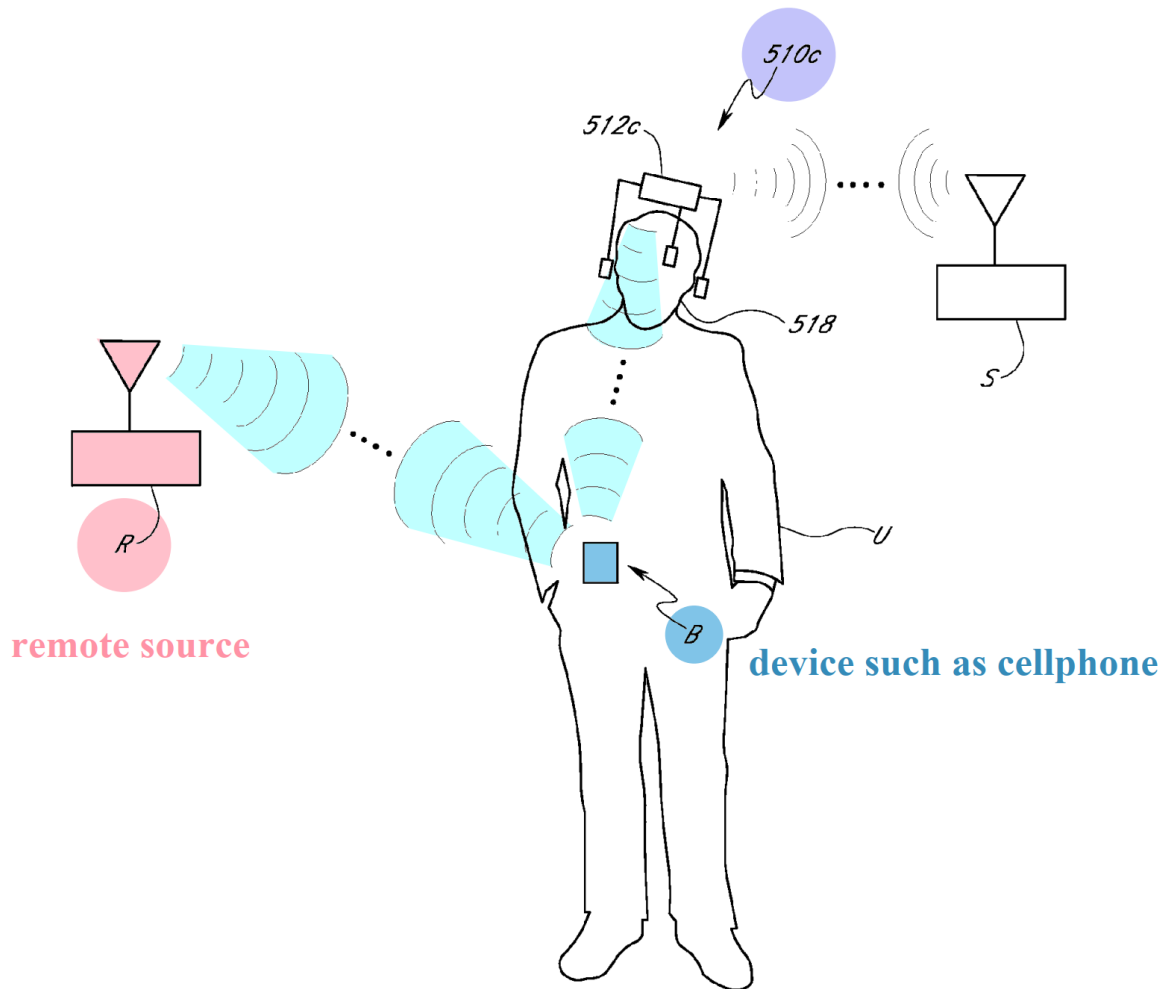


FIG. 51

Id., Fig.51. As illustrated, the audio device communicates with other devices, such as a device B (e.g., a “cellular phone” or “palmtop computer”) carried by the user.

Id., [0194]. The phone or computer, in turn, communicates with a “remote source R” over a “wireless data network.” *Id.*, [0195].

Jannard-740 further discloses that the user may speak voice commands to offboard electronics, such as a cellular phone, which can communicate with a remote source, e.g., the Internet. *Id.*, [0161], [0220], [0236]. For instance, the user can request and listen to content, such as an email, from another device without manually operating that device. *Id.*, [0188] and [0192] and [0237] (incorporating by reference Ex.1017); Ex.1017, [0295]-[0299].

