

Petitioner Luxottica of America Inc.'s Demonstratives For Oral Argument

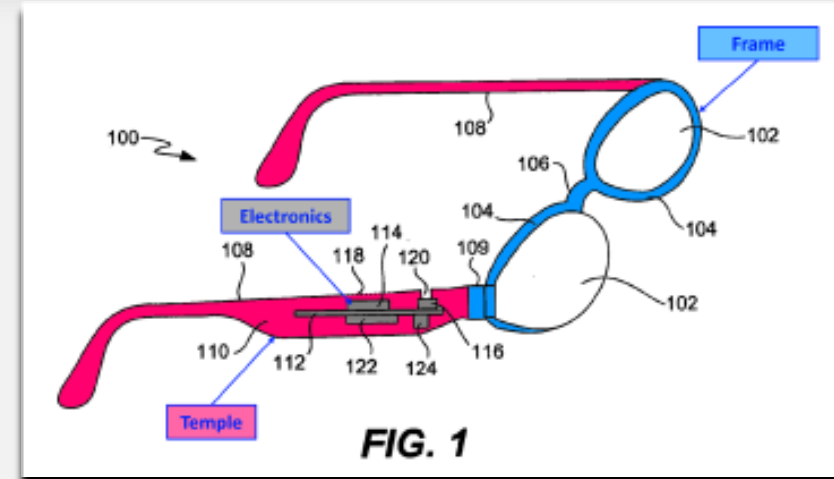
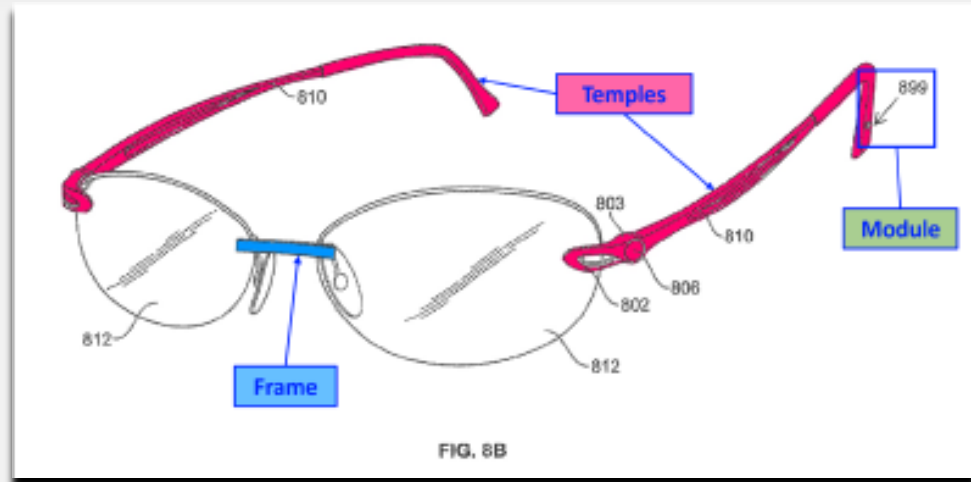
October 6, 2025

Luxottica of America Inc. v. e-Vision Smart Optics, Inc.

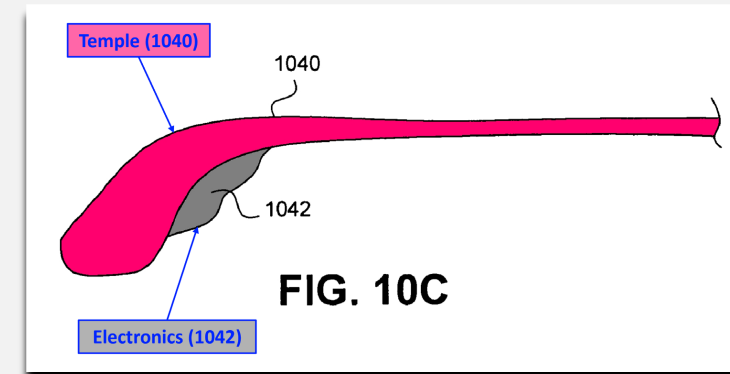
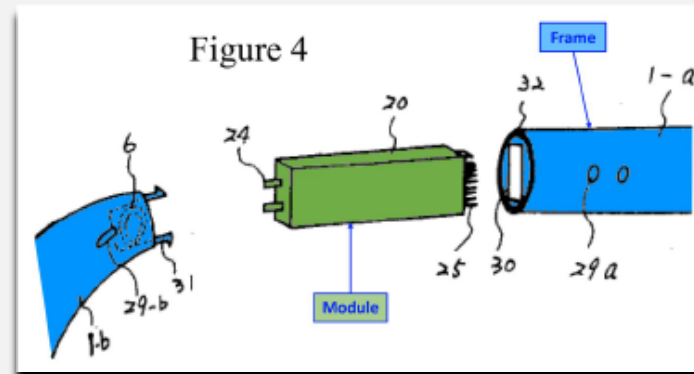
IPR2024-01030 (Patent 8,708,483)

Luxottica v. e-Vision
IPR2024-01030
Luxottica Ex. 1025

'483 Patent and the Prior Art



'483 Patent



Prior Art

Remaining Disputes Involve Trivial Features Found in Prior Art

Claims	Disputed Feature
3, 21	"wherein the module is electrically connected to the external device by <i>a flex circuit</i> "
13, 32	"wherein the module is <i>hermetically sealed</i> "
16, 35	"wherein the module is <i>substantially wear resistant</i> "
19	"wherein the module is disposed, at least partially, on a portion of the frame configured to be <i>behind the ear</i> "

Independent Claims 1 and 19 of the '483 Patent

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.

(Ex. 1001, claim 1)

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.

