

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LUXOTTICA OF AMERICA INC.,

Petitioner

v.

E-VISION OPTICS, LLC

Patent Owner

Case No. IPR2024-01030

Patent No. 8,708,483

PATENT OWNER'S RESPONSE TO PETITION

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CERTIFICATION OF WORD COUNT	1
CERTIFICATE OF SERVICE	2

TABLE OF AUTHORITIES

Cases:

In re Mercier,
515 F.2d 1161 (CCPA 1975) 24

In re Whiton,
420 F.2d 1082 (CCPA 1970) 24

EXHIBIT LIST

Exhibit	Description
2001	<i>eVision Optics, LLC and Vision Smart Optics, Inc. v. Luxottica Group S.P.A. and Luxottica of America Inc.</i> , Case No. 8:23-cv-02013 AB (SHK) Order Denying Defendants' Motion to Stay, Dkt. 75 (Aug. 21, 2024 C.D. Cal.)
2002	<i>eVision Optics, LLC and Vision Smart Optics, Inc. v. Luxottica Group S.P.A. and Luxottica of America Inc.</i> , Case No. 8:23-cv-02013 AB (SHK) Order Re Civil Jury/Court Trial, Dkt. 54 (April 4, 2024 C.D. Cal.)
2003	<i>eVision Optics, LLC and Vision Smart Optics, Inc. v. Luxottica Group S.P.A. and Luxottica of America Inc.</i> , Case No. 8:23-cv-02013 AB (SHK) Order Scheduling Additional Dates and Correcting Scheduling Order, Dkt. 58 (April 18, 2024 C.D. Cal.)
2004	<i>eVision Optics, LLC and Vision Smart Optics, Inc. v. Lenovo Group, Ltd., et al.</i> , Case No. 8:23-cv-01860 AB (SHK) Defendants' Preliminary Invalidity Contentions (July 19, 2024 C.D. Cal.) (ex-cerpted)
2005	<i>eVision Optics, LLC and Vision Smart Optics, Inc. v. Luxottica Group S.P.A. and Luxottica of America Inc.</i> , Case No. 8:23-cv-02013 AB (SHK) Defendants' Invalidity Contentions (July 12, 2024 C.D. Cal.)
2006	<i>eVision Optics, LLC and e-Vision Smart Optics, Inc. v. Lenovo Group, Ltd. et al.</i> , Case No. 8:23-cv-01860-AB-SHK, Order re Civil Jury/Court Trial, Dkt. 54 (April 3, 2024 C.D. Cal.)
2007	Lex Machina – Federal Court – Federal District Court Cases in C.D. Cal, Pending Between 2019-09-01 and 2024-09-19
2008	Vacancies in the Federal Judiciary 118th Congress, last updated on 9/23/2024, https://www.uscourts.gov/judges-judgeships/judicial-vacancies/current-judicial-vacancies
2009	<i>eVision Optics, LLC and Vision Smart Optics, Inc. v. Luxottica Group S.P.A. and Luxottica of America Inc.</i> , Case No. 8:23-cv-02013 AB (SHK) Order Scheduling Additional Dates and Correcting Scheduling Order, Dkt. 58 (April 18, 2024 C.D. Cal.)

Exhibit	Description
2010	<i>eVision Optics, LLC and e-Vision Smart Optics, Inc. v. Lenovo Group, Ltd. et al.</i> , Case No. 8:23-cv-01860-AB-SHK, Order Granting Joint Stipulation to Schedule Additional Dates, Dkt. 56 (April 18, 2024 C.D. Cal.)
2011	U.S. Patent Application Pub. No. 2006/0023158 A1, Eyeglasses With Electrical Components, Thomas A. Howell et al., dated Feb. 2, 2006 (“Howell-158”)
2012	U.S. Patent Application Pub. No. 2005/0264752 A1, Eyewear Supporting After-Market Electrical Components, Thomas A. Howell et al., dated Dec. 1, 2005 (“Howell-752”)
2013	U.S. Patent No. 6,491,394, Method For Refracting and Dispensing Electro-Active Spectacles, Ronald D. Blum et al., dated Dec. 10, 2002 (“Blum-394”)
2014	U.S. Patent Application Pub. No. 2005/0140924 A1, Electro-Active Multi-Focal Spectacle Lens, Ronald D. Blum et al., dated June 30, 2005 (“Blum-924”)
2015	<i>eVision Optics, LLC and Vision Smart Optics, Inc. v. Luxottica Group S.P.A. and Luxottica of America Inc.</i> , Case No. 8:23-cv-02013 AB (SHK) (IN CHAMBERS) Order Continuing Claim Construction Hearing, Dkt. 97 (Oct. 7, 2024 C.D. Cal.)
2016	<i>eVision Optics, LLC and e-Vision Smart Optics, Inc. v. Lenovo Group, Ltd. et al.</i> , Case No. 8:23-cv-01860-AB-SHK, (IN CHAMBERS) Order Continuing Claim Construction Hearing, Dkt. 74 (Oct. 7, 2024 C.D. Cal.)
2017	U.S. Patent No. 7,030,411, Electronic Unit Integrated Into A Flexible Polymer Body, Peter A. Krulevitch et al. dated Apr. 18, 2006 (“Krulevitch”)
2018	<i>eVision Optics, LLC and Vision Smart Optics, Inc. v. Lenovo Group, Ltd., et al.</i> , Case No. 8:23-cv-01860 AB (SHK), Dkt. 78, Order dated Dec. 4, 2024
2019	Declaration of Professor James H. Oliver, Ph.D
2020	<i>Curriculum Vitae</i> of Professor James H. Oliver, Ph.D.
2021	Point-to-point construction, Wiki page available online at: https://en.wikipedia.org/wiki/Point-to-point_construction

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Exhibit	Description
2022	Air tightness vs water tightness, Physics Forum webpage available online at: https://www.physicsforums.com/threads/air-tightness-vs-water-tighness.142407/#post-1161525
2023	Exclusive Media Event Marks Debut of OAKLEY THUMP, available online at: https://www.globenewswire.com/news-release/2004/11/15/318738/2175/en/Exclusive-Media-Event-Marks-Debut-of-OAKLEY-THUMP.html
2024	Oakley Thump, available online at: https://museumoffailure.com/exhibition/oakley-thump
2025	Oakley Thump review: Oakley Thump, available online at: https://www.cnet.com/reviews/oakley-thump-review/

E-Vision Optics, LLC (“Patent Owner”) submits this Response to the Petition of Luxottica of America Inc. (“Petitioner”) seeking *inter partes* review (“IPR”) of U.S. Patent No. 8,708,483 (“the ’483 patent”).

I. Introduction

Patent Owner is a pioneering research and development company that has been at the forefront of vision correction technology for more than 20 years. Together with its one-time subsidiary Pixel Optics, Inc., the developer of the emPower! electronic focusing prescription eyewear, Patent Owner has introduced groundbreaking technologies relating to conventional and fluidic lenses with associated electronics, including tunable lenses for patients with presbyopia. From its dedicated research facility in Sarasota, Florida, Patent Owner has partnered with private industry and government entities including NASA, the National Space Biomedical Research Institute, and the U.S. Armed Forces to solve some of the most widespread problems with vision correction.

Before the inventions claimed in the ’483 patent, there was a need for eyeglasses with electronic components to implement Patent Owner’s electronically tunable lenses that also maintained a consumer-friendly aesthetic and practical design. For example, it was challenging at the time to minimize the number of frame parts while maintaining the frame’s aesthetics. It was also difficult to protect

electronic components of the eyewear from the elements, including sweat or rain, which can damage electronics and cause them to malfunction. Finally, there were difficulties incorporating electronics into the frame design without giving the frame a bulky aesthetic.

The '483 patent addressed these challenges by placing a sealed, moisture-resistant module within the temple of an eyewear frame, which could contain a variety of electronic components within the seal, e.g., a switch, detector, processor, power source, drive circuit, transmitter, receiver, transceiver, and/or sensor(s). For example, the inventors recognized that by placing electronics in a hermetically sealed module located in the temple and then connecting the module to the electro-active devices using a flex circuit, the electronic components could be protected far better than if they were on the exterior or front portion of the eyewear. A consumer-friendly aesthetic could be maintained because the module would be obscured by the ear of the wearer when in use.

