

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

October 6, 2025

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

IPR2024-01069 (Patent 10,613,355)

Luxottica v. e-Vision
IPR2024-01069
Luxottica Ex. 1036

U.S. Patent No. 10,613,355

United States Patent Blum et al.

(10) Patent No.: US 10,613,355 B2
(45) Date of Patent: Apr. 7, 2020

(54) MOISTURE-RESISTANT EYE WEAR

(71) Applicant: E-Vision, LLC, Sarasota, FL (US)

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(73) Assignee: e-Vision, LLC, Sarasota, FL (US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: 13/890,809

(22) Filed: May 9, 2013

(65) Prior Publication Data
US 2013/0250233 A1 Sep. 26, 2013

Related U.S. Application Data
(63) Continuation-in-part of application No. 13/587,645,
filed on Aug. 16, 2012, now abandoned, which is a
(Continued)

(51) Int. Cl.
G02C 11/00 (2006.01)
G02B 27/01 (2006.01)
(Continued)

(52) U.S. Cl.
CPC: G02C 11/10 (2013.01); G02B 27/017
(2013.01); G02C 7/083 (2013.01); G02C
7/101 (2013.01);
(Continued)

(58) Field of Classification Search

CPC: G02C 11/06; G02C 11/10; G02C 11/00;
G02C 11/04; G02C 7/083; G02C 7/101
(Continued)

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(Continued)

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tional Microphones," Feb. 27, 2009, pp. 1-4, URL: http://hearingmojo.com/blog-mt/blog-mt/2009/04/varibel_hearingaid_glasses_dou.html.

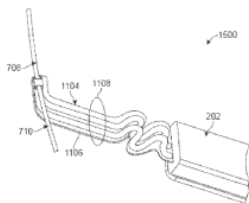
(Continued)

Primary Examiner — Ricky L. Mack
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(57) ABSTRACT

Eyewear including an optical functional member, control electronics, and a sealed electrical connective element connecting the electronics to the optical functional member. The connective element can directly connect the electronics to the optical functional member, or can connect through an intermediate contact, e.g., a plug-and-receptacle. The connective element can be routed from the electronics, around a rimlock of the eyewear to the optical functional member. The connective element can be a conductive compressible member, such as conductive rubber. In some embodiments, the connective element can be a multiconductor cable.

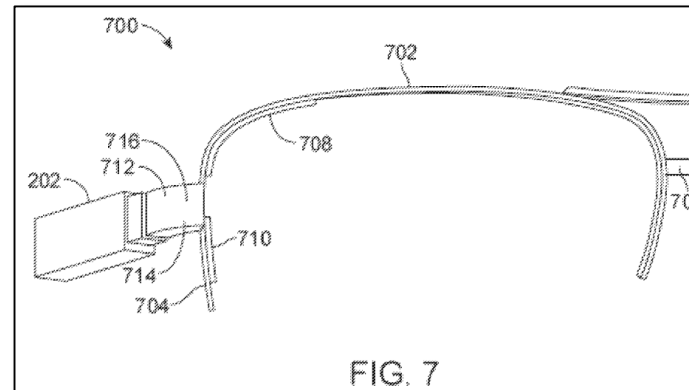
21 Claims, 26 Drawing Sheets



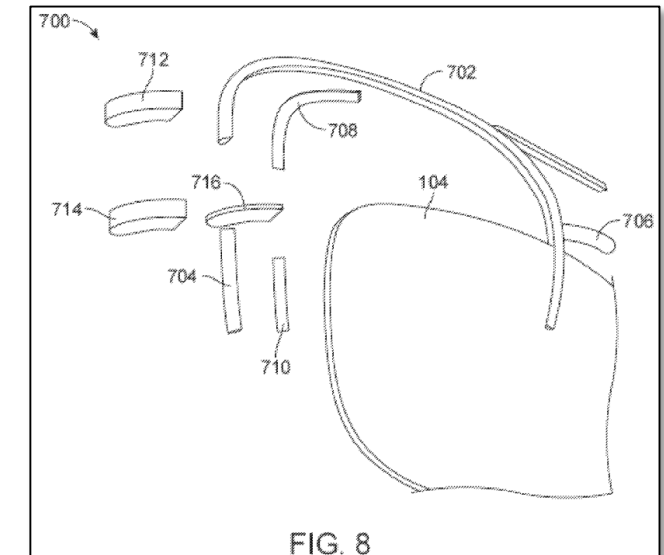
BACKGROUND

The present subject matter relates to various types of eyewear including electronic functional members, including, for example, electronic focusing eyeglasses, electro-active eyeglasses, electronic eyewear providing 3D capabilities, etc.