Jannard-740 specifies its eyewear systems include “interface electronics for interacting with a wireless network and/or providing content to a user.” Ex.1005, [0003]; *see also id.*, [0240]; Ex.1017, [0187], [0290], [0296]. This configuration would allow a wearer to verbally request a source of content, as disclosed in Jannard-740 (*id.*, [0236]), and also specific Internet-accessible content (e.g., specific email, audio file, or news), consistent with Jannard-740’s recommendation to include voice control functionality and communicate through intermediate devices to offload electronics (*id.*, [0161], [0198]). Ex.1003, ¶165. Such an implementation of Jannard-740’s system would have been obvious for multiple reasons.

First, such an implementation represents nothing more than the simple addition of one known element (using external source device to search Internet for particular content) to another known element (Jannard-740’s application module

which transmits voice commands to and receives particular content from Bluetooth-enabled external source device) to obtain predictable results (eyewear application module that transmits verbal query for particular content from Bluetooth-enabled external source device, causing source device to search Internet for and transmit particular content). *Id.*, ¶166; *KSR*, 550 U.S. at 416-17.

Second, the implementation represents the use of a known technique (searching Internet for particular content with external source device) to improve a similar device and method (Jannard-740's application module with wireless communications for diverse functions including requesting content from Bluetooth-enabled external source device and receiving content) in the same way. Ex.1003, ¶167; *KSR*, 550 U.S. at 417.

Third, the implementation represents the use of a known technique (searching Internet for content and transmitting content to eyewear application module) to improve a known device and method (Jannard-740's application module for processing voice commands and requesting content from Bluetooth-enabled external source device) that is ready for improvement and yields predictable results (constructing eyewear application module to incorporate verbal content search functionality that causes Bluetooth-enabled external source device to search Internet for and provide particular content). Ex.1003, ¶168; *KSR*, 550 U.S. at 416-17.

A POSITA would have reasonably expected success in incorporating such functionality in Jannard-740's system because the incorporation would have been trivial for a POSITA. Ex.1003, ¶169. At most this would have involved limited software and/or hardware updates that were well within a POSITA's abilities. *Id.*

Accordingly, Jannard-740 suggests the verbal query (e.g., request for specific email, audio file, or news) causes the Bluetooth-enabled external device to obtain the response (e.g., specific email, audio file, or news) to the verbal query via the Internet by searching the Internet for the response to the verbal query. *Id.*, ¶171.

Thus, claim 1 is obvious over Jannard-740. *Id.*, ¶¶150-172.

B. Claim 5

Jannard-740 incorporates by reference Jannard-382 (Ex.1005, [0188], [0192], [0237]), which discloses this dependent claim limitation. Ex.1003, ¶174. Through that incorporation by reference, Jannard-740 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, [0265]. In view of this disclosure, it would have been obvious to incorporate a voice recognition chip in Jannard-740's application module, where the voice recognition chip is operably coupled to Jannard-740's microphone and Bluetooth chip, to enable the voice functions disclosed in Jannard-740. Ex.1003, ¶174; *see also* Ex.1019, 1:9-13. A POSITA would have

been motivated to incorporate such a chip in Jannard-740’s application module with a reasonable expectation of success because the voice recognition chip is an off-the-shelf solution for providing voice recognition. Ex.1003, ¶174; *see also* Ex.1019, 1:9-13; Ex.1020, 19:28-20:1; Ex.1012, 3:52-64.

Thus, claim 5 is obvious over Jannard-740. Ex.1003, ¶¶173-175.