Petitioner's challenge to at least claims 3, 13, 16, and 19-37 of the '483 patent should be rejected. Petitioner relies on two primary references—Howell-596 and Blum-741—together with various secondary references to form 11 grounds. But neither Howell-596 nor Blum-741 discloses a hermetically sealed electronics

module or a flex circuit connected to an external device, as recited in challenged claims 3, 13, 21 and 32 of the '483 patent.

Howell-596, titled "Radiation monitoring system," discloses a UV detector and identifies a laundry list of places it could be placed to "inform persons of UV radiation levels." In addition to places like a baseball cap and a wristwatch, Howell-596 discloses that a UV detector could be "integrated with eyewear, such as a frame (e.g., a temple of the frame) of the eyewear ... As an example, these components can be formed together on a substrate as a module." (EX-1003, Howell-596 at [0007].) But nothing in Howell-596 discloses or suggests using an embedded UV detector to connect to an external device, such as electro-active lenses, or addressing challenges associated with developing electro-active eyewear with a consumer-friendly appearance. As a result, for grounds with Howell-596 as the primary reference (e.g., Ground 5), Petitioner cherry-picks disclosures from prior art references that are non-analogous to each other, while failing to adequately articulate why a POSITA would be motivated to combine Petitioner's chosen disclosures. In some other grounds (e.g., Ground 2), Petitioner distorts prior art in order to map disclosure to claim elements.

Blum-741, one of Patent Owner's own patents related to its electronically tunable lenses, demonstrates the precise deficiencies that the '483 patent was

intended to solve: the lack of a commercially acceptable solution for incorporating electronic components into a frame for connecting to electro-active devices. The secondary reference Hattori-912 fails to cure this deficiency. Thus, for grounds with Blum-741 as the primary reference (e.g., Grounds 8 and 9), Petitioner's proposed combination fails to disclose key limitations of the '483 patent, and no POSITA would have been motivated to modify or combine the references to overcome these deficiencies.

Accordingly, the Board should find that Petitioner has not met its burden and that challenged claims 3, 13, 16, and 19-37 of the '483 patent are patentable.

II. The '483 Patent

The '483 patent "generally relates to integrating electronic components into an electronic eyeglass frame" for the purpose of driving electronic applications, such as electro-active lenses and electronic display. (EX-1001, '483 patent at 1:31-40.) At the time of the '483 patent, the trend of incorporating electronics into spectacle eyewear started accelerating. (EX-1001, '483 patent at 1:56-2:7.) But the industry faced serious challenges "to incorporate electronics into eyewear without harming the aesthetics and functionality of the eyewear." (EX-1001, '483 patent at 2:8-10.) More specifically, incorporating electronics into eyewear would "limit the fashion design of the eyeglass frame or limit the materials which the eyeglass frame can be

made of.” (EX-1001, ’483 patent at 2:10-17.) A good example was Oakley Thump™, which incorporated a MP3 player into the temple of the eyewear but the thick temple housing the electronics “distract[ed] from the aesthetic appearance of the eyeglass frames.” (EX-1001, ’483 patent at 1:57-64.) In addition, incorporating electronics into eyewear would also require that manufacturers maintain a large number of stock keeping units (SKUs) of “completed eyeglass frames or eyeglass frame components (frame fronts, bridges, temples),” thereby increasing the complexity and cost of manufacturing. (EX-1001, ’483 patent at 1:57-64.) Further challenge for incorporating electronics into eyewear was to “allow for robust placement of the electronics, and in a way that can be manufactured so that it remains affordable, and aesthetically desirable.” (EX-1001, ’483 patent at 2:8-17.)

With these challenges in mind, inventors of the ’483 patent developed various embodiments of inventive electronic eyewear frames that leveraged integrated modular design, balanced location distribution, and flexible wiring. These inventive embodiments “allow[] for a mostly universal electronics module or modules that can be applied to most eyeglass frames,” thereby saving cost by decreasing SKUs of frames or frame components. (EX-1001, ’483 patent at 1:40-49.) In addition, “conductive wiring of the temples and the frame front is minimized, cosmetics and form factor of the eyeglass frame is maintained, and complicating issues of

connecting electrical current thru the bridge or hinge of the eyeglass frame are mitigated.” (EX-1001, ’483 patent at 1:40-49.)

Figure 8B of the ’483 patent (annotated and reproduced below) illustrates an example of the inventive electronic eyewear frame, in which an electronic module 899 is disposed within a temple 810 and behind the ear of the wearer. (EX-1001, ’483 patent at 8:42-54.) The electronic module 899 can enable functions of electro-active lenses 812 in the eyewear. (*Id.*) For example, the electronic module can contain various electronic components that enable electronic functions of the eyewear, such as a power source, drive circuit, sensing mechanism (*e.g.*, tilt sensor), an antenna, a receiver, a transmitter, a transceiver, a rangefinder, a micro-processor, and a controller. (Ex-1001, ’483 patent at 5:54-63.) Alternatively, the electronic module can also be placed before the ear of the wearer (*e.g.*, near the hinge of the frame), as illustrated in Figure 12C of the ’483 patent (annotated and reproduced below).

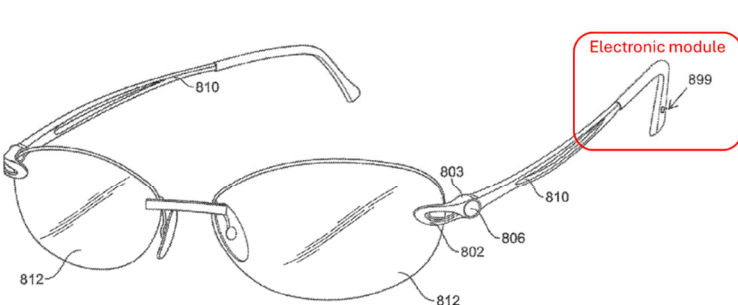


FIG. 8B

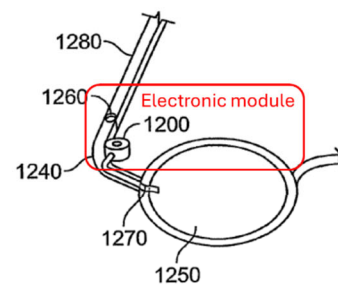
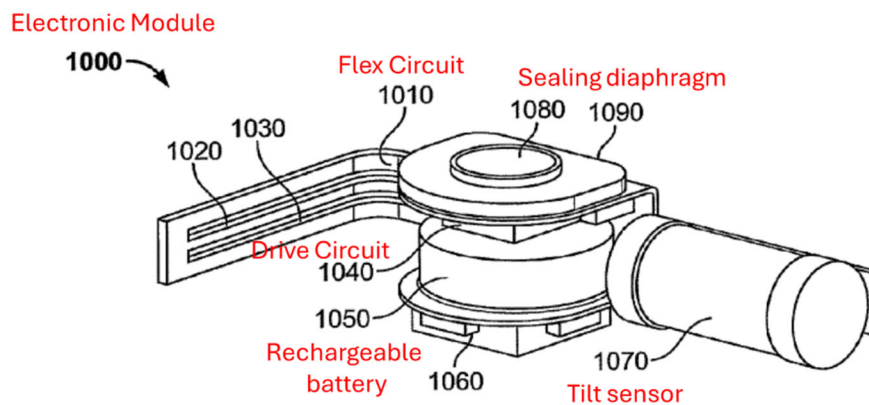


FIG. 12C

Figure 10 of the '483 patent (annotated and reproduced below) illustrates more details of the electronic module. The electronic module, labeled as 1000, includes a drive circuit 1040 placed above a rechargeable battery 1050, a tilt sensor 1070, and a manual switch 1080 attached to the top of the electronic module and integrated with a sealing diaphragm 1090. (Ex-1001, '483 patent at 9:8-25.) The electronic module 1000 further includes a flex circuit 1010 configured to connect the electronic module 1000 with external devices, such as electro-active lenses. (*Id.*)



(EX-1001, FIG 10 (annotations added).)