Ex. 1001, 2:16-22



Ex. 1001, Fig. 7



Ex. 1001, Fig. 8

Independent Claim 1 Of The '355 Patent

1. An eyewear system comprising:
an eyewear frame;
an electronics assembly comprising electronic components configured to control an electrical functional member;
a capacitive touch switch coupled to at least one electronic component in the electronics assembly;
at least one electrical connective element electrically connected to the electronic assembly and the electrical functional member; and
a conformal layer over the electronic assembly to seal the electronic components;
wherein the conformal layer is moisture proof and seals electrical connections of the electronic component;
wherein the conformal layer is disposed in an enclosure of the eyewear frame;
wherein the eyewear frame comprises a temple; and
wherein the electronic assembly is enclosed in the temple.

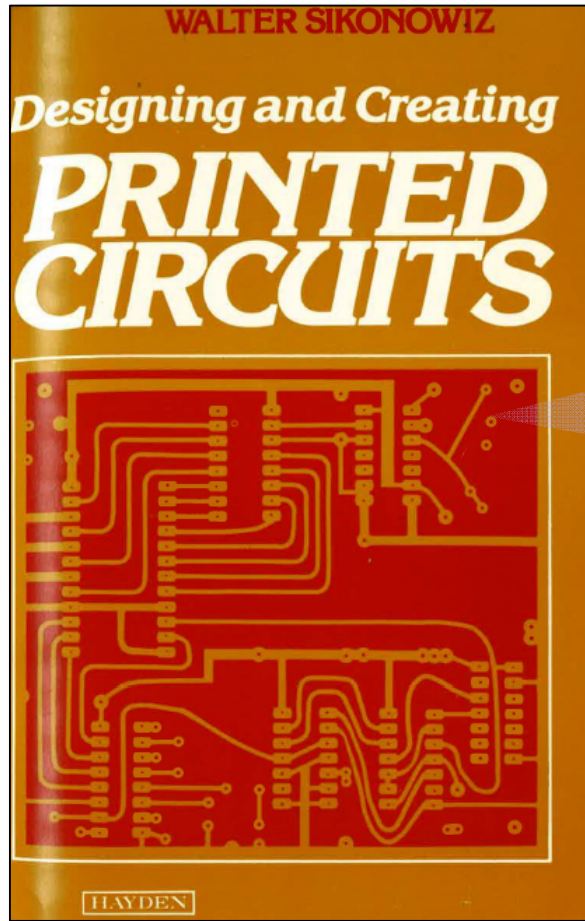
Ex. 1001, claim 1 (highlight added)

Summary Of Unpatentability Grounds

Ground	References	Basis	Challenged Claims
1	Howell-719 and Sikonowiz	§ 103	1, 3–13
2	Howell-719, Sikonowiz, Thomas, and Vogt	§ 103	4
3	Howell-719, Sikonowiz, and Eichelberger	§ 103	13
4	Howell-719, Sikonowiz, and Howell-158	§ 103	14–21
5	Howell-719, Sikonowiz, and Blum-130	§ 103	14–21
6	Blum-130 in view of Sikonowiz and Howell-719	§ 103	1–21
7	Blum-130 in view of Sikonowiz and Eichelberger	§ 103	13, 14, 18

Sikonowiz Is Analogous Art

Sikonowiz Teaches Conformal Coating



Conformal Coating

The purpose of a conformal coating is to cover a printed-circuit assembly and protect it from environmental hazards such as moisture, dirt, and chemicals. Of these, moisture protection is probably of the greatest general significance. Ideally, a conformal coating covers not

Ex. 1005, 135-136

Sikonowiz Is Analagous Art

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

would not have found a capacitive switch operable in Blum-130 for many reasons, including that such capacitive switch would be an inappropriate mechanism by which to implement the "continuous variance" functionality or the on/off moveable "switch positions" required by Blum-130. (§ II.B, *supra*; EX-1006, 28:37-58.)