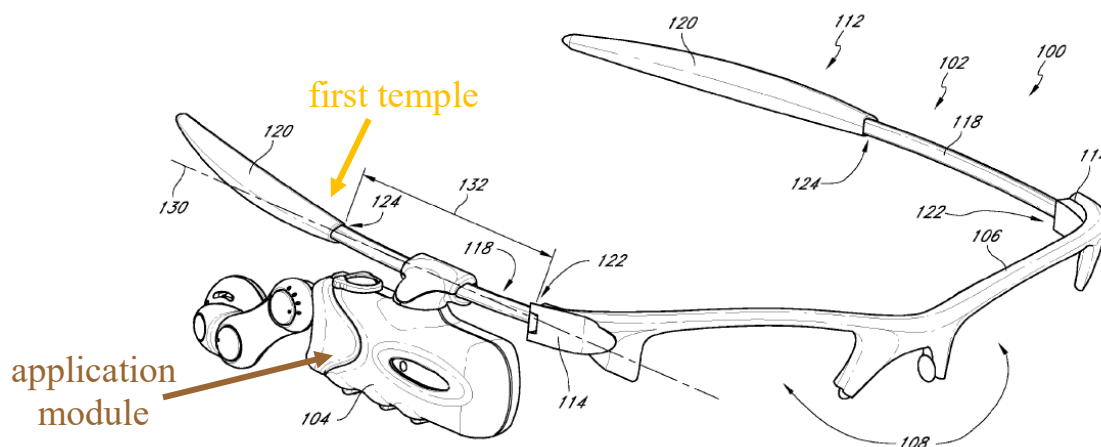
C. Claim 6

1. Preamble

Jannard-740 discloses “methods.” Ex.1005, [0189], [0241]; Ex.1003, ¶176.

2. Limitations 6[a]-6[b]

Jannard-740 discloses these limitations for the reasons discussed for limitations 1[c]-1[e] and because Jannard-740 illustrates its application module with the microphone and wireless chip (e.g., Bluetooth chip) is mechanically coupled to an eyewear frame in Figure 3. *Supra* §§X.A.4-5; Ex.1003, ¶177.



Ex.1005, Fig.3; *see also id.*, Figs.43, 49.

3. Limitations 6[c]-6[d]

Jannard-740 renders obvious these limitations for the reasons discussed for limitations 1[d]-1[e]. *Supra* §X.A.5; Ex.1003, ¶178.

Thus, claim 6 is obvious over Jannard-740. *Id.*, ¶¶176-179.

D. Claim 8

As discussed in Ground 1, “pairing” appears only in claim 8, and the ’138 patent fails to expressly explain how to achieve “pairing,” demonstrating a POSITA would have been readily familiar with Bluetooth pairing and when Bluetooth pairing would occur. *Supra* §VII.F.

The limitation claim 8 adds would have been obvious in view of Jannard-740. Ex.1003, ¶181. For example, as discussed for limitations 1[d]-1[e], Jannard-740 discloses that the wireless chip is a Bluetooth chip and that the Bluetooth chip communicates with and transmits the verbal query to a Bluetooth-enabled external device. *Supra* §X.A.5. A POSITA would have known that, e.g., in compliance with the Bluetooth standard or for security reasons, the Bluetooth devices in Jannard-740 would pair before transmitting data such as a verbal query for searching. Ex.1003, ¶181; *see also* Ex.1029, [0040]; Ex.1007, [0031].

Thus, claim 8 is obvious over Jannard-740. Ex.1003, ¶¶180-182.

E. Claim 11

As discussed in Ground 1, Petitioner analyzes claim 11 both as drafted and also as if it depended from claim 6 rather than claim 5. *Supra* §VII.H.

Jannard-740 discloses the external device is a smart phone or computer as discussed for limitations 1[d]-1[e]. *Supra* §X.A.5; Ex.1003, ¶184.

Thus, claim 11 is obvious over Jannard-740. Ex.1003, ¶¶183-185.

F. Claim 12

1. Preamble

Jannard-740 discloses this preamble for the reasons discussed for the preamble of claim 1. *Supra* §X.A.1; Ex.1003, ¶186.

2. Limitations 12[a]-12[b]

Jannard-740 discloses these limitations for the reasons discussed for limitations 1[a] and 1[c]. *Supra* §§X.A.2, X.A.4; Ex.1003, ¶187.

3. Limitations 12[c]-12[d]

Jannard-740 renders obvious these limitations in part for the reasons discussed for limitations 1[d]-1[e]. *Supra* §X.A.5; Ex.1003, ¶188. Moreover, Jannard-740 discloses its electronics module 172 includes a processor for receiving and providing signals, including those processed by the wireless chip (e.g., Bluetooth transceiver), received via the microphone, and output via the speaker. Ex.1005, [0104]; Ex.1003, ¶188; Ex.1025, 3 (definition of processor being “[a] computer or part of a computer

capable of receiving data, manipulating it, and supplying results”); *see also* Ex.1005, [0003] (devices include “processors”).