In the electronic module 1000, a charging coil 1060 is employed to inductively charge the rechargeable battery 1050. (*Id.*) The electronic module 1000 can be hermetically sealed while still allowing the battery to be recharged without breaking the seal. (*Id.*) The electronic components as mentioned above can be contained within a housing, which is substantially wear resistant, moisture resistant, and is

preferably hermetically sealed. (Ex-1001, '483 patent at 10:40-59.) In view of the highly integrated nature of the electronics within a rugged housing (e.g., wear resistant and hermetically sealed), as well as the flex circuit configured to connect with external devices, the inventive electronic eyewear frames “enabl[e] electronic frames and electro-active lenses ... while minimizing the number of frame part SKUs [] and maintaining the aesthetics of the frame.” (EX-1001, '483 patent at 2:18-26; EX-2019, Oliver Decl., at ¶35.)

III. Level of Ordinary Skill in the Art

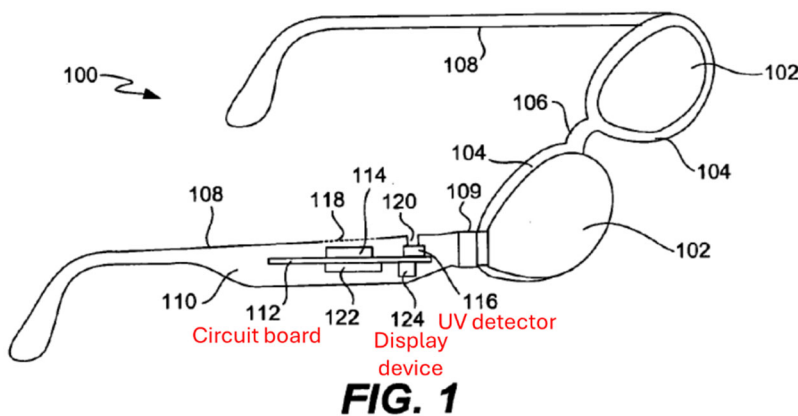
A POSITA at the time of the invention of the '483 patent would have had a bachelor's degree in mechanical engineering, electrical engineering, or computer engineering, or an equivalent degree and, in addition, approximately two years of work experience in mechanical, electrical, and industrial design, such as with embedded electronic devices. More advanced degrees or training in a related discipline or both can compensate for shorter work experience. (Oliver Decl., at ¶39.) Patent Owner's expert, Dr. James Oliver, is qualified to offer opinions under this standard and the standard set forth by Petitioner. (Oliver Decl., at ¶42.)

IV. Overview of the Relevant Prior Art

A. Howell-596

Howell-596 is in the field of radiation detection and, more specifically, ultraviolet (UV) radiation detection. (Ex-1003, Howell-596 at [0003]-[0005].) In view of the “need for improved approaches to measure and inform persons of UV radiation levels,” Howell-596 discloses mounting UV detection system on various products, including eyeglasses, a shoe, and a necklace. (EX-1003, Howell-596 at [0003]-[0005], [0232].)

Howell-596 discloses that, when mounted to a pair of eyeglasses, the UV detection system includes a circuit board 112 that can be used as a substrate for integrating other components such as a UV detector 116 to monitor the UV level through an opening 120, and a display 124 to display results measured by the UV detector 116:



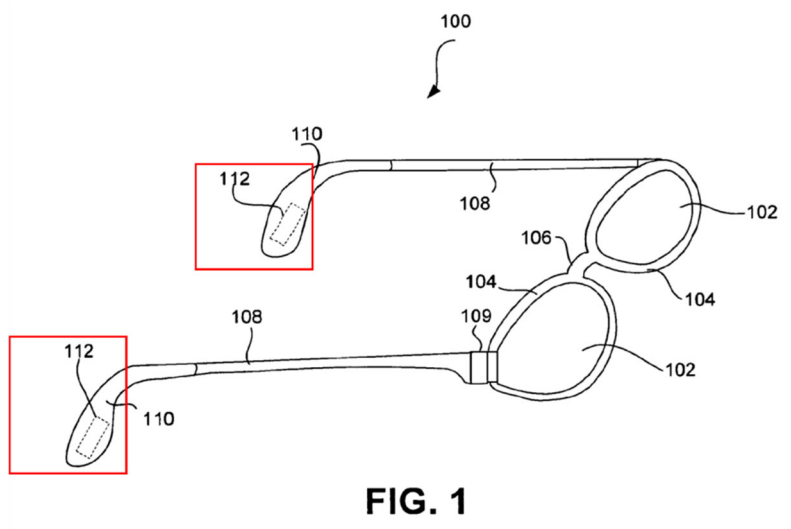
(EX-1003, Howell-596 at FIG. 1 (annotations added).)

Throughout the disclosure of Howell-596 (e.g., as illustrated in Figures 1 and 23A-23G), the UV detection system is configured as an integrated system that does not extend to other parts of the eyeglasses (including the lenses). In fact, Howell-596 expressly discloses that “[i]n one embodiment, *all components* for monitoring radiation can be integrated with eyewear, such as a frame (e.g., a temple of the frame) of the eyewear ... As an example, these components can be formed together on a substrate as a module.” (EX-1003, Howell-596 at [0007] (emphasis added).)

B. Howell-833

Howell-833 “pertains to techniques for providing eyewear with electrical components.” (EX-1004, Howell-833 at 3:6-15.) To this end, Howell-833 discloses several examples of attaching electrical components to eyewear, including via temple arrangement (*e.g.*, attached to or at least partially embedded in the temple arrangement), temple adapter (*e.g.*, mechanically coupled to a temple), swappable temple portions, or an extended endpiece where electrical components can be placed. (EX-1004, Howell-833 at 3:16-55.)

Figure 1 of Howell-833 (reproduced below) illustrates an eyewear with electrical components 112 located at the tip of both temples:



(EX-1004, Howell-833, at Figure 1 (annotation added).)

Although the associated description of Figure 1 does not specify what can be included in the electrical components 112, Figure 4 does lists components such as an electrical connector, an electrical switch, a power source, a circuit board, an indicator, a display, a speaker, a controller, a memory device, a frequency receiver, a sensor, a motion detector, and a radio frequency identification (RFID) tag. (EX-1004, Howell-833 at 16:11-17:12.)

C. Blum-741

Blum-741, one of Patent Owner's own patents, "relates to the field of optics" and "[m]ore particularly, the present invention relates to vision correction with a multi-focal electro-active spectacle lens." (EX-1005, Blum-741 at 1:15-18.) With this goal in mind, Blum-741 discloses a spectacle having an electro-active lens that is formed by a stack of at least two electro-active regions to produce zones with

different viewing corrections and a controller for independently activating each electro-active region. Figure 55a of Blum-741 illustrates an example of an electro-active lens including two zones 5560 and 5565, each one of which can be independently activated. (EX-1005, Blum-741 at 41:26-39.) For example, when both zones are activated, near vision correction may be present, while if only one of the two regions is activated, such as 5565 but not 5560, near-intermediate vision is present. (*Id.*)

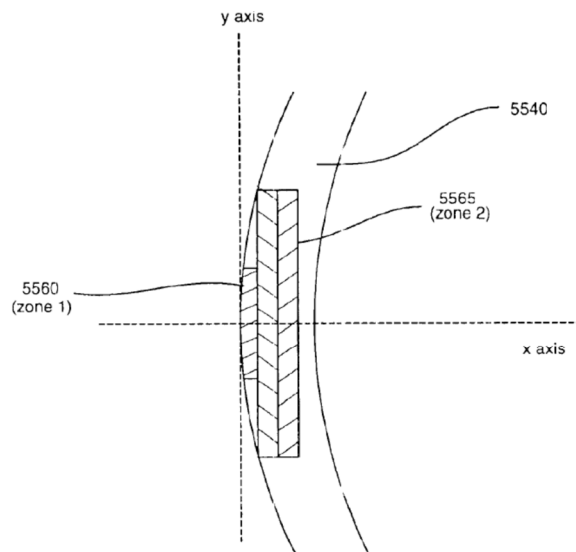


Fig. 55a

(EX-1005, Blum-741, at Figure 55a.)