Accordingly, Eichelberger is non-analogous art and a POSITA would have lacked the motivation to combine the prior art teachings.

III. CLAIM 1 IS PATENTABLE

A. Ground 1: Claim 1 Is Patentable Over Howell-719 and Sikonowiz

Petitioner's ground 1 argument for claim 1 rests on three faulty positions articulated again in its reply. (Reply, 1-9). Claim 1 (and its dependents) are patentable over ground 1 because Petitioner has not shown motivation to combine Howell-719 and Sikonowiz.

First, Petitioner's reply attempts to map Sikonowiz as analogous art to the '355 patent. (Reply, 2-5.) However, Sikonowiz fails both prongs of the analogous art test. Sikonowiz is neither from the same field of endeavor as the claimed invention nor "reasonably pertinent to the particular problem with which the inventor is involved." *Sanofi-Aventis*, 66 F.4th at 1377 (*citing In re Bigio*, 381 F.3d at 1325, with approval).)

Sikonowiz is not from the same field of endeavor because it does not concern eyewear. The challenged patent, including the "function[]" and structure of the claimed invention" informs the applicable field of endeavor. *Airbus S.A.S.*, 941 F.3d at 1380

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patent. (Reply, 2-5.) However, Sikonowiz fails both prongs of the analogous art test.

Sikonowiz is neither from the same field of endeavor as the claimed invention nor

"reasonably pertinent to the particular problem with which the inventor is involved."

Sanofi-Aventis, 66 F.4th at 1377 (*citing In re Bigio*, 381 F.3d at 1325, with approval).)

Sikonowiz is not from the same field of endeavor because it does not concern eyewear. The challenged patent, including the "function[]" and structure of the claimed

Sur-Reply, 14

The Scope of Analogous Art is Broad



“Two separate tests define the scope of analogous prior art: (1) whether the art is from the **same field of endeavor**, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is **reasonably pertinent** to the particular problem with which the inventor is involved.”

In re Bigio, 381 F.3d 1320, 1325 (Fed. Cir. 2004)

The Scope of Analogous Art is Broad



"The Supreme Court's decision in *KSR* ... directs us to construe the scope of analogous art broadly[.]"

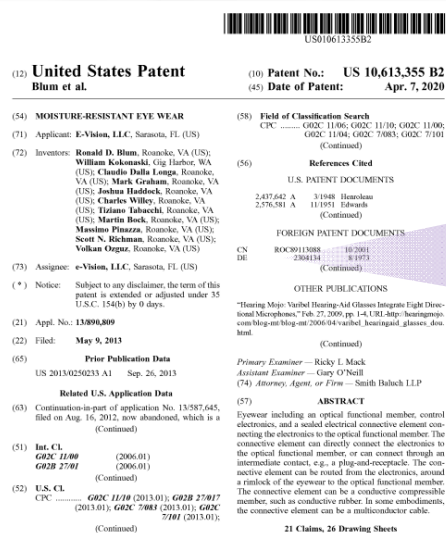
Wyers v. Master Lock Co., 616 F.3d 1231, 1238 (Fed. Cir. 2010).



"[I]t is necessary to consider the reality of the circumstances—in other words, common sense—in deciding in which fields a person of ordinary skill would reasonably be expected to look[.]"

In re Bigio, 381 F.3d 1320, 1326 (Fed. Cir. 2004).