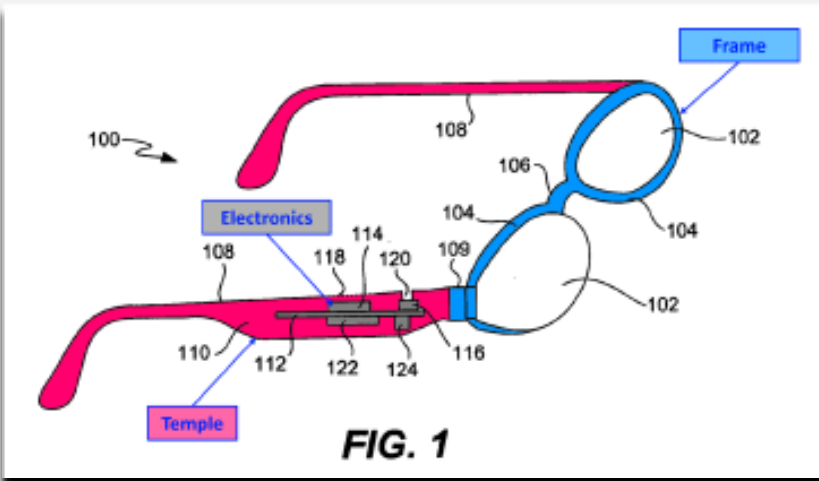
(Ex. 1001, Claim 19)

Ground 5: Claims 3, 21

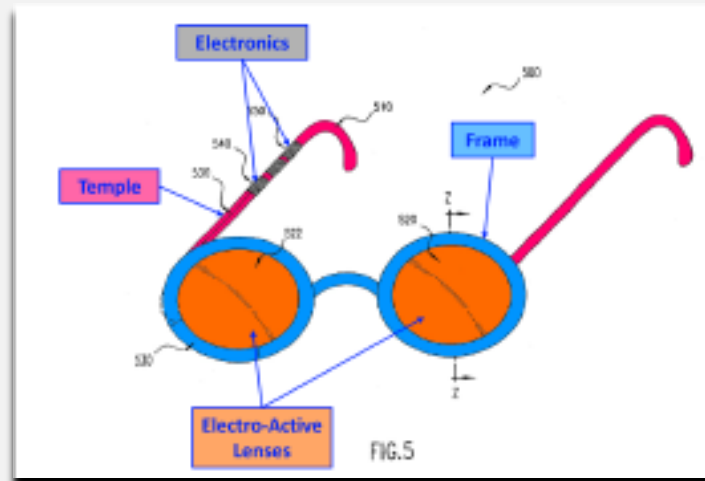
Dependent Claims 3 and 21 – Flex Circuit

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

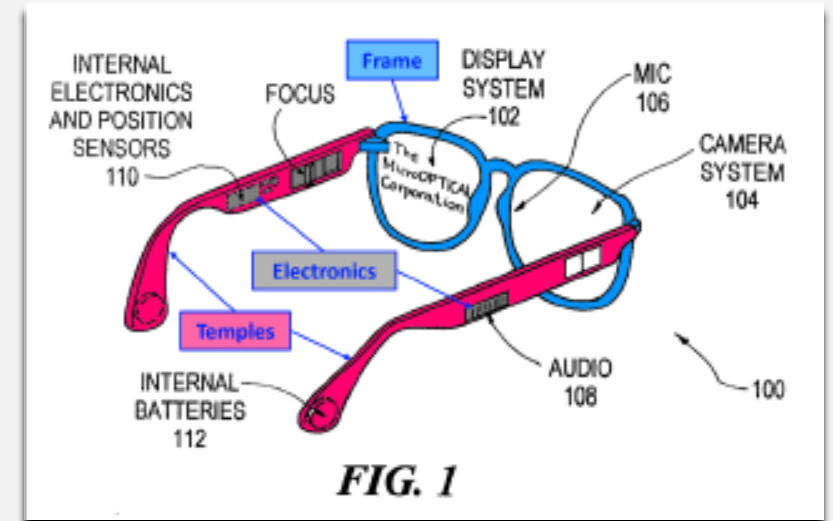
Ground 5:



Howell-596

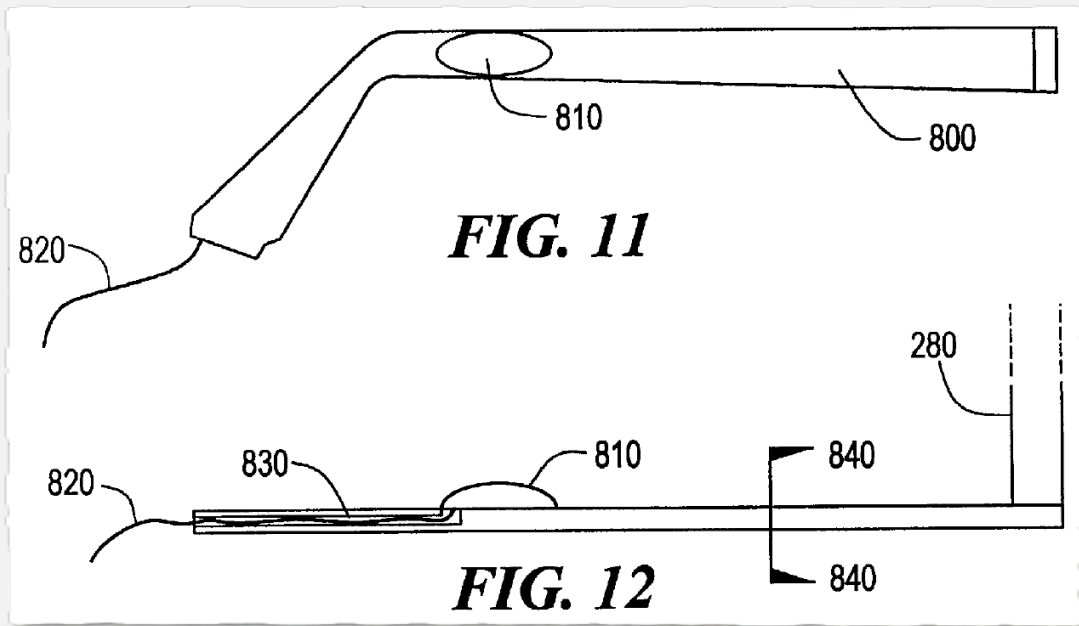


Blum-741



Spitzer

No Dispute That Spitzer Discloses Flex Circuit



Ex.1007, Figs. 11, 12

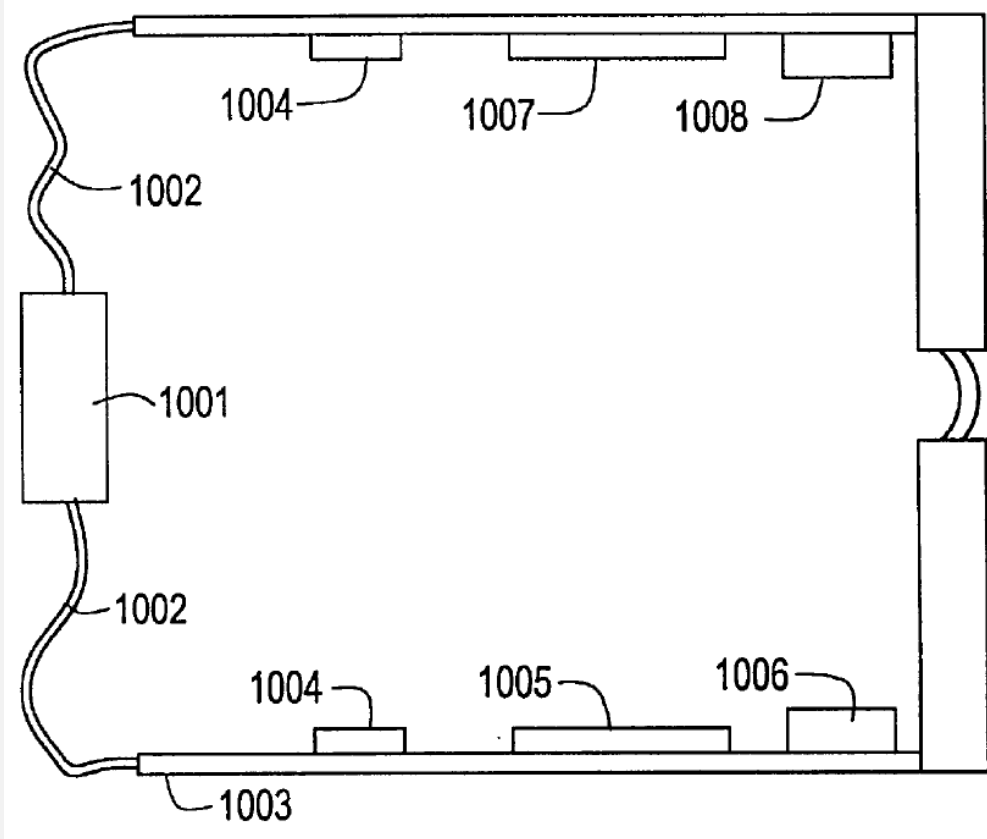
best fit. The transducer is in communication with the rest of the system through leads 820 which may extend through a cavity 830 within the temples (FIG. 12). The leads may be made from flexible stranded insulated wire, flexible coaxial cable, or flexible circuitry based on Kapton or other polymeric material. By using flexible material, the position of the transducer may be adjusted without strain to the leads.

Ex.1007, 7:44-60

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 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.*)

POR at 13-14

No Dispute That Spitzer Discloses Flex Circuit



Ex.1007, Fig. 20

when combined with the appropriate circuitry. FIG. 20 illustrates a system with a plug-in module 1001 located on a strap 1002 behind the head. The strap may contain within it batteries, electronic circuits, and wires and may also be fitted to hold the glasses in position in the conventional manner. The strap may be flat if it contains Kapton flex circuitry, or it may have a rectangular or other cross section. The glasses may be fitted with audio transducers 1004, circuitry is too large for integration in the eyeglass frame, and is also 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.

Ex.1007, 9:55-10:4

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.*)

POR, 14

Petition Provides Motivations to Use Flex Circuit

- **Spitzer: flex circuit reduces strain on the leads.** Ex.1007, 7:56-60.
- **Flat cross-section advantageous where space is limited (in the temple).** *Id.* 9:60-61.
- **Flex circuits were commonly used with reasonable expectation of success.**
- **Simple addition of a known element to obtain predictable results.**
- **Use of a known technique to improve a similar device in the same way.**

Flex Circuit Not Required To Be The Most Desirable Option



"[Federal Circuit] case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention."

Novartis Pharm. Corp. v. West-Ward Pharm. Int'l Ltd., 923 F.3d 1051, 1059 (Fed. Cir. 2019) (citing *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004)).

PO's Expert Admitted That Flex Circuits Were A Viable Option

Q What is a flex circuit?

A It's a device to connect electrical components that enables flexure.

Q Would a POSITA have been familiar with flex circuits prior to 2006?

A Generally, yes.

Q Were flex circuits commonly used in the electronic arts prior to 2006?

A I don't know about commonly, but they were understood as a viable option.

Ex.1024, 64:15-65:2 (emphasis added)

Both Howell-596 and Spitzer Disclose Wires and PCBs

Howell-596

detection system **1500**. The various electrical components can be **wire bonded** onto the substrate **1502**. For example, a SiC or GaN phototransistor (or photodiode) can serve as at least part of a UV sensor and be **wire bonded** onto the substrate **1502** or other electrical component. The UV detec-

Ex.1003, [0184] (emphasis added)

optical sensor. The optical sensor is coupled to the UV detection system **2102** via one or more **electrical wires** **2106**.

Ex.1003, [0205] (emphasis added)

Spitzer

as previously described. In such a case, this multiplexer **integrated circuit can be mounted on Kapton flexible circuitry which can connect to the other circuits** in the eyeglasses, or it may be part of an MCM. Additionally, a

Ex.1007, 8:41-65 (emphasis added)

Increased Cost is Unsupported and Irrelevant



"[T]he law does not exclude from an obviousness determination solutions which are more complex and/or expensive."

Polaris Wireless, Inc. v. Trueposition, Inc., IPR2013-00323, Paper 62 (Final Written Decision) at 36 (P.T.A.B. Nov. 3, 2014), aff'd, 622 F. App'x 915 (Fed. Cir. 2015).



Arguing that prior art references "would not be combined by businessmen for economic reasons" is not relevant to obviousness.

Orthopedic Equip. Co., Inc. v. United States, 702 F.2d 1005, 1013 (Fed. Cir. 1983)

PO and Its Expert Agree Distributing Parts is Advantageous

not discussing Howell-596 at all. (Reply, 6 (*citing* EX-1024, 45:11-46:12).) In identifying *the challenges* encountered by the prior art (EX-1002, ¶ 27), Dr. Oliver explained that the prior art had struggled to achieve “robust placement” of electronics in eyewear—specifically, creating electronic eyewear that was both functional and aesthetically appealing. (EX-1024, 45:11-46:12.) Petitioner’s poorly constructed

PO Sur-Reply, 7

Q And you specifically used the phrase “robust placement.”

What's meant by "robust placement"?