Blum-741 also discloses a few other variations, such as an electro-active lens having at least one electro-active region to produce a plurality of zones with different viewing corrections and at least one blending zone between the plurality of vision correction zones, or an electro-active lens having two stacked electro-active regions

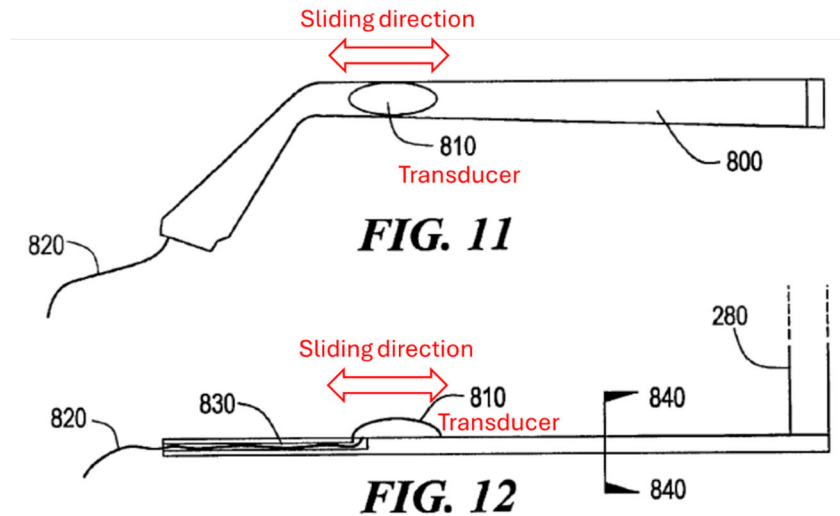
in which a first region produces a near and near-intermediate viewing correction zone and a second region produces a far-intermediate viewing correction zone. (EX-1005, Blum-741 at 1:22-47.)

D. Spitzer

Spitzer concerns “portable applications” of “[i]nformation storage and processing, electronic recording of sound and images, electronic communications, and electronic entertainment systems.” (EX-1007, Spitzer at 1:16-18.) Noting that “it is desirable to have an audio/video interface which is compact and allows hands-free or nearly hands-free operation,” Spitzer discloses eyeglasses as the vehicle to integrate the complete audio/video interface. (EX-1007, Spitzer at 1:53-61.)

As an example, Figures. 11-12 of Spitzer (annotated and reproduced below) illustrate an eyewear, where a bone conductivity transducer (e.g., microphone and/or speaker) 810 is mounted on the frame. (EX-1007, Spitzer at 7:44-60.) Transducer 810 is mounted on the inside of the temple for adequate contact to the wearer's head and has a sliding mechanism that allows the user to adjust the position for best fit. (*Id.*) Transducer 810 is in communication with the rest of the system through leads 820 as illustrated in Figure 12. (*Id.*) The leads may be made from flexible stranded insulated wire, flexible coaxial cable, or flexible circuitry based on Kapton or other

polymeric material such that the transducer 810 can be adjusted without strain to the leads. (*Id.*)



(EX-1007, Spitzer, at Figures 11 and 12 (annotation added).)

Figure 20 of Spitzer (annotated and reproduced below) illustrates another example system in which a plug-in module 1001 is located on a strap 1002 behind the head of the wearer. (EX-1007, Spitzer at 9:55-10:4.) The strap may be flat if it contains Kapton flex circuitry, or it may have a rectangular or other cross section. (*Id.*) This configuration would mitigate any discomfort to the wearer. (EX-2019, Oliver Decl. at ¶53.) Spitzer further discloses that “[i]f the circuitry is too large ... for head mounting, the strap 1002 may be lengthened so that the plug-in module 1001 can be placed in a pocket or worn on a belt.” (*Id.*)

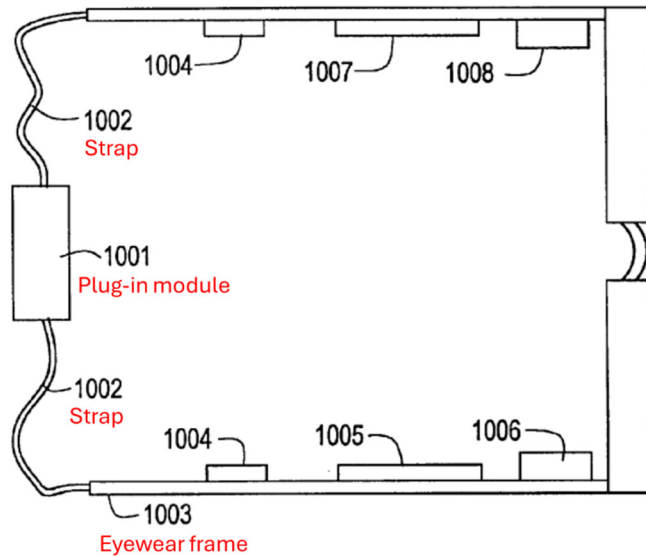


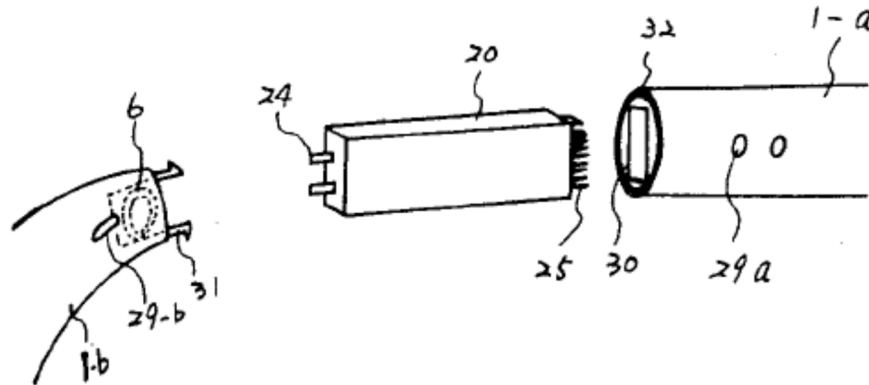
FIG. 20

(EX-1007, Spitzer, at Figure 20 (annotation added).)

E. Hattori-912

Hattori-912 concerns “eyeglasses with additional functions,” such as a display and a radio. (EX-1006, Hattori-912 at 7.) As an example, Figure 4 of Hattori-912 (reproduced below) illustrates a semiconductor integrated circuit 20 is embedded within a hollow part 30 in frame part 1-a. (EX-1006, Hattori-912 at 8.) The semiconductor integrated circuit 20 is used to drive the display device (not shown in Figure 4) included in the eyewear. (EX-1006, Hattori-912 at 9.) Frame part 1-b can be locked with frame part 1-a via biting part 31. (EX-1006, Hattori-912 at 8.) In addition, at the interface between frame part 1-a and frame part 1-b, a waterproof ring 32 is included. (*Id.*) Battery 6 is separate from the semiconductor integrated

circuit 20 and is located in frame 1-a to power the semiconductor integrated circuit 20. (*Id.*)



(EX-1006, Hattori-912 at Figure 4.)

V. Petitioner Fails to Show that the Cited References Render the Challenged Claims Unpatentable

A. Claim 3 Is Patentable

Claim 3 depends on claim 2, which in turn depends on claim 1. Claims 1-3 are reproduced below:

1. Eyewear comprising:
a frame; and
a sealed moisture resistant module attached to the frame, wherein the module comprises within the seal any two of: a switch, a detector, a processor, a power source, a drive circuit, a transmitter, a receiver, a transceiver, and a sensor,
wherein the frame comprises a first temple and a second temple, and wherein the module is disposed within the first temple.
2. The eyewear of claim 1, wherein the module includes an electrical connector configured to connect the any two of switch, detector, processor, power source, drive circuit, transmitter, receiver, transceiver, and sensor with an external device.