Sikonowiz Is From The Relevant Field Of Endeavor



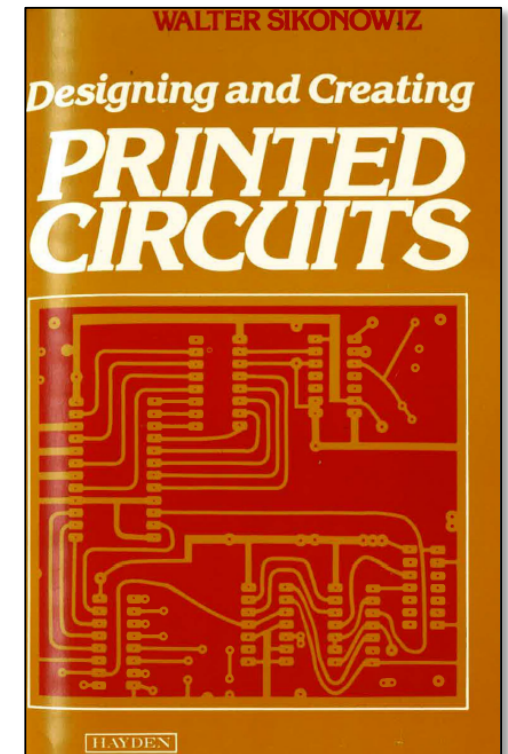
BACKGROUND

The present subject matter relates to various types of eyewear including electronic functional members, including, for example, electronic focusing eyeglasses, electro-active eyeglasses, electronic eyewear providing 3D capabilities, etc.

Ex. 1001, 2:18-22 (highlighting added)

The references are analogous art because they are from the same field as the '355 patent, e.g., eyewear and/or consumer electronics. Ex. 1002 ¶25; Ex. 1001, Abstract; *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016).

Petition, 18



Ex. 1005

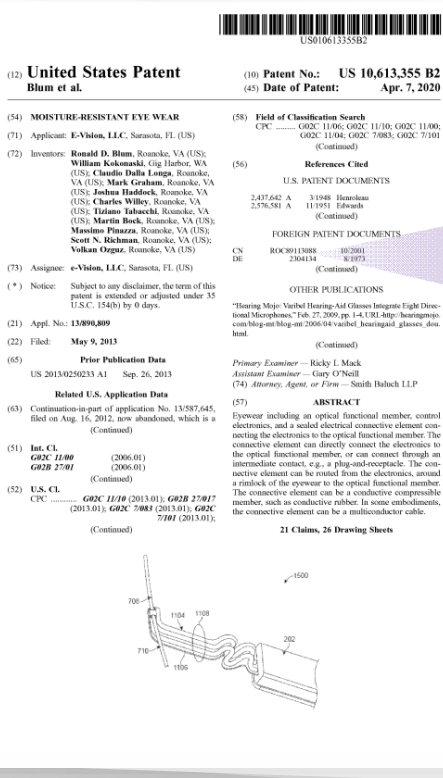
Sikonowiz Is Reasonably Pertinent



“[R]eferences are ‘reasonably pertinent’ only if ‘a person of ordinary skill would reasonably have consulted those references and applied their teachings in seeking a solution to the problem that the inventor was attempting to solve.’”

Airbus S.A.S. v. Firepass Corp., 941 F.3d 1374, 1382 (Fed. Cir. 2019) (quoting *In re GPAC Inc.*, 57 F.3d 1573, 1578 (Fed. Cir. 1995)).

Sikonowiz Is Reasonably Pertinent



Patent Owner's Expert Confirms That Sikonowiz Is Reasonably Pertinent

Q Would a POSITA have considered a conformal coating as a solution to address the issue of high moisture and liquids in electronic eyewear prior to the '355 patent?

A Conformal layer is very common, in particular on printed circuit boards, to protect the electronics from any number of things. So wouldn't be surprised if others had attempted to use that to make moisture-resistant electronics, potentially in eyewear. Whether that's sufficient

Ex. 1034, 30:1-10 (highlighting added)

Q If a student approached you and asked you for resources about conformal coatings prior to 2006, what resources would you have directed the student to?

A There's many textbooks on creation of printed circuit boards and their protection. I think there's two in our exhibits. Well, Sikonowski [sic] is one of them but we provided

Ex. 1034, 48:4-12 (highlighting added)

Q Would a POSITA have considered prior to 2006 using a conformal layer to protect electronics in eyewear from water?

A A conformal later -- sorry.

MS. STONE: Objection, form.

A Conformal layers can protect from many different things: Chemical, abrasion, wear, vapor, but a conformal layer is a very standard application to printed circuit boards for many different protection needs.