Thus, limitations 12[c]-12[d] are obvious. Ex.1003, ¶188.

Accordingly, claim 12 is obvious over Jannard-740. Ex.1003, ¶¶186-189.

G. Claim 13

Jannard-740 discloses the external device is a smart phone as discussed for limitations 1[d]-1[e]. *Supra* §X.A.5; Ex.1003, ¶191.

Thus, claim 13 is obvious over Jannard-740. Ex.1003, ¶¶190-192.

H. Claim 14

As discussed for limitations 1[d]-1[e], Jannard-740 discloses its electronics module 172 includes a wireless chip for wirelessly transmitting the verbal query to the external device. *Supra* §X.A.5; Ex.1003, ¶194. Because the wireless chip is part of the electronics module 172 together with the processor, the wireless chip is operably coupled to the processor. Ex.1003, ¶194; *see also* Ex.1005, [0104], [0003].

Thus, claim 14 is obvious over Jannard-740. Ex.1003, ¶¶193-195.

I. Claim 15

Jannard-740 discloses the wireless chip is a Bluetooth chip as discussed for limitations 1[d]-1[e]. *Supra* §X.A.5; Ex.1003, ¶197.

Thus, claim 15 is obvious over Jannard-740. Ex.1003, ¶¶196-198.

J. Claim 16

Jannard-740 discloses the external device is a computer as discussed for limitations 1[d]-1[e]. *Supra* §X.A.5; Ex.1003, ¶200.

Thus, claim 16 is obvious over Jannard-740. Ex.1003, ¶¶199-201.

XI. GROUND 5: CLAIM 5 IS OBVIOUS OVER JANNARD-740 AND MADDERN

This ground addresses claim 5, which requires that the application module comprises a voice recognition chip. To the extent PO argues that Jannard-740 does not disclose or suggest this, Maddern does for the reasons discussed for Ground 2. *Supra* §VIII; Ex.1003, ¶203.

In view of Maddern, it would have been obvious to incorporate a voice recognition chip in Jannard-740's application module, where the voice recognition chip is operably coupled to Jannard-740's microphone and Bluetooth chip, to enable the voice functions disclosed in Jannard-740. Ex.1003, ¶205. A POSITA would have been motivated to incorporate such a chip in Jannard-740's application module with a reasonable expectation of success because Maddern discloses such a chip is useful for implementing voice recognition functionality "in a small form factor for fitting within a headset." *Id.*; Ex.1029, [0037]; *see also supra* §VIII. Furthermore, the combination represents 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

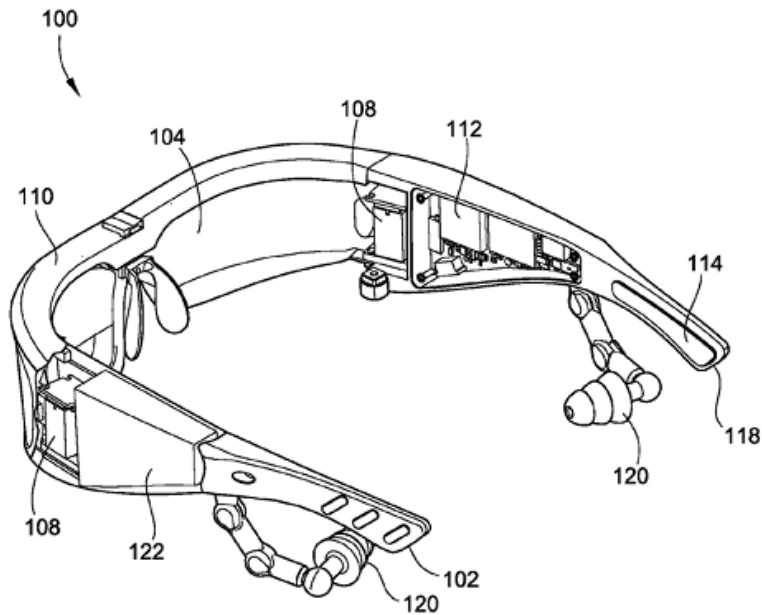
a headset) that is ready for improvement and yields predictable results (implementing voice recognition functionality in eyewear application module with voice recognition chip to achieve small form factor). Ex.1003, ¶205; *KSR*, 550 U.S. at 416-17.

Thus, claim 5 is obvious over Jannard-740 and Maddern. Ex.1003, ¶¶202-206.