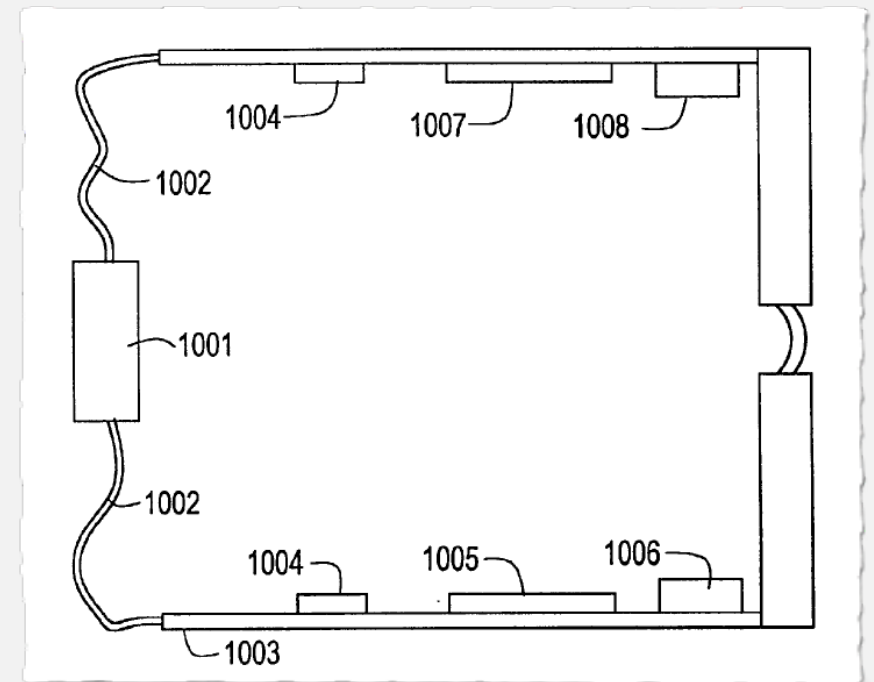
A Placement that is functional yet aesthetically pleasing. So it might involve distributing the electronics through the eyewear in a way that is, again, aesthetically pleasing but functionality and relatively reasonable to manufacture at a competitive price.

Ex.1024, 46:6-12

Spitzer's Strap Is An Additional Example Of Flex Circuitry

when combined with the appropriate circuitry. FIG. 20 illustrates a system with a plug-in module 1001 located on a strap 1002 behind the head. The strap may contain within it batteries, electronic circuits, and wires and may also be fitted to hold the glasses in position in the conventional manner. The strap may be flat if it contains Kapton flex circuitry, or it may have a rectangular or other cross section.

Ex.1007, 9:57-61 (highlighting added)



Ex.1007, Fig. 20

POSITA Would Have Creativity Not Bodily Incorporation



"A person of ordinary skill in the art is also a person of ordinary creativity, not an automaton."

KSR Int'l v. Teleflex Inc., 550 U.S. 398, 421 (2007)



"The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference."

Allied Erecting v. Genesis, 825 F.3d 1373, 1381 (Fed. Cir. 2016)

PO's Non-analogous Art Arguments Fail

PO argues that the analogous art standard is "irrelevant"

Second, both cases are irrelevant here, since both addressed the sufficiency of a petitioner's showing that the prior art references were analogous to the challenged patent, as required for a Section 103 ground. *Sanofi-Aventis*, 66 F.4th at 1380; *Corephotonics*, 84 F.4th at 1007.

Contrary to Petitioner's argument, whether prior art references are in the same field or share the same goals may be directly relevant to whether a POSITA would have had reason to combine their teachings. *Polygroup*, 759 Fed. App'x. at 942 (holding different fields of inventions illustrated that there was no motivation to combine); *Securus*, IPR2015-00155, Paper 30 at 17 (holding a POSITA would not have

PO Sur-Reply, 8.

Case cited by PO found that references were NOT analogous art



Polygroup argues that none of the Board's findings above are supported by substantial evidence. We disagree. . . . Substantial evidence supports the Board's finding that Jumo is not **analogous art**. Because "[g]enerally, a skilled artisan would only have been motivated to combine *analogous art*," *In re Ethicon, Inc.*, 844 F.3d at 1349, we also find that substantial evidence supports the Board's determination that Polygroup failed to establish a motivation to combine Miller with Otto and Jumo.

Polygroup Ltd. MCO v. Willis Elec. Co., 759 Fed. Appx. 934, 941-42 (Fed. Cir. 2019).

Ground 9: Claims 3, 21

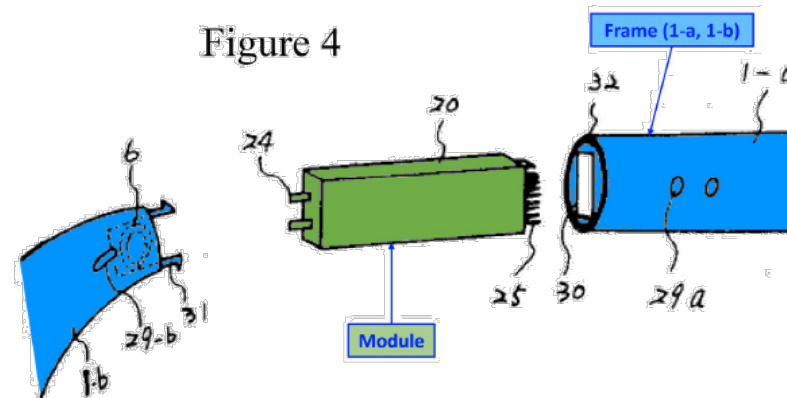
Independent Claims 1 and 19 of the '483 Patent

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.