Ex. 1035, 32:12-21 (highlighting added)

Patent Owner Misapplies *In re Bigio*

In re Bigio does not support Patent Owner's contention that Sikonowiz must reference eyewear to be in the same field of endeavor as the '355 patent. (See Sur-Reply 14-15).



“[T]he Board concluded that Flemming's toothbrush was in Bigio's field of endeavor because ***‘the structural similarities between toothbrushes and small brushes for hair would have led one of ordinary skill in the art working in the specific field of hairbrushes to consider all similar brushes including toothbrushes.’*** The Board thus correctly set the field of the invention by consulting the structure and function of the claimed invention as perceived by one of ordinary skill in the art.”



“Again emphasizing the correct ‘ordinary skilled artisan’ standard, the Board then observed that ***the toothbrush art could function as well for brushing facial hair***: ‘[W]e determine that it would have been readily apparent to one of ordinary skill in the art that Flemming's toothbrush may easily be used for brushing hair (e.g., human facial hair)[.]’”

In re Bigio, 381 F.3d 1320, 1326 (Fed. Cir. 2004)

A POSA Would Not “Immediately Dismiss” Sikonowiz

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. IPR2024-01069
Patent No. 10,613,355

PATENT OWNER'S SUR-REPLY TO PETITIONER'S REPLY

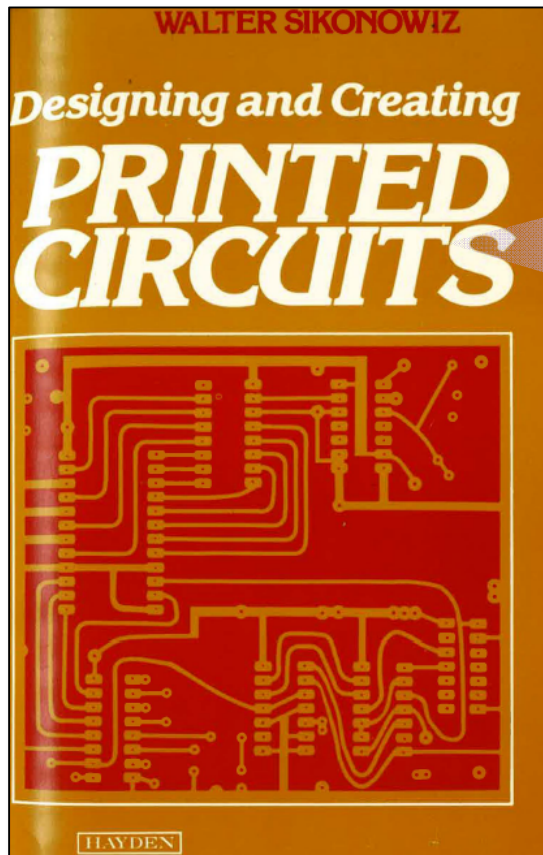
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Box 1450
Alexandria, VA 22313-1450

In its Sur-Reply, Patent Owner argues for the first time:

- “a POSITA would immediately dismiss [Sikonowiz’s] 1981 discussion of conformal coatings for bulky, cumbersome integrated circuit chips as outdated and irrelevant to the small-form-factor, sophisticated circuit designs demanded by consumer electronics.”