XII. GROUND 6: CLAIMS 7 AND 17-18 ARE OBVIOUS OVER JANNARD-740 AND OSTERHOUT

Claims 7 and 17-18 specify that the verbal query is about the weather and/or that the response includes information about the weather. Jannard-740 discloses that the verbal query is a request for news and the response is the news, as discussed for claim 1. *Supra* §§X.A.5; Ex.1003, ¶208. While Jannard-740 does not specify the type of news requested, Osterhout discloses weather is a type of news requested by eyewear. Ex.1003, ¶208.

Osterhout discloses eyewear with electronic components, as shown in Figure 1. Ex.1006, [0125]-[0126], [0135]-[0136].



Id., Fig.1. These electronic components enable the eyewear to perform functions including processing voice commands, communicating wirelessly with remote devices, and retrieving information. *Id.*, [0267], [0299], [0309]-[0311]. Osterhout provides that “[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.” *Id.*, [0302]; *see also id.* (“[C]ontent may then be searched relating to the ... local weather.”).

A POSITA would have been motivated, in view of Osterhout, to configure Jannard-740’s verbal query as a weather-related query, with the response providing weather information. Ex.1003, ¶210. A POSITA would have understood from Osterhout that a weather-related query is relevant and of interest to a wearer of eyewear and that Jannard-740’s application module could be used to receive and

transmit to such a weather-related query. *Id.* The combination represents the use of a known technique (requesting weather information with eyewear) to improve a known device and method (Jannard-740’s application module that receives verbal queries and transmits them to external source device and receives and provides responses to verbal queries) that is ready for improvement and yields predictable results (eyewear application module that receives weather-related verbal query and transmits it to external device and then receives and provides weather information from external device). *Id.*; *KSR*, 550 U.S. at 416-17. Implementing the functionality in Jannard-740’s application module and external source device would have been trivial in view of Osterhout’s disclosure. Ex.1003, ¶210.

Thus, claims 7 and 17-18 are obvious over Jannard-740 and Osterhout. *Id.*, ¶¶207-211.

XIII. GROUND 7: CLAIMS 1-20 ARE OBVIOUS OVER JANNARD-740 AND GRUBER

A. Claim 1

Jannard-740 discloses and suggests each limitation of claim 1 as discussed for claim 1 in Ground 4. *Supra* §X.A. To the extent PO argues Jannard-740 does not disclose or 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, Gruber discloses this for the reasons discussed for limitations 1[d]-1[e] in Ground 1. *Supra* §VII.A.5; Ex.1003, ¶212.

The use of Gruber's device or its features in Jannard-740's system would have been obvious. Ex.1003, ¶213. Jannard-740 describes its Bluetooth-enabled module as a headset (Ex.1005, [0196], [0198], [0233]), and Gruber specifically mentions using its device with headsets, including Bluetooth headsets (Ex.1024, [0658], [0140]). A POSITA would have been motivated to use Gruber's device or its features with Jannard-740's application module to achieve the benefits disclosed in Gruber, such as using an external source device like Gruber's as an intelligent automated assistant for Jannard-740's application module. Ex.1003, ¶213; Ex.1024, [0120]. Such an external source 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," including "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, [0119]-[0124]), as Gruber describes. Ex.1003, ¶213. This would construct a system in which (i) Jannard-740's application module receives a verbal query with its microphone and transmits the verbal query with its electronics module (including with the Bluetooth chip), (ii) the verbal query causes Jannard-740's external source device functioning as an intelligent automated assistant (as in Gruber, e.g., Siri) to obtain a response to the verbal query by searching the Internet

for the response and next to transmit the response to the Jannard-740's application module, and (iii) Jannard-740's application module with its electronics module (including with the Bluetooth chip) receives the response from Jannard-740's external source device and provides the response to the wearer via the speaker. Ex.1003, ¶214.