(Ex. 1001, claim 1)

Petitioner Identified the Sealed Module in the Prior Art

Hattori-912 discloses an eyewear frame having a “hollow part 30” in which electronic components are embedded. Ex.1006, 64. Hattori-912 further discloses that the hollow part 30 is sealed by a “[w]aterproof ring 32.” *Id.* Thus, Hattori-912 discloses a sealed moisture resistant module (contents sealed in the hollow part 30 by waterproof ring 32). Ex.1002 ¶177. Because hollow part 30 is “provided ... in frame 1-a,” the contents of the hollow part 30 are attached to the frame. Ex.1006, 64; Ex.1002 ¶177. Figure 4 shows this:



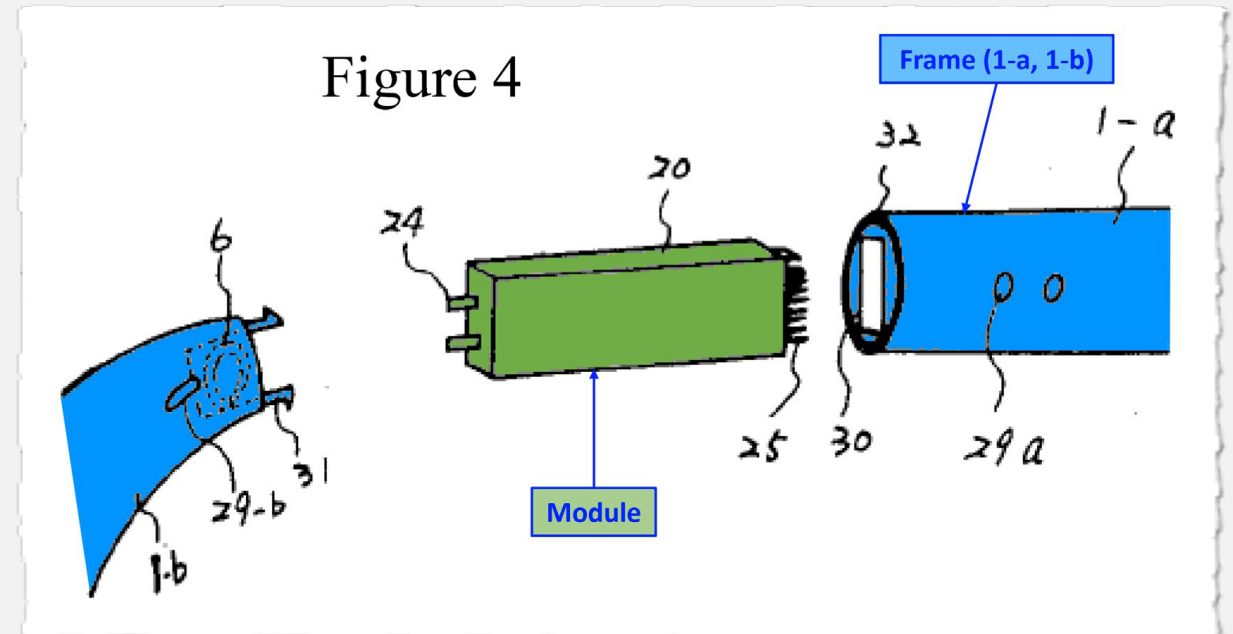
Ex.1006, Fig. 4; Ex.1002 ¶177.

Pet., 55

Blum-741 and Hattori Diclose “Sealed Moisture Resistant Module”

Further, Figure 4 shows another example of embodiment of the integration of semiconductor integrated circuit 20. In this example, hollow part 30 is provided along the longitudinal direction in frame 1-a, and semiconductor integrated circuit 20 is embedded into this part, while battery 6 is embedded in frame 1-b, and frame 1-a and frame 1-b have a structure in which they may be locked by biting part 31. If necessary, control switch 29-a and battery on-off switch 29-b may be provided. Waterproof ring 32 is packed between frame 1-a and frame 1-b.

Ex. 1006, 8.



Ex. 1006, Fig. 4.

PO Contradicts Its Own Infringement Contentions

PO argues:

“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” (POR at 25)

“[i]ntegrated semiconductor circuit 20 is clearly not ‘a sealed moisture resistant module’ because [] any sealing in Hattori-912 is achieved by waterproof ring 32.” (POR at 26)

PO’s Infringement Contentions:

The Accused Products literally include “a sealed moisture resistant module attached to the frame.”

For instance, the Accused Products are “resistant to water splashes.” (See <https://fcc.report/FCC-ID/2AYOA-4002/5271617.pdf> at 3.) As another example, the Accused Products include various modules sealed within the frame as shown in the images below:

4

Protected against splashing water



Water splashed against the enclosure from any direction shall have no harmful effects

(See <https://www.iec.ch/ip-ratings>)



Ex. 1023, 6-19 (highlighting added).

PO Contradicts Its Own Infringement Contentions



"[A] patent may not, like a 'nose of wax,' be twisted one way to avoid [unpatentability] and another to find infringement."

Amazon.com, Inc. v. Barnesandnoble.com, Inc., 239 F.3d 1343, 1351 (Fed. Cir. 2001).



"Furthermore, we agree with [Appellant] that this [infringement] argument cannot stand in light of [Cross Appellant]'s arguments of no anticipation by Wright."

CommScope Techs. LLC v. Dali Wireless Inc., 10 F.4th 1289, 1299 (Fed. Cir. 2021).

Experts Agree Protective Films Provide Moisture-Resistant Seal

Q: Would a POSITA have considered prior to 2006 using a conformal layer to protect electronics in eyewear from water? [objection omitted]

A: It may be an element. It may not be sufficient. It could be -- it could be used but it may not serve the waterproof - fully waterproof necessity.

. . .
conformal layers are a very common way to protect electronics from many different things, and vapor and water is one of those things it can protect . . .

Ex. 1024, 32:22-34:16 (highlighting added).

“[a] person of ordinary skill 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.”

Ex. 1002, ¶178 (highlighting added).

Petition Provided Motivations to Combine

Motivations to combine Blum-741 and Hattori-912:

- **Sealed module protects each of the components from moisture, dirt, and chemicals.**
- **Sealed module allows the system to be easily removable and swappable for maintenance, cleaning and easier manufacturing.**
- **Hattori display can provide time, date, and image information.**
- **Sealed modules were well-known and used with reasonable expectation of success.**
- **Simple addition of a known element to obtain predictable results.**
- **Use of a known technique to improve a similar device in the same way.**

PO's Non-Analogous Art Arguments Fail

PO argues:

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-

PO Response, 27.



“When more than one prior art reference is used as the basis of an obviousness rejection, it is ***not required that the references be analogous art to each other.***”

Sanofi-Aventis Deutschland GmbH v. Mylan Pharms. Inc., 66 F.4th 1373, 1380 (Fed. Cir. 2023) (emphasis added).