Sur-Reply, 1-2

Conformal Coatings Were Common In Eyewear in 2000s

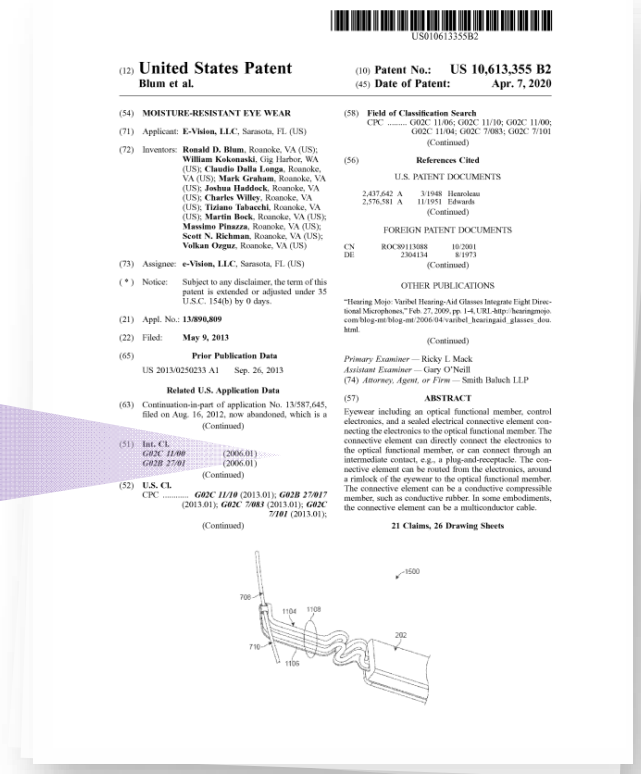


Conformal coatings may be applied by a variety of methods including vacuum deposition, dipping, or spraying. The first of these techniques is used with coatings deposited from the vapor phase. Dipping and spraying are employed with liquid conformal coatings, which require time to cure into hard, protective films. For printed-circuit applications, the most important coatings are epoxy, parylene, acrylic, polyurethane, and silicone. Of the five, only parylene is applied by vacuum deposition; the rest are dipped or sprayed.

Ex. 1005, 135-36 (highlighting added)

coating may generally be moisture proof or resistant. The conformal coating may have any suitable thickness, but is typically less than 1 mm thick, and more preferably less than 0.5 mm thick. The coating may comprise any suitable material, such as a brushed, spray or dip applied acrylic, urethane, silicone, or epoxy. It should be noted that com-

Ex. 1001, 27:5-10 (highlighting added)



Conformal Coatings Were Common In Eyewear in 2000s

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD
4
5 LUXOTTICA OF AMERICA, INC.,
6 Petitioner,
7 v.
8 E-VISION OPTICS, LLC,
9 Patent Owner.
10
11 IPR2024-01069
12 U.S. Patent No. 10,613,355
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14
15 REMOTELY CONDUCTED VIDEOTAPED DEPOSITION OF
16 JAMES OLIVER PHD
17 WEDNESDAY, JUNE 11, 2025
18 1:00 P.M. CDT
19
20 JOB NO.: 587934
21 PAGES: 1 - 60
22 REPORTED BY: KARISA EKENSEAIR, CCR RPR RMR RDR

Q Would a POSITA have considered a conformal coating as a solution to address the issue of high moisture and liquids in electronic eyewear prior to the '355 patent?

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Ex. 1034, 30:1-10 (highlighting added)

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MS. STONE: Objection, form.

A Conformal layers can protect from many different things: Chemical, abrasion, wear, vapor, but a conformal layer is a very standard application to printed circuit boards for many different protection needs.

Ex. 1035, 32:12-21 (highlighting added)

Conformal Coatings Were Common In Eyewear in 2000s

(12) United States Patent Blum et al.

(10) Patent No.: US 10,613,355 B2
(45) Date of Patent: Apr. 7, 2020

(54) MOISTURE-RESISTANT EYE WEAR

(71) Applicant: E-Vision, LLC, Sarasota, FL (US)

(72) Inventors: Ronald D. Blum, Roanoke, VA (US);
William Kolomaski, Gig Harbor, WA
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Scott N. Richman, Roanoke, VA (US);
Volkan Orguz, Roanoke, VA (US)

(73) Assignee: e-Vision, LLC, Sarasota, FL (US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: 13/890,809

(22) Filed: May 9, 2013

(65) Prior Publication Data
US 2013/0250233 A1 Sep. 26, 2013

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CPC: G02C 11/10 (2013.01); G02B 27/017
(2013.01); G02C 7/083 (2013.01); G02C
7/101 (2013.01);
(Continued)



(58) Field of Classification Search

CPC: G02C 11/06; G02C 11/10; G02C 11/00;
G02C 11/04; G02C 7/083; G02C 7/101
(Continued)

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tional Microphones," Feb. 27, 2009, pp. 1-4, URL: http://hearingmojo.com/blog-mt/blog-mt/2009/04/varibel_hearingaid_glasses_doc.html.