3. The eyewear of claim 2, wherein the module is electrically connected to the external device by a flex circuit.

Petitioner challenges Claim 3 under two grounds: Ground 5 (i.e., the combination of Howell-596, Howell-833, Blum-741, and Spitzer) and Ground 9 (i.e., the combination of Blum-741, Hattori-912, and Spitzer).

1. Ground 5 Does Not Render Claim 3 Obvious Because a POSITA Would Not Have Been Motivated to Combine Howell-596 with Petitioner's Other Cited References

In challenging claim 3 under Ground 5, Petitioner contends that “[a] POSITA would have been motivated to connect the sealed modules discussed in Grounds 2 and 3 to an external device mounted on the eyewear, such as Blum-741’s electro-active lenses (discussed in Ground 4), using a flex circuit in view of Spitzer.” (Petition at 44.) The “sealed module discussed in Grounds 2 and 3,” Petitioner contends, is allegedly disclosed in Howell-596. (Petition at 15-16.) In other words, Petitioner relies on a combination of Howell-596 (for its purported disclosure of a sealed module), Blum-741 (for its purported disclosure of electro-active lenses), and Spitzer (for its purported disclosure of a flex circuit). But a POSITA would not have been motivated to combine the teachings of Howell-596 with those of the other two references for the reasons set forth below.

First, a POSITA would not have been motivated to incorporate Spitzer's flex circuit into the combination of Howell-596 and Blum-741 because the flex circuit in Spitzer is either unnecessary and wasteful or inapplicable in Petitioner's proposed combination. (EX-2019, Oliver Decl. at ¶63.) Petitioner points to two embodiments of flex circuitry disclosed in Spitzer (Petition at 44), but the disclosed flex circuitry in neither instance is applicable in Howell-596, as set forth below. (EX-2019, Oliver Decl. at ¶64.)

In the first embodiment, flexible circuitry is used to connect a transducer that has a "sliding mechanism" to allow the user to "adjust the position for best fit." (EX-1007, Spitzer at 7:44-60.) Neither Howell-596, nor Blum-741, discloses any a sliding mechanism, or any other mechanism, that allows users to adjust the position of the sealed module or the electro-active lens. In other words, the reason for Spitzer's flexible circuitry—use of a transducer with a sliding mechanism—is not disclosed or suggested by Howell-596 or Blum-741. And without any movable components to connect, a POSITA would have had no reason to incorporate Spitzer's flexible circuitry in Petitioner's combination of Howell-596 and Blum-741. (EX-2019, Oliver Decl. at ¶65.)

Howell-596, throughout its specification, discloses various embodiments where a printed circuit board (PCB) is used to connect electronic components. (*See*,

e.g., EX-1003, Howell-596 at [0148]-[0150], [0152], [1053], [0155], [0184], and [0192].) Therefore, based on the teachings of Howell-596, a POSITA would have been motivated to use a PCB for connecting any additional elements. (EX-2019, Oliver Decl. at ¶¶66-67.) Furthermore, compared to a PCB, using Spitzer's flexible circuitry would likely have required more manual assembly during manufacturing, thereby increasing the cost of making the device. (EX-2019, Oliver Decl. at ¶68.) Accordingly, a POSITA would not have been motivated to use Spitzer's flexible circuitry to connect two fixed components (e.g., a sealed module and electro-active lenses) in Petitioner's combination of Howell-596 and Blum-741, especially so when other electronic components are integrated on a PCB. (EX-2019, Oliver Decl. at ¶68.)

In addition, throughout the disclosure of Howell-596, "*all components* for monitoring radiation are integrated," and as an example, "these components can be *formed together on a substrate* as a module." (EX-1003, Howell-596 at [0007] and [0068] (emphasis added).) A POSITA would therefore have understood that Howell-596 teaches integrating different components together as a single unit, rather than distributing them across multiple locations. (EX-2019, Oliver Decl. at ¶69.) A POSITA would also have understood that Howell-596 teaches fixing all of its components in place (e.g., on a substrate), rather than making them slidable or otherwise

movable. (EX-1003, Howell-596 at [0007]; EX-2019, Oliver Decl. at ¶69.) The lack of disclosure of distributing components across different locations would have motivated a POSITA to integrate the electro-active lens of Blum-741 with the electronics module of Howell-596, instead of using the flexible circuitry in Spitzer. (EX-2019, Oliver Decl. at ¶69.)

In the second of Spitzer's two embodiments Petitioner relies on, Petitioner points to the flex circuitry used in a *strap* 1002, which connects a plug-in module 1001 *behind the head* of the wearer with the temples of an eyewear. (Petition at 44; Ex-1007, Spitzer at 9:49-10:4 and FIG. 20.)

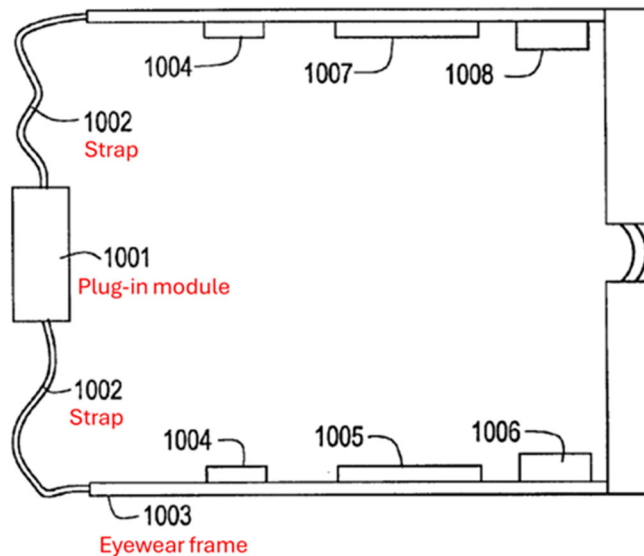


FIG. 20

But Petitioner fails to explain how a POSITA would use the strap to connect the UV detection system located on a temple in Howell-596 with the electro-active

lens located within the spectacle frame in Blum-741. For example, the width of the strap would typically be 1.5 inches or larger in order not to introduce discomfort to the wearer. (EX-2019, Oliver Decl. at ¶71.) In comparison, such width would be too large for fitting an electrical connector into an eyeglass frame like those disclosed by Howell-596 – for a typical pair of eyeglasses, the width of the frame would be around half an inch or less. (EX-2019, Oliver Decl. at ¶71.) Increasing the size of the frame would introduce one of the problems the '483 patent aims to address, *i.e.*, a frame with embedded electronics being too thick or bulky. (EX-2019, Oliver Decl. at ¶71.)

In view of the significant difference in sizes between the strap in Spitzer and the electronic components in Howell-596, a POSITA would not have been able to incorporate the strap of Spitzer into the combination of Howell-596 and Blum-741 without substantial reconstruction or redesign. (EX-2019, Oliver Decl. at ¶72.) In addition, as set forth above, all components in Howell-596 are integrated within the eyewear, and no component is behind the head of wearer or outside the eyewear. Therefore, the reason underlying the use of the flexible strap in Spitzer is totally absent from the combination of Howell-596 and Blum-741. Accordingly, a POSITA would have found no reason to use the flex circuitry in Spitzer to connect different components in Howell-596. (EX-2019, Oliver Decl. at ¶73.)

Second, a POSITA would not have been motivated to combine Howell-596 with Blum-741 because these two prior art references are in different fields and aim to solve different problems. (EX-2019, Oliver Decl. at ¶74.) More specifically, Howell-596 is in the field of radiation detection and concerns “improved approaches to measure and inform persons of UV radiation levels.” (EX-1003, Howell-596 at [0003]-[0005].) The eyewear disclosed in Howell-596 is merely one of several potential platforms for Howell-596’s UV detection system. For example, Figures 23A-23G illustrate “examples of various end products having radiation monitoring capability,” such as hat, watch, shirt, shoe, keychain, bracelet, necklace, bottle, and tube. (EX-1003, Howell-596 at FIGS. 23A-23G and [0232].)