Grounds 2 and 8: Claims 13 and 16

Claims 13 and 18

Claims	Disputed Feature
13, 32	"wherein the module is <i>hermetically sealed</i> "
16, 35	"wherein the module is <i>substantially wear resistant</i> "

The '483 Patent Equates Hermetic Seal to Waterproofing

FIGS. 1 and 2 illustrate two possible ways of configuring the electronics to fit them neatly into the frame. Although a cylinder and block arrangement have been specifically illustrated, other dimensional shapes may alternatively be used to form the module that will be preferably placed in a cavity and perhaps molded therein to form an electronic frame component that is hermetically sealed to prevent water from contacting the electronics.

Ex. 1001, 6:47-53 (highlighting added).

recharge the battery without direct contact. In this way, the module may be hermetically sealed while still allowing the battery to be recharged without breaking a moisture resistant seal. A tilt sensor 1070 is also attached to the electronic

Ex. 1001, 9:15-18 (highlighting added).

Hermetic Sealing Was Well Known and Beneficial

Dr. Feland:

person of ordinary skill in view of Howell-596. Moreover, even if a hermetically sealed module were not taught or suggested by Howell-596, a person of ordinary skill in the art would have known to hermetically seal the module for a variety of reasons, for example, to keep the components clean, dust-free, etc.

Ex. 1002, ¶103.

The '483 Patent Does Not Explain How to Hermetically Seal



"[T]he Board's observation that appellant did not provide the type of detail in his specification that he now argues is necessary in prior art references supports the Board's finding that one skilled in the art would have known how to implement the features of the references."

In re Epstein, 32 F.3d 1559, 1568 (Fed. Cir. 1994).



"This claim is relevant because it describes Abbott's own view of the ordinary skill in the art at the time it filed the application that led to the '190 patent and it does so not by what the '190 patent discloses but by what it does not disclose."

Abbott Labs. v. Andrx Pharms., Inc., 452 F.3d 1331, 1341 (Fed. Cir. 2006).

The '483 Patent Does Not Explain How to Hermetically Seal

FIGS. 1 and 2 illustrate two possible ways of configuring the electronics to fit them neatly into the frame. Although a cylinder and block arrangement have been specifically illustrated, other dimensional shapes may alternatively be used to form the module that will be preferably placed in a cavity and perhaps molded therein to form an electronic frame component that is **hermetically sealed** to prevent water from contacting the electronics.

Ex. 1001, 6:47-53 (highlighting added).

recharge the battery without direct contact. In this way, the module may be **hermetically sealed** while still allowing the battery to be recharged without breaking a moisture resistant seal. A tilt sensor 1070 is also attached to the electronic

Ex. 1001, 9:15-18 (highlighting added).

transceiver or a receiver. The module preferably houses any of the aforementioned electrical components in a substantially water-proof and wear resistant/moisture resistant environment and is preferably **hermetically sealed**. In the event of a

Ex. 1001, 10:47-50 (highlighting added).

The Prior Art Discloses Wear Resistant Module

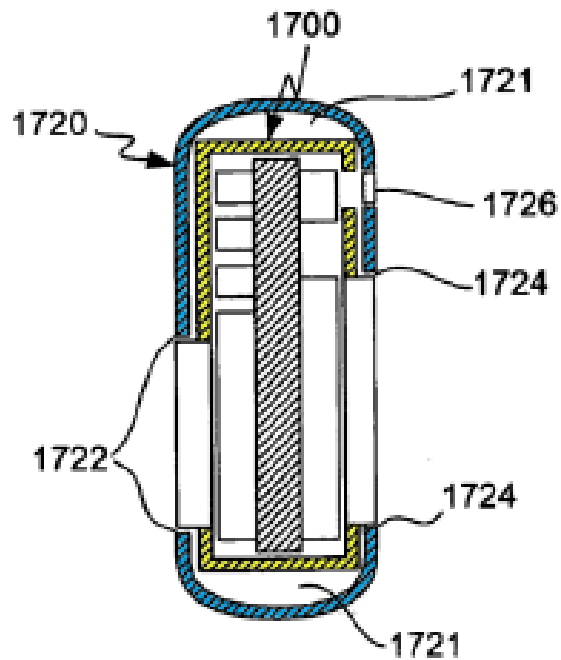


FIG. 17B

Engineering Dictionary), 613. Howell-596 discloses this limitation because it discloses that “[t]he module housing 1700 protects the module.” Ex.1003 (Howell-596) ¶[0195]. A person of ordinary skill 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. Accordingly,

Ex. 1002, ¶ 104.

The '483 Patent Does Not Describe Wear Resistance

The specification of the '483 patent mentions "wear resistance" only once and does not explain it.

The module may further include one or more of the following: a manual switch (for example, a touch button, photo-detector, motion detector, capacitive touch sensor), a controller and/or micro-processor, a power source (for example, a small battery), a sensor (for example, one or more miniature or micro tilt switches, accelerometer, micro gyro, range finder, view detector, imager), an antenna, a transmitter, a transceiver or a receiver. The module preferably houses any of the aforementioned electrical components in a substantially water-proof and wear resistant/moisture resistant environment and is preferably hermetically sealed. In the event of a malfunction of one or more of the electronic components housed within the module, the module can be replaced without having to repurchase a complete pair of new electronic eyewear (lenses and frames) or just the frames. It should be pointed out that in certain applications, a single inventive electronic module may be sufficient, and in others, two or more modules may be needed. The embodiments described in FIGS. 12 and 13 allow for modification of any number of existing frames that otherwise were not originally designed to support electronics for driving electro-active lenses.

Ex. 1001, 10:40-59 (highlighting added).