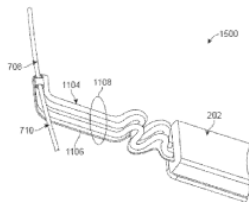
(Continued)

Primary Examiner — Ricky L. Mack
Assistant Examiner — Gary O'Neill
(74) Attorney, Agent, or Firm — Smith Baluch LLP

(57) ABSTRACT

Eyewear including an optical functional member, control electronics, and a sealed electrical connective element connecting the electronics to the optical functional member. The connective element can directly connect the electronics to the optical functional member, or can connect through an intermediate contact, e.g., a plug-and-receptacle. The connective element can be routed from the electronics, around a rimlock of the eyewear to the optical functional member. The connective element can be a conductive compressible member, such as conductive rubber. In some embodiments, the connective element can be a multiconductor cable.

21 Claims, 26 Drawing Sheets



Unfortunately, it has been found that in some environments, particularly those having high humidity or causing the wearer to sweat, commercially available electronic eyewear and frames may suffer from shorting of electronic connections and thus impede or cause the electronic application used with the eyewear to fail.

Ex. 1001, 2:23-28

Conformal Coatings Were Common In Eyewear in 2000s

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LUXOTTICA OF AMERICA INC.,
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v.

E-VISION OPTICS, LLC,
Patent Owner.

Case IPR2024-01069
Patent 10,613,355

DECLARATION OF JOHN FELAND
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,613,355

Luxottica Ex. 1002
IPR Petition USP 10,613,355

Indeed, compared to PCBs in the 1980s, by the early 2000s, PCBs had generally become smaller and typically utilized more surface mount components. As IPC-2221A documents, a POSITA would have recognized that, “due to the tight spacing of leads and land traces,” “[m]any surface mount technologies cannot perform adequately without the use of a conformal coating.” Ex. 1021 at 25. This principle known to a POSITA would have provided further motivation to apply a conformal coating as taught in Sikonowiz to Howell-719. Because conformal coatings were

Ex. 1002, ¶174 (highlighting added)

coating as taught in Sikonowiz to Howell-719. Because conformal coatings were commonplace with PCBs as early as the 1980s and continuing into the 2000s (see IPC-2221A), a POSITA would have had a reasonable expectation of success in applying Sikonowiz’s teachings to Howell-719. For example, applying a conformal

Ex. 1002, ¶174 (highlighting added)

Motivation to Combine Sikonowiz

Motivation to Combine Sikonowiz

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Filed June 21, 2024

UNITED STATES PATENT AND TRADEMARK OFFICE

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Case IPR2024-01069
Patent 10,613,355

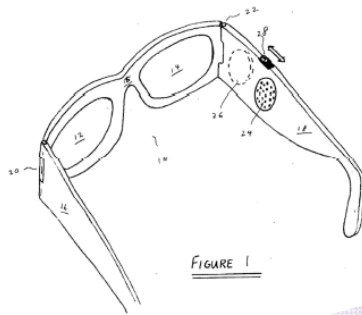
PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 10,613,355

- “[T]o prevent moisture and contaminants from damaging the PCB and its related electronics.”
- “Many surface mount technologies cannot perform adequately without the use of a conformal coating.”
- “[C]onformal coatings were commonplace with PCBs as far back as the 1980s and continuing into the 2000s[.]”
- “[T]he coated PCB would accomplish its intended function with the added benefit of keeping moisture and contaminants from interfering with the electronics.”
- “The coating would advantageously moisture proof and seal the electronic components and electrical connections of the PCB[.]”

Petition, 24-26

Patent Owner's Motivation To Combine Argument Fails

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355



(EX-1004, FIG. 1.) The speaker 24 must be connected to the circuit board in some manner to function as described in Howell-719.

Thus, if a POSITA were to apply a conformal coating to the circuitry of Howell-719, Sikonowiz would direct the POSITA to cover “the components mounted on [circuit board] as well.” (EX-1005, 21.) And as Patent Owner explained in its response, “applying a conformal layer to the PCB with those components would have adversely impacted the speaker’s functionality.” (Paper 18, “POR,” 34-35 (citing EX-2004, ¶101).) Accordingly, a POSITA would not have undertaken the path proposed by Petitioner precisely because the combination of Howell-719 and Sikonowiz would have impaired performance.