Such an implementation of Jannard-740's application module and/or its external source device represents nothing more than the simple addition of one known element (external device that performs intelligent automated assistant functionality including searching Internet) to another known element (Jannard-740's application module that processes and transmits voice input to external source device and then receives and audibly presents responses) to obtain predictable results (eyewear application module communicating verbal query to external device and providing response via speaker where external device searches Internet for response). Ex.1003, ¶215; *KSR*, 550 U.S. at 416-17. In addition, the combination of Jannard-740 and Gruber represents the use of a known technique (external device searching Internet for response to verbal query received from another apparatus) to improve a similar device and method (Jannard-740's application module that communicates voice command to external source device and provides response with speaker) in the same way. Ex.1003, ¶215; *KSR*, 550 U.S. at 417. The combination also represents the use of a known technique (external device searching Internet for

response to verbal query received from another apparatus) to improve a known device and method (Jannard-740's application module that communicates 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 that transmits verbal query to external device and provides response from external device via speaker based on external device searching Internet for and transmitting response). Ex.1003, ¶215; *KSR*, 550 U.S. at 416-17.

A POSITA would have reasonably expected success in using Gruber's device or a similar device 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 that were well within the abilities of a POSITA in view of Gruber. Ex.1003, ¶216.

Thus, claim 1 is obvious over Jannard-740 and Gruber. Ex.1003, ¶¶212-217.

B. Claims 2-4

Gruber discloses these dependent claim limitations for the reasons discussed for claims 2-4 in Ground 1. *Supra* §VII.B. In each case, Gruber's disclosure applies to any user, including a user wearing Jannard-740's eyewear. Ex.1003, ¶219. And although claims 2-4 do not require it, a wearer of Jannard-740's eyewear module could communicate their instructions for controlling music, video, light, and

temperature via the Bluetooth connection between the eyewear and Gruber's smartphone running Siri. *Id.*

Thus, claims 2-4 are obvious over Jannard-740 and Gruber. Ex.1003, ¶¶218-220.

C. Claim 5

Jannard-740 discloses this dependent claim limitation for the reasons discussed for claim 5 in Ground 4. *Supra* §X.B.

Thus, claim 5 is obvious over Jannard-740 and Gruber. Ex.1003, ¶¶221-223.

D. Claim 6

Jannard-740 discloses and renders obvious the limitations of claim 6 as discussed for claim 6 in Ground 4. *Supra* §X.C. To the extent PO argues Jannard-740 does not disclose or suggest that its wireless chip receives and transmits a verbal query and that the verbal query causes the external device to search the Internet for the response, Gruber discloses this for the reasons discussed for limitations 1[d]-1[e] in Ground 1. *Supra* §VII.A.5; Ex.1003, ¶224. A POSITA would have been motivated to and reasonably expected success in using Gruber's device or a similar device functioning as an intelligent automated assistant together with Jannard-740's wireless chip for the reasons discussed for claim 1 in this ground. *Supra* §XIII.A.

Thus, claim 6 is obvious over Jannard-740 and Gruber. Ex.1003, ¶¶224-225.

E. Claim 7

Gruber discloses this dependent claim limitation for the reasons discussed for claim 7 in Ground 1. *Supra* §VII.E.

Thus, claim 7 is obvious over Jannard-740 and Gruber. Ex.1003, ¶¶226-228.

F. Claim 8

Jannard-740 discloses this dependent claim limitation as discussed for claim 8 in Ground 4. *Supra* §X.D.

Gruber also discloses this dependent claim limitation as discussed for claim 8 in Ground 1. *Supra* §VII.F.

Thus, claim 8 is obvious over Jannard-740 and Gruber. Ex.1003, ¶¶229-232.

G. Claims 9-10

Gruber discloses these dependent claim limitations for the reasons discussed for claim 4 in this ground. *Supra* §XIII.B.

Thus, claims 9-10 are obvious over Jannard-740 and Gruber. Ex.1003, ¶¶233-235.

H. Claim 11

Jannard-740 discloses this dependent claim limitation for the reasons discussed for claim 11 in Ground 4. *Supra* §X.E.

To the extent PO argues Jannard-740 does not disclose or suggest this dependent claim limitation, Gruber discloses this dependent claim limitation for the reasons discussed for claim 11 in Ground 1. *Supra* §VII.H; Ex.1003, ¶238.

Thus, claim 11 is obvious over Jannard-740 and Gruber. Ex.1003, ¶¶236-239.

I. Claim 12

Jannard-740 discloses and renders obvious the limitations of claim 12 as discussed for claim 12 in Ground 4. *Supra* §X.F. To the extent PO argues Jannard-740 does not disclose or suggest that its 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, Gruber discloses this for the reasons discussed for limitations 1[d]-1[e] in Ground 1. *Supra* §VII.A.5; Ex.1003, ¶240. A POSITA would have been motivated to and reasonably expected success in using Gruber's device or a similar device functioning as an intelligent automated assistant together with Jannard-740's application module for the reasons for claim 1 in this ground. *Supra* §XIII.A.