In contrast, Blum-741 expressly sets forth in its “FIELD OF INVENTION” that “[t]he present invention relates to the field of optics. More particularly, the present invention relates to vision correction with a multi-focal electro-active spectacle lens.” (EX-1005, Blum-741 at 1:15-19.) A POSITA, after reviewing Howell-596 and Blum-741, would have recognized that they are in different fields (i.e., radiation detection versus optics) and aim to solve different problems (i.e., UV detection versus vision correction with electro-active lenses). (EX-2019, Oliver Decl. at ¶75.) Accordingly, a POSITA would not have been motivated to combine Howell-596 with Blum-741. (EX-2019, Oliver Decl. at ¶75.)

While Petitioner lists multiple purported rationales for combining prior art teachings (Petition, at 45-46), none of them consider or even acknowledge the fact that the three references in Petitioner's combination—Howell-596, Blum-741, and Spitzer—are implemented in dissimilar environments with unrelated goals. (EX-2019, Oliver Decl. at ¶76.) For example, Petitioner contends that Spitzer discloses the benefits of flex circuits, such as the ability to adjust the position of components without strain on the lead. Petition, at 45. But Petitioner fails to point to any component in the combination of Howell-596 and Blum-741 that allows for the adjustment of positions. Accordingly, Petitioner's alleged benefit of Spitzer's flex circuit would not apply to the combination Petitioner proposes. (EX-2019, Oliver Decl. at ¶77.) Petitioner also makes the conclusory argument that “flex circuits were well-known in the art, leading a POSITA to reasonably expect success in the combination.” (Petition, at 45.) But as set forth above, Petitioner ignores the significant difference in size between Spitzer's strap in Spitzer and the relevant components in Howell-596 and fails to explain how a POSITA would have implemented the proposed combination without significant redesign.

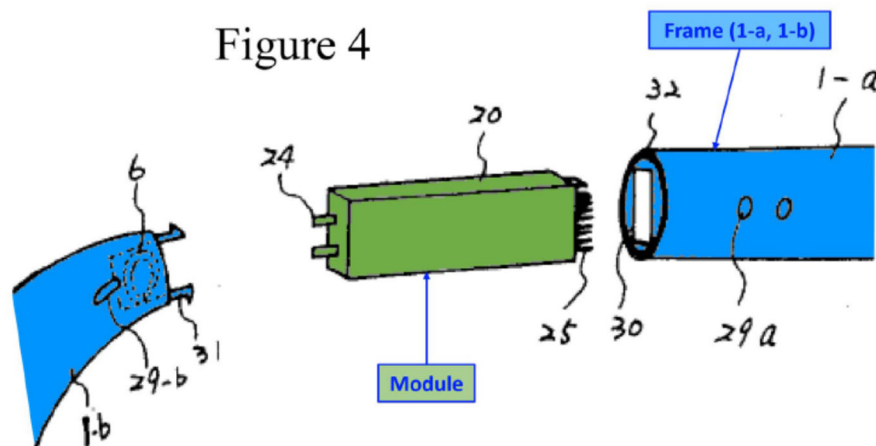
When Petitioner's arguments of obviousness are considered against the backdrop of the references' key distinctions, it is clear that Petitioner's generic assertion that a POSITA would have combined functionalities of three references into a single

system uses impermissible hindsight bias to select and combine the references. Reliance on “isolated teachings of the prior art without considering the overall context within which those teachings are presented” is improper, and such improper reliance should be considered when determining the use of impermissible hindsight. *In re Mercier*, 515 F.2d 1161, 1166 (CCPA 1975); *see generally In re Whiton*, 420 F.2d 1082 (CCPA 1970) (finding no evidence to support the assertion that a POSITA would have thought to combine the known prior art elements).

2. Ground 9 Does Not Render Claim 3 Obvious Because a POSITA Would Not Have Been Motivated to Combine Blum-741 with the Other Cited References and Because Petitioner's Combination Fails to Disclose “A Sealed Moisture Resistant Module Attached to the Frame”

Petitioner first contends that, under ground 8, the combination of Blum-741 and Hattori-912 renders obvious claim 1. (Petition at 55-65.) Claim 3 depends on claim 2, which depends on claim 1. Petitioner then contends that, under ground 9, “[a] POSITA would have been motivated to combine Spitzer with Blum-741 and Hattori-912” to yield the subject matter in claim 3. (Petition at 78.) This argument fails at the first step (*i.e.*, combining Blum-741 and Hattori-912) for two reasons. First, the combination of Blum-741 and Hattori-712 still fails to disclose or suggest “a sealed moisture resistant module attached to the frame” as recited in independent claim 1. Second, there was no motivation to combine Blum-741 with Hattori-912.

As a preliminary matter, Petitioner never identifies which component in Hattori-912 allegedly satisfies the claim requirement of a sealed moisture-resistant module attached to the frame. Petitioner first contends that “Hattori-912 discloses a sealed moisture resistant module (contents sealed in the hollow part 30 by waterproof ring 32).” (Petition at 55.) But Petitioner also points to semiconductor integrated circuit 20 in Figure 4 (reproduced below) of Hattori-912, highlights it in green, and labels it a “module.” (Petition at 55.) Accordingly, Petitioner appears to rely on one of the following in Hattori-912 as allegedly teaching the claimed sealed module: either (1) the (green) semiconductor integrated circuit 20, or (2) the combination of semiconductor integrated circuit 20, frame parts 1-a and 1-b, and waterproof ring 32:



(Figure 4 of Hattori-912, reproduced from Petition at 55.)

In either case, Petitioner's argument fails. Integrated semiconductor circuit 20 is clearly not "a sealed moisture resistant module" because as Hattori-912 expressly discloses, and as Petitioner admits, any sealing in Hattori-912 is achieved by waterproof ring 32. (Petition at 55.) A POSITA would therefore understand that integrated semiconductor circuit 20 itself, or anything within the hollow part 30, is not sealed – otherwise the waterproof ring 32 would be redundant. (EX-2019, Oliver Decl. at ¶83). To the extent that Petitioner may argue that the purported sealed moisture-resistant module includes waterproof ring 32 plus frame parts 1-a and 1-b, that argument fails as well, because the resulting module would be the entire eyeglass frame, instead of a module "attached to the frame" as required by claim 1. (EX-2019, Oliver Decl. at ¶84.)

Petitioner also points to a protective film disclosed in Hattori-912 and contends that a POSITA would have understood "this to disclose that components of Hattori-912's eyewear that are coated with protective film 41 form a sealed moisture resistant module." (Petition at 55-56.) Not so. The mere disclosure of a protective film is far from disclosing a sealed moisture resistant module.

For example, a protective film can cover only the top of an integrated semiconductor circuit but not the substrate, and a POSITA would not have understood that a protective film forms a sealed module because the substrate is still exposed to

the external environment. (EX-2019, Oliver Decl. at ¶86.) In another example, a protective film may protect a module from damage other than water or moisture, such as friction. In this example, a POSITA would have understood that the protective film is wear resistant instead of moisture resistant. (EX-2019, Oliver Decl. at ¶86.) In view of all these different options for a protective film, a POSITA, after reviewing Hattori-912, would **not** have understood that components of Hattori-912's eyewear that are coated with protective film 41 form a sealed moisture resistant module.

In addition, as set forth above, Blum-741 "relates to the field of optics" and more specifically "relates to vision correction with a multi-focal electro-active spectacle lens." (EX-1005, Blum-741 at 1:15-19.) Hattori-912, in contrast, "relates to eyeglasses with additional functions in which a display device has been mounted at the desired location of the eyeglasses and to which a radio has been added." (EX-1006, Hattori-912 at 7.) In addition, the objective of Hattori-912 is to add "information functions" to eyewear by "mounting a radio and providing a display device to display the time, date, and image information or the like in the desired location of the eyeglasses." (EX-1006, Hattori-912 at 7.)

As a result, a POSITA reviewing Blum-741 and Hattori-912 would have recognized that they are in different fields (i.e., optics versus electronics) and aim to

solve different problems (i.e., vision correction with electro-active lenses versus adding electronics to eyewear). (EX-2019, Oliver Decl. at ¶¶87-88.)