Ground 3: Claim 19

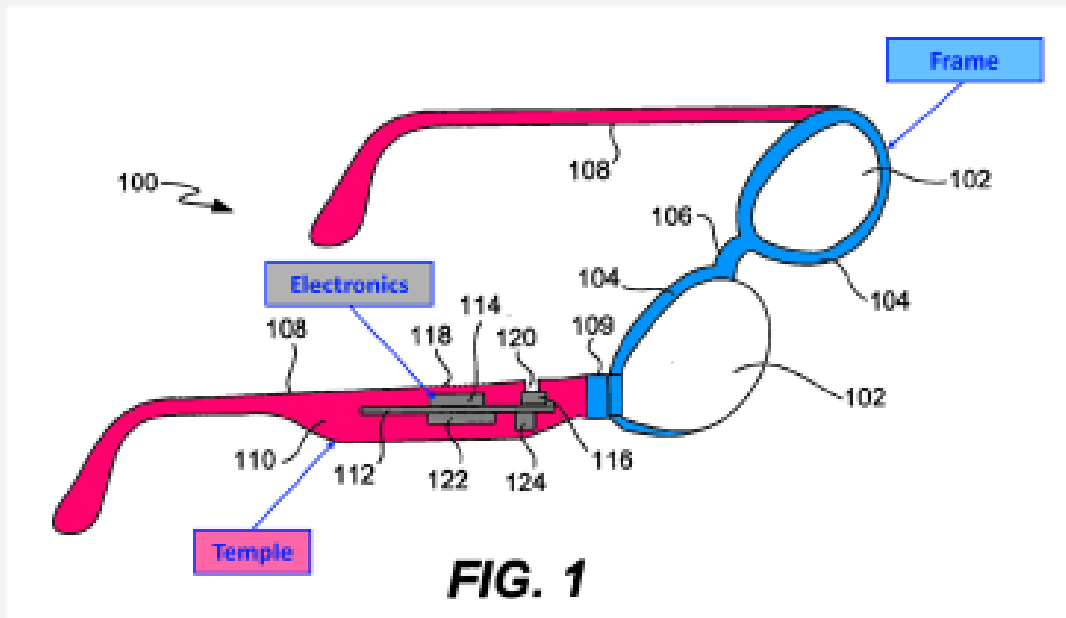
Independent Claim 19 of the '483 Patent

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.

(Ex. 1001, Claim 19)

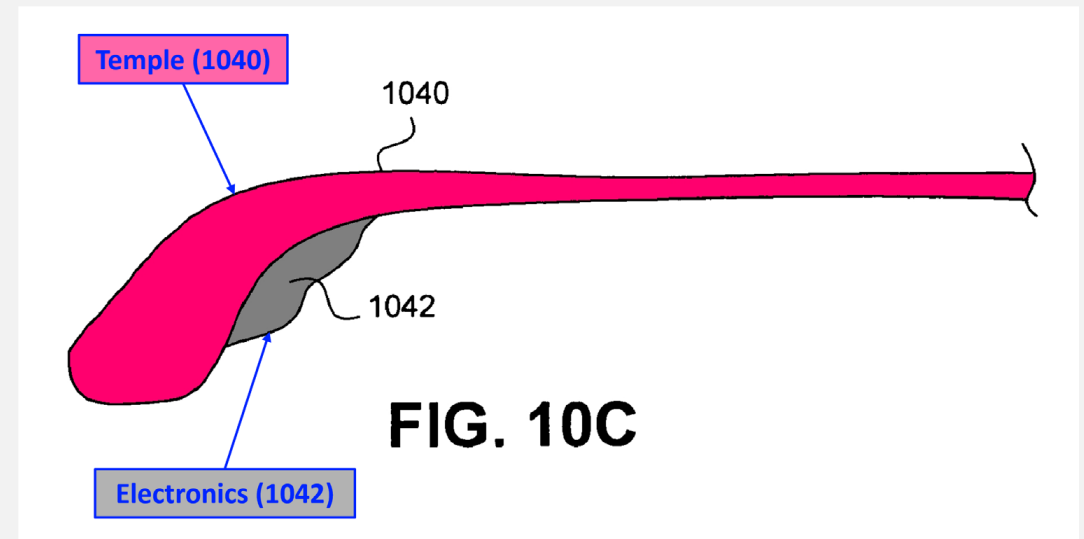
Howell-596 and Howell-833 Render Obvious Claim 19

Howell-596



(Ex. 1003, Fig. 1) (highlight added)

Howell-833



(Ex. 1004, Fig. 10C) (highlight added)

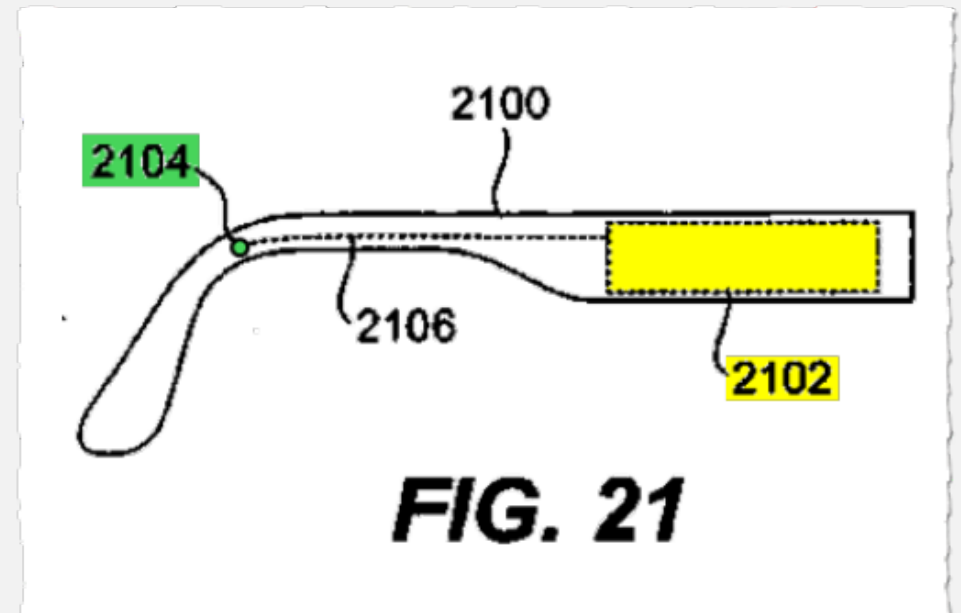
Howell-596 Itself Discloses Part of the Module Behind the Ear

PO argues:

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

PO Response, 36 (highlighting added).