Thus, claim 12 is obvious over Jannard-740 and Gruber. Ex.1003, ¶¶240-241.

J. Claim 13

Jannard-740 discloses this dependent claim limitation for the reasons discussed for claim 13 in Ground 4. *Supra* §X.G.

To the extent PO argues Jannard-740 does not disclose or suggest this dependent claim limitation, Gruber discloses this dependent claim limitation for the reasons discussed for claim 11 in Ground 1. *Supra* §VII.H; Ex.1003, ¶244.

Thus, claim 13 is obvious over Jannard-740 and Gruber. Ex.1003, ¶¶242-245.

K. Claims 14-15

Jannard-740 discloses these dependent claim limitations for the reasons discussed for claims 14-15 in Ground 4. *Supra* §X.H-I.

Thus, claims 14-15 are obvious over Jannard-740 and Gruber. Ex.1003, ¶¶246-248.

L. Claim 16

Jannard-740 discloses this dependent claim limitation for the reasons discussed for claim 16 in Ground 4. *Supra* §X.J.

To the extent PO argues Jannard-740 does not disclose or suggest this dependent claim limitation, Gruber discloses this dependent claim limitation for the reasons discussed for claim 11 in Ground 1. *Supra* §VII.H; Ex.1003, ¶251.

Thus, claim 16 is obvious over Jannard-740 and Gruber. Ex.1003, ¶¶249-252.

M. Claims 17-18

Gruber discloses these dependent claim limitations for the reasons discussed for claim 7 in Ground 1. *Supra* §VII.E.

Thus, claims 17-18 are obvious over Jannard-740 and Gruber. Ex.1003, ¶¶253-255.

N. Claims 19-20

Gruber discloses these dependent claim limitations for the reasons discussed for claims 2-3 in Ground 1. *Supra* §VII.B.

Thus, claims 19-20 are obvious over Jannard-740 and Gruber. Ex.1003, ¶¶256-258.

XIV. GROUND 8: CLAIM 5 IS OBVIOUS OVER JANNARD-740, GRUBER, AND MADDERN

To the extent PO argues Jannard-740 and Gruber do not disclose or suggest that the application module comprises a voice recognition chip, Maddern does for the reasons discussed in Ground 2. *Supra* §VIII; Ex.1003, ¶¶260-261. A POSITA would have been motivated and reasonably expected success in incorporating a voice recognition chip like Maddern's in the application module in the combination of Jannard-740 and Gruber for the reasons discussed in Ground 5. Ex.1003, ¶262; *Supra* §XI.

Thus, claim 5 is obvious over Jannard-740, Gruber, and Maddern. Ex.1003, ¶¶259-263.

XV. SECONDARY CONSIDERATIONS

Secondary considerations should be considered but do not control the obviousness conclusion. *Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed.

Cir. 1988). Where, as here, a strong *prima facie* obviousness showing exists, even relevant secondary considerations supported by substantial evidence may not dislodge the obviousness conclusion. *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007). Petitioner is aware of no evidence supporting a claim for secondary considerations. Ex.1003, ¶¶264-265.

XVI. DISCRETIONARY DENIAL UNDER §325(D) IS NOT APPROPRIATE

The Office has not previously substantively addressed “the same or substantially the same prior art or arguments.” 35 U.S.C. §325(d). Here, the PTO has never evaluated the ’138 patent against the prior art asserted.

Advanced Bionics Prong 1; Becton, Dickinson Factors (a), (b), and (d). No prior art presented in Grounds 1-3 were before the PTO Examiner. Although the Examiner rejected claims over Jannard-382, from which Jannard-740 is a continuation-in-part, the Examiner never considered Jannard-740, which includes additional disclosure relative to Jannard-382. The additional disclosure in Jannard-740 discloses and suggests the limitations of the independent claims that the Examiner found Jannard-382 failed to teach or suggest.

The first prong of *Advanced Bionics* is therefore unmet, and the Board “need not address the second part.” *JUUL*, Paper 10 at 13; *Quasar Sci. LLC v. Colt Int’l Clothing, Inc.*, IPR2023-00611, Paper 10 at 12 (PTAB Oct. 10, 2023).