Petitioner again lists multiple purported rationales for combining prior art teachings of Blum-741 and Hattori-912 but again fails to consider or acknowledge that those teachings are implemented in dissimilar environments with unrelated goals. (Petition, at 62-63). In addition, in adding Spitzer's teachings to those taught by the combination of Blum-741 and Hattori-912, Petitioner merely refers back to its defective rationales for a different combination, i.e., Spitzer with Howell-596 and Blum-741, without explaining how the same (defective) rationales might be applicable in a different combination. (Petition, at 78.) Accordingly, Petitioner fails to sufficiently demonstrate a POSITA's motivation to combine relevant teachings of Spitzer, Blum-741, and Hattori-912. (EX-2019, Oliver Decl. at ¶89.)

In summary, there was no motivation to combine Blum-741 with Hattori-912, and even if they were combined, the resulting combination still fails to disclose or suggest "a sealed moisture resistant module attached to the frame" in claim 1. Accordingly, the combination of Blum-741 and Hattori-912 fails to render claim 1 obvious. Because claim 3 depends on claim 1, the combination of Blum-741, Hattori-912, and Spitzer would also fail to render claim 3 obvious.

B. Claim 13 Is Patentable

Claim 13 depends on claim 1 and further recites that the sealed moisture resistant module is “hermetically sealed.” Petitioner challenges Claim 13 under two grounds: Ground 2 (i.e., obvious over Howell-596) and Ground 8 (i.e., obvious over the combination of Blum-741 and Hattor-912).

1. Ground 2 Does Not Render Claim 13 Obvious Because Howell-596 Does Not Disclose or Suggest the Claimed Hermetically Sealed Module

Petitioner first defines “hermetically sealed” as airtight and then contends that Howell-596 contrasts its waterproof arrangement without vents or holes with one that does include one or more vents or holes to allow air circulation, citing paragraph [0194] of Howell-596. (Petition at 28-29.) Petitioner further argues that a POSITA would have understood that, in Howell-596’s configuration that does not include vents or holes, the resulting module is hermetically sealed. (*Id.*)

But Petitioner ignores an express teaching in the same paragraph [0194] of Howell-596, which states that “[a]lternatively, the module housing 1700 does not include vents or holes, so as to be water-resistant or water-proof.” (EX-1003, Howell-596 at [0194].) In other words, in Howell-596’s configuration that does not include vents or holes, the resulting module is water-resistant or waterproof, not hermetically sealed as Petitioner contends. The teaching is plain, and a POSITA would

have understood that the resulting module was *not* hermetically sealed. (EX-2019, Oliver Decl. at ¶94.) In addition, a POSITA would have understood that an airtight seal provides a higher degree of protection than a waterproof seal; in other words, an airtight seal is often waterproof, but the reverse is not necessarily true. (EX-2019, Oliver Decl. at ¶95.) Due to its higher degree of protection, an airtight seal is generally more costly than watertight seal, and a POSITA would not have been motivated to replace a watertight seal with an airtight one. (EX-2019, Oliver Decl. at ¶95.) Accordingly, Howell-596 fails to disclose or suggest a hermetically sealed module.

2. Ground 8 Does Not Render Claim 13 Obvious Because a POSITA Would Not Have Been Motivated to Combine Blum-741 with Other Cited References and Because Petitioner's Combination Fails to Disclose Key Limitations

As set forth above, the combination of Blum-741 and Hattori-912 fails to render claim 1 obvious because there is no motivation to combine them, and the combination still fails to disclose key limitations in claim 1. (*See* Section V.A.2 *supra*.) Claim 13 depends on claim 1, and therefore the combination of Blum-741 and Hattori-912 fails to render obvious claim 13 as well.

In addition, Petitioner argues that Hattori-912 discloses a hermetically sealed module because “something that is sealed with water-proof ring or coating is also air-tight.” (Petitioner at 75-76.) Not so. As understood by a POSITA, a hermetically

sealed module must be both airproof and waterproof and therefore has a higher level of protection than a module that is merely waterproof. (EX-2019, Oliver Decl. at ¶97.) Accordingly, the mere disclosure of waterproof module does not teach or suggest that the module is also hermetically sealed. (EX-2019, Oliver Decl. at ¶97.)

C. Claim 16 Is Patentable

Claim 16 depends on claim 1 and further recites that the sealed moisture resistant module is “substantially wear resistant.” Petitioner challenges claim 16 under two grounds: Ground 2 (i.e., obvious over Howell-596) and Ground 8 (i.e., obvious over the combination of Blum-741 and Hattor-912).

1. Ground 2 Does Not Render Claim 16 Obvious Because Howell-596 Does Not Teach or Suggest a Substantially Wear Resistant Module

According to Petitioner, because Howell-596 discloses that “[t]he module housing 1700 protects the module,” a POSITA would have understood this disclosure to mean that “the module housing (e.g., the outer portion of the module) protects the inner portions of the module from damage and is thus wear resistant.” (Petition at 29.) But equating the protective function of a housing with being wear resistant contradicts Petitioner’s own definition of wear resistant, i.e., “resistant to deterioration from damage *caused by relative motion* between the module and *another surface*.” (Petition at 29 (emphasis added).) In other words, mere disclosure of a

protective housing does not imply that the housing is wear resistant. (EX-2019, Oliver Decl. at ¶102.) For example, the housing may protect the module from damage caused by water, moisture, electromagnetic interference, or chemicals, among other things, and a POSITA would have understood that none of these is caused by relative motion between a module and another surface. (EX-2019, Oliver Decl. at ¶102.) Accordingly, a POSITA would not have understood that Howell-596 discloses any wear resistant module. (EX-2019, Oliver Decl. at ¶102.)

Petitioner does not argue that it would have been obvious for a POSITA to configure the housing in Howell-596 as substantially wear resistant or offer any rationale to support obviousness arguments; instead, Petitioner simply equates disclosure of general protection with disclosure of being wear resistant. (Petition at 29.) But contrary to Petitioner's unsupported assumption, it would not have been obvious to a POSITA to modify Howell-596's housing to make it wear resistant, at least because Howell-596's electronics module is fixed within the eyewear frame. (EX-2019, Oliver Decl. at ¶103.) It is not expected that the housing would have any "relative motion ... with another surface." (EX-2019, Oliver Decl. at ¶103.) Therefore, a POSITA would not have been motivated to using a substantially wear resistant housing for the electronic module. (EX-2019, Oliver Decl. at ¶103.)

2. Ground 8 Does Not Render Claim 16 Obvious Because a POSITA Would Not Have Been Motivated to Combine

Blum-741 with Other Cited References and Because Petitioner's Combination Fails to Disclose Key Limitations

As set forth above, the combination of Blum-741 and Hattori-912 fails to render claim 1 obvious because there was no motivation to combine them, and even if there were, the combination still fails to disclose or suggest key limitations of claim 1. (*See* Section V.A.2 *supra*.) Claim 16 depends on claim 1, and therefore the combination of Blum-741 and Hattori-912 fails to render obvious claim 16 as well.

D. Claim 19 Is Patentable

Claim 19 is an independent claim and is reproduced below:

19. Eyewear comprising:
a frame; and
a sealed moisture resistant module attached to the frame, wherein the module comprises within the seal any two of a switch, a detector, a processor, a power source, a drive circuit, a transmitter, a receiver, a transceiver, and a sensor,
wherein the module is disposed, at least partially, on a portion of the frame configured to be behind the ear of a wearer of the eyewear.

Petitioner challenges claim 19 under two grounds: Ground 3 (i.e., obvious over the combination of Howell-596 and Howell-833) and Ground 8 (i.e., obvious over the combination of Blum-741 and Hattori-912).

1. Ground 3 Does Not Render Claim 19 Obvious Because a POSITA Would Not Have Been Motivated to Place Howell-596's UV Detection System Behind the Ear

Petitioner contends that “[a] POSITA would have been motivated to place Howell-596's sealed module on the temple at least partially behind the wearer's ear

in view of Howell-833.” (Petition at 31-33.) Petitioner relies on Howell-833 solely for its purported disclosure of locating electronics in different parts of eyewear. (Petition at 31.) Petitioner’s argument fails for multiple reasons.