But Howell-596 Discloses:



Ex.1003, Fig. 21 (highlighting added)

PO Tries to Argue Against the Prior Art's Explicit Disclosure

POR:

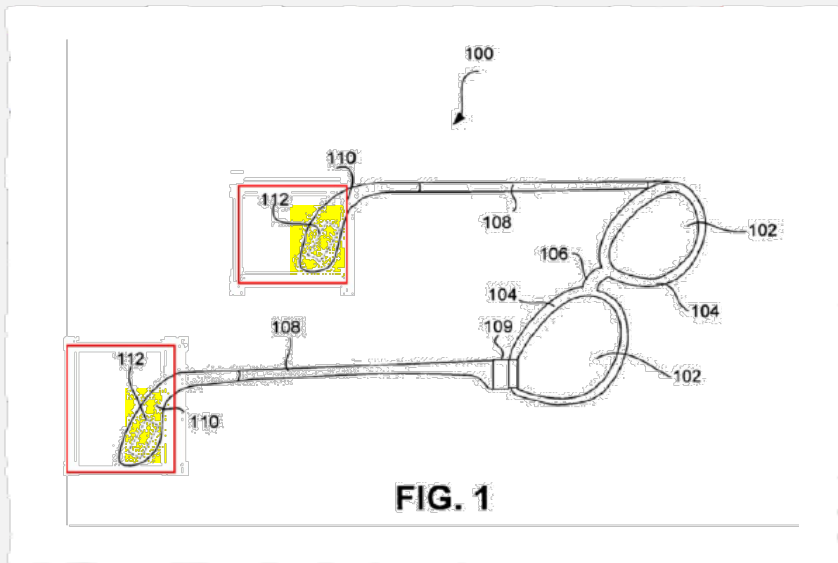
Decl. at ¶109.) Placing Howell-596's UV detection system, including the sensor, behind the user's ear would introduce various potential obstructions not present at the front of a user's face. (EX-2019, Oliver Decl. at ¶110.) For example, longer hair would likely block the UV sensor, significantly reducing 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.)

PO Response, 35 (highlighting added).

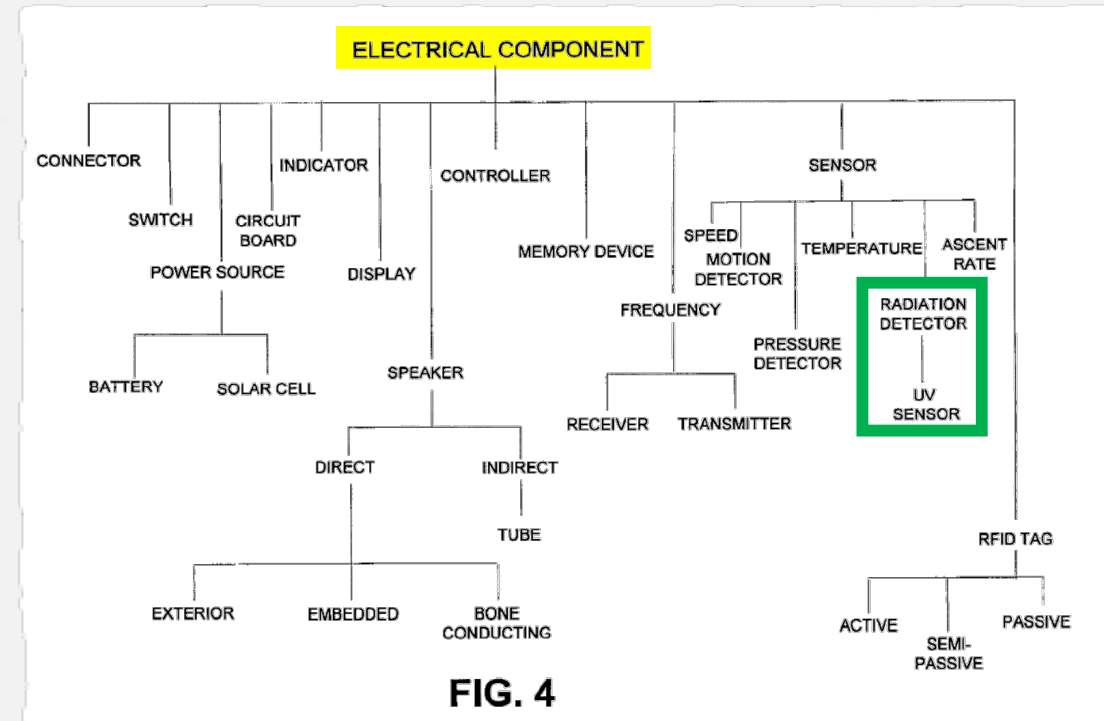
Howell-833 Teaches Placing UV Detector Behind Ear

By having one or more **electrical components 112** in one or more of the temple arrangements **110**, electrical capabilities can be provided to the glasses **100** without burdensome impact to the design of other parts of the frames. Moreover, by

Ex.1004, 6:17-20 (highlighting added)



Ex.1004, Fig. 1 (highlighting added)



Ex.1004, Fig. 4 (highlighting added)

Behind The Ear Positioning Is Also“Obvious to Try”

'483 Patent Background:

Various electronic components have been disclosed in prior art whereby said components are located in the side of one or both temples, **in or on the end piece of the temple**, in or on the eyeglass frame's bridge, in or on the lens or lenses, or affixed to the hinge or hinges that attach the frame's temple to the frame's front. While these approaches allow for enabling electronic frames and electro-active lenses, to date there has been no way for this to occur while minimizing the number of frame part SKUs, and maintaining the aesthetics of the frame.

Ex.1001, 2:18-26 (highlighting added)

Ground 8: Claim 19

PO Merely Repeats the Same Argument Raised for Claim 3

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.

POR, 37.

Grounds 3 and 8: Claims 32, 35

PO Merely Repeats the Same Argument Raised for Claim 19

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 35 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.

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PO Disputes Only Claims 3, 13, 16, 19, 21, 32, and 35

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Disputed Grounds

Ground	References	35 U.S.C. §	Challenged Claims	Claims Disputed by PO
1	Howell-596	102	1, 9-10, 14-15, 18	None
2	Howell-596	103	1-2, 6-10, 13-16, 18	13, 16
3	Howell-596 and Howell-833	103	19-20, 24-28, 31-35, 37	19, 32, 35
4	Howell-596, Howell-833, and Blum-741	103	4-5, 7, 17, 22-23, 25, 36	None
5	Howell-596, Howell-833, Blum-741, and Spitzer	103	3, 21	3, 21
6	Howell-596, Howell-833, and Ogren	103	11, 29	None
7	Howell-596, Howell-833, and Jannard-868	103	12, 30	None
8	Blum-741 and Hattori-912	103	1-2, 4-10, 13-20, 22-28, 31-37	13, 19, 32, 35
9	Blum-741, Hattori-912, and Spitzer	103	3, 21	3, 21
10	Blum-741, Hattori-912, and Ogren	103	11, 29	None
11	Blum-741, Hattori-912, and Jannard-868	103	12, 30	None