Advanced Bionics Prong 2; Becton, Dickinson Factors (c), (e), and (f). The Examiner did not consider the prior art asserted. Nor did the Examiner have the benefit of this Petition mapping the prior art to PO's claims and Dr. Feland's accompanying expert declaration explaining the POSITA's understanding of the prior art. Where, as here, references were "not extensively evaluated during examination and [were] not the basis for a rejection," and Petitioner "present[s] a sufficient showing that the Examiner overlooked disclosures" that invalidate the claims, "the Office erred in a manner material" to patentability. *Apple Inc. v. Telefonaktiebolaget LM Ericsson*, IPR2022-00457, Paper 7 at 8 (PTAB Sept. 21, 2022). This Petition presents compelling challenges to patentability.

Thus, the Board should not deny institution under §325(d).

XVII. MANDATORY NOTICES, GROUNDS FOR STANDING, AND FEE PAYMENT

A. Real Parties-In-Interest (37 C.F.R. §42.8(b)(1))

Luxottica of America Inc. and Luxottica Group S.p.A. are the real parties in interest for Petitioner. The parent company of each party identified above is EssilorLuxottica S.A.

B. Related Matters (37 C.F.R. §42.8(b)(2))

The parties are currently engaged in district court litigation in *e-Vision Optics, LLC et al. v. Luxottica Group S.p.A. et al.*, No. 8:23-cv-02013 (C.D. Cal.). Patent Owner asserted in the Litigation U.S. Patent No. 10,598,960, from which the '138

patent is a continuation. Patent Owner also asserted U.S. Patent No. 10,598,960 in *e-Vision, LLC et al. v. Lenovo Group Ltd. et al.*, No. 8:23-cv-01860 (C.D. Cal.).

C. Lead and Backup Counsel (37 C.F.R. §42.8(b)(3))

Petitioner provides the following designation of counsel, all of whom are included in Customer No. 20,995 identified in Petitioner’s Power of Attorney.

Lead Counsel	Back-up Counsel
Ali S. Razai (Reg. No. 60,771) 2AZR@knobbe.com Knobbe, Martens, Olson, & Bear, LLP <u>Postal and Hand-Delivery Address:</u> 2040 Main St., 14th Floor Irvine, CA 92614 Telephone: 949-760-0404 Facsimile: 949-760-9502	Joseph F. Jennings (Reg. No. 40,664) 2JFJ@knobbe.com Vladislav Teplitskiy (Reg. No. 68,069) 2VXT@knobbe.com Jacob L. Peterson (Reg. No. 65,096) 2JUP@knobbe.com Knobbe, Martens, Olson, & Bear, LLP <u>Postal and Hand-Delivery Address:</u> 2040 Main St., 14th Floor Irvine, CA 92614 Telephone: 949-760-0404 Facsimile: 949-760-9502

D. Service Information (37 C.F.R. §42.8(b)(4))

Please direct all correspondence to lead counsel and back-up counsel at the addresses shown above. Petitioner also consents to electronic service by email to luxotticaIPR-138@knobbe.com.

E. Standing

The ’138 patent is available for IPR, and no bar or estoppel applies.

The Office may charge any fees due to Deposit Account 11-1410.

XVIII. CONCLUSION

Petitioner respectfully requests that the Board institute IPR and cancel all claims of the '138 patent.

Dated: November 20, 2024

By: /Ali S. Razai/

Ali S. Razai (Reg. No. 60,771)

KNOBBE, MARTENS, OLSON & BEAR, LLP

*Attorney for Petitioner,
Luxottica of America Inc.*

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. §42.24(d), the undersigned certifies that this PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 11,487,138 contains 13,800 words according to the word-processing program used to prepare this paper. The foregoing word count complies with the 14,000-word type-volume limit specified by 37 C.F.R. §42.24(a)(1).

Dated: November 20, 2024

By: /Ali S. Razai/

Ali S. Razai (Reg. No. 60,771)

KNOBBE, MARTENS, OLSON & BEAR, LLP

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the date below copies of this **PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 11,487,138, PETITIONER’S POWER OF ATTORNEY, and EXHIBITS 1001-1041** are being served by FedEx on the Patent Owner at the correspondence address of record for the subject patent as follows:

Smith Baluch LLP
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Boston, MA 02116

A courtesy copy is being sent by email on this day to Patent Owner’s counsel of record in the Litigation as follows:

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Dated: November 20, 2024

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