First, placing the UV detection system of Howell-596—which Petitioner relies on for the sealed module limitation of claim 19—behind the ear of the wearer would render the resulting system unfit for its intended purpose, *i.e.*, detecting the level of UV radiation. (EX-2019, Oliver Decl. at ¶108.) A POSITA would have understood that UV detection requires a clear window for the sensor to receive UV radiation from the surrounding environment without obstruction. (EX-2019, Oliver Decl. at ¶109.) Placing Howell-596’s UV detection system, including the sensor, behind the user’s ear would introduce various potential obstructions not present at the front of a user’s face. (EX-2019, Oliver Decl. at ¶110.) For example, longer hair would likely block the UV sensor, significantly reducing the UV radiation detected by the sensor. (EX-2019, Oliver Decl. at ¶110.) The ear itself would also likely obstruct the UV sensor significantly. (EX-2019, Oliver Decl. at ¶110.) A user’s apparel, such as scarf and hat, could also block the UV sensor. (EX-2019, Oliver Decl. at ¶110.) Therefore, a POSITA would not have been motivated to place the UV detection system of Howell-596 behind a user’s ear. (EX-2019, Oliver Decl. at ¶110.)

Second, a POSITA would not have been motivated to place only a portion of the UV detection system of Howell-596 behind a user's ear because Howell-596 teaches only an integrated UV detection system, and does not disclose or suggest distributing various components in different locations. (EX-2019, Oliver Decl. at ¶111.) More specifically, Howell-596 discloses that “*all components* for monitoring radiation are integrated,” and, as an example, “these components can be *formed together on a substrate* as a module.” (EX-1003, Howell-596 at [0007] (emphasis added).) A POSITA therefore would not have been motivated to separate the components of Howell-596's UV detection system and place them in different locations on an eyeglass frame. (Oliver Decl., at ¶111.)

Third, the testimony of Petitioner's own expert confirms that a POSITA would not have been motivated to separate various components of Howell-596's UV detection system and place only some of them behind a user's ear while leaving the rest in front of the ear. Petitioner's expert, Dr. Feland, testified that “including as many components as possible in the sealed module would allow the system to be easily removable and swappable because it is self-contained, and would have benefits for maintenance and cleaning of the eyewear generally.” (EX-1002, Feland Decl. at ¶204.) Based on this reasoning, a POSITA would have understood Howell-596 to teach away from placing different components of the UV detection system at

opposite ends of an eyeglass frame, because doing so would make the system less easily removable and swappable. (Oliver Decl., at ¶¶112-113.) Petitioner's proposed distributed configuration would also be difficult for maintenance and cleaning of the eyewear generally, according to Dr. Feland. (Oliver Decl., at ¶¶112-113.)

As with its other proposed combinations, Petitioner merely lists reasons that a POSITA allegedly would have been motivated to “place Howell-596's sealed module on the temple at least partially behind the wearer's ear in view of Howell-833.” (Petition, at 31-33). But Petitioner does not address the undesirable effect of the proposed combination or Howell-596's contradictory suggestion to integrate all components into a single module. For example, Petitioner contends that a POSITA would have recognized the benefits of placing electronics behind the ear of the wearer, such as reducing design impact and balancing weight. (Petition, at 31-32.) But a POSITA would also have recognized that Petitioner's proposed modification would render the resulting system unfit for its intended purpose of UV detection, thereby defeating any purported benefits. (Oliver Decl., at ¶114.) Similarly, “attaching components to or embedding components within an eyewear frame behind the ear of a wearer” would not lead a POSITA to “reasonably expect success,” as Petitioner contends (Petition, at 32.), because the proposed modification would likely

inhibit UV sensing or contradict the express teaching of Howell-596 discussed above. (Oliver Decl., at ¶115.)

In summary, a POSITA would not have been motivated to place all or a portion of Howell-596's UV detection system behind the ear of a user, and thus the combination of Howell-596 and Howell-833 does not render claim 19 obvious.

2. Ground 8 Does Not Render Claim 19 Obvious Because a POSITA Would Not Have Been Motivated to Combine Blum-741 with Other Cited References and Because Petitioner's Combination Fails to Disclose Key Limitations

As set forth above, there was no motivation to combine Blum-741 with Hattori-912, and even if there were, the combination still fails to disclose or suggest the limitation "a sealed moisture resistant module attached to the frame," which is also recited in claim 19. (*See* Section V.A.2 *supra*.) Accordingly, the combination of Blum-741 and Hattori-912 does not render claim 19 obvious. (EX-2019, Oliver Decl. at ¶116.)

Because neither Ground 3 nor Ground 8 renders obvious claim 19, Petitioner fails to show that claim 19 is unpatentable. Other grounds asserted by Petitioner do not cure the deficiencies in Grounds 3 and 8; in fact, Petitioner does not rely on other grounds for any claim 19 limitations. Accordingly, claim 19 is patentable. And because claims 20-37 depend directly or indirectly from claim 19, they are patentable for the same reason.

E. Claim 21 Is Patentable

Petitioner challenges claim 21 under two grounds: Ground 5 (i.e., obvious over the combination of Howell-596, Howell-833, Blum-741, and Spitzer) and Ground 9 (i.e., obvious over the combination of Blum-741, Hattori-912, and Spitzer).

As set forth above, neither the combination of Howell-596 and Howell-833 nor the combination of Blum-741 and Hattori-912 renders obvious independent claim 19. (*See* Section V.D *supra*.) Since claim 21 depends from claim 19, neither of those grounds renders claim 21 obvious.

In addition, as set forth in Section V.A.1 *supra*, a POSITA would not have been motivated to combine Howell-596 with Blum-741 and Spitzer. For this additional reason, Petitioner's Ground 5 does not render claim 21 obvious.

F. Claim 32 Is Patentable

Petitioner challenges claim 32 under two grounds: Ground 3 (i.e., obvious over the combination of Howell-596 and Howell-833) and Ground 8 (i.e., obvious over the combination of Blum-741 and Hattori-912).

As set forth above, neither the combination of Howell-596 and Howell-833 nor the combination of Blum-741 and Hattori-912 renders obvious independent

claim 19. (*See* Section V.D *supra*.) Since claim 32 depends from claim 19, neither of those grounds renders claim 32 obvious.

In addition, as set forth in Section V.B.1 *supra*, Howell-596 does not disclose or suggest the hermetically sealed module recited in claim 32. For this additional reason, Petitioner's Ground 8 does not render claim 32 obvious.

G. Claim 35 Is Patentable

Petitioner challenges claim 32 under two grounds: Ground 3 (i.e., obvious over the combination of Howell-596 and Howell-833) and Ground 8 (i.e., obvious over the combination of Blum-741 and Hattori-912).

As set forth above, neither the combination of Howell-596 and Howell-833 nor the combination of Blum-741 and Hattori-912 renders obvious the independent claim 19. (*See* Section V.D *supra*.) Since claim 35 depends from claim 19, neither of those grounds renders claim 35 obvious.

In addition, as set forth in Section V.C.1 *supra*, Howell-596 does not teach or suggest the substantially wear resistant module recited in claim 35. For this additional reason, Petitioner's Ground 8 fails.

VI. Conclusion

For the foregoing reasons, Patent Owner respectfully requests that the Board find the challenged claims patentable.

Patent Owner's Response to
Petition for Inter Partes Review
Patent No. 8,708,483

Date: March 31, 2025

Respectfully submitted,

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S RESPONSE** specified in 37 C.F.R. § 42.24 has 7,618 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24. This word count was prepared using Microsoft Word 365 v.2022.

Date: March 31, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing **PATENT OWNER'S RESPONSE** and all supporting **EXHIBITS 2019 – 2025** were served by filing the documents through the Patent Trial and Appeal Case Tracking System (P-TACTS) on March 31, 2025 and courtesy copies were also served via electronic mail, in their entireties on the following:

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