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A POSA would not be motivated to combine Howell-719 and Sikonowiz because:

- a POSA would interpret Sikonowiz as requiring the entire PCB to be coated with a conformal layer
- the conformal layer would impair the speaker’s functionality

Sur-Reply, 19

Patent Owner's Motivation To Combine Arguments Fail

On behalf of Luxottica of America Inc.
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Filed: June 23, 2025

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. IPR2024-01069

Patent No. 10,613,355

**PETITIONER'S REPLY IN SUPPORT OF PETITION FOR
INTER PARTES REVIEW OF U.S. PATENT NO. 10,613,355**

- Howell-719 does not require the speaker to be mounted on the PCB
- A POSA would know to mask off portions of the PCB

Reply, 5-7

Howell-719 Does Not Require The Speaker On The PCB

(19) United States
(12) Patent Application Publication (10) Pub. No.: US 2005/0248719 A1
Howell et al. (43) Pub. Date: Nov. 10, 2005

(54) EVENT EYEGLASSES

(76) Inventors: Thomas A. Howell, Palo Alto, CA (US); David Chan, Saratoga, CA (US); C. Douglas Thomas, Campbell, CA (US); Peter P. Tong, Mountain View, CA (US)

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(21) Appl. No.: 11/183,283
(22) Filed: Jul. 15, 2005

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/964,011, filed on Oct. 12, 2004.

(66) Provisional application No. 60/509,631, filed on Oct. 9, 2003. Provisional application No. 60/527,565, filed on Dec. 8, 2003. Provisional application No. 60/562,798, filed on Apr. 15, 2004. Provisional application No. 60/583,169, filed on Jun. 26, 2004. Provisional application No. 60/592,045, filed on Jul. 28, 2004. Provisional application No. 60/605,191, filed on Aug. 28, 2004. Provisional application No. 60/592,045, filed on Jul. 28, 2004. Provisional application No.

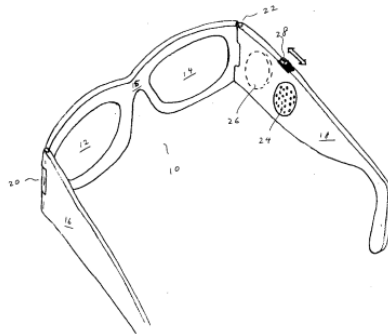
60/605,191, filed on Aug. 28, 2004. Provisional application No. 60/618,107, filed on Oct. 12, 2004. Provisional application No. 60/620,238, filed on Oct. 18, 2004. Provisional application No. 60/647,836, filed on Jan. 31, 2005. Provisional application No. 60/647,826, filed on Jan. 31, 2005.

Publication Classification

(51) Int. Cl. G02C 1/00
(52) U.S. Cl. 351/41

(57) ABSTRACT

A pair of glasses with first and second lens holders for receiving lenses, a bridge element that couples the lens holders, and a pair of temples. The temples are pivotally secured to the lens holders. In one embodiment, the glasses further include a speaker being powered by a power source. The pair of glasses can deliver information through the speaker to the person wearing the glasses. The information being delivered can be wirelessly transmitted to the glasses from a remote device. The information can be pre-recorded and available at the glasses, or the information can be wirelessly received by the glasses as it is produced. The information can be relevant to an event, and available for a relatively short duration of time. In another embodiment, a pair of glasses further includes an information input mechanism that allows the person to input information into the glasses. Such input information can be wirelessly transmitted from the glasses to a remote device.



[0050] In one embodiment, the pair of glasses 10 shown in FIG. 1 includes a radio, and the speaker is a part of the radio. All the electronics for the radio are at least partially embedded in the glasses. For example, the electronics can be on a printed circuit board, and the board is in one of the temples of the glasses. Information is provided to the user through

Ex. 1004, [0050] (highlighting added)

“can be coupled to a printed circuit board.” Ex. 1004 ¶97. As a POSITA would know, printed circuit boards have conductive traces on their surfaces electrically connecting electronic components mounted on the board to each other, and they have conductive leads or connectors to electrically connect the mounted electronics to off-board electronic components. Ex. 1002 ¶71; Ex. 1030 at 1498–99.

Petition, 22 (highlighting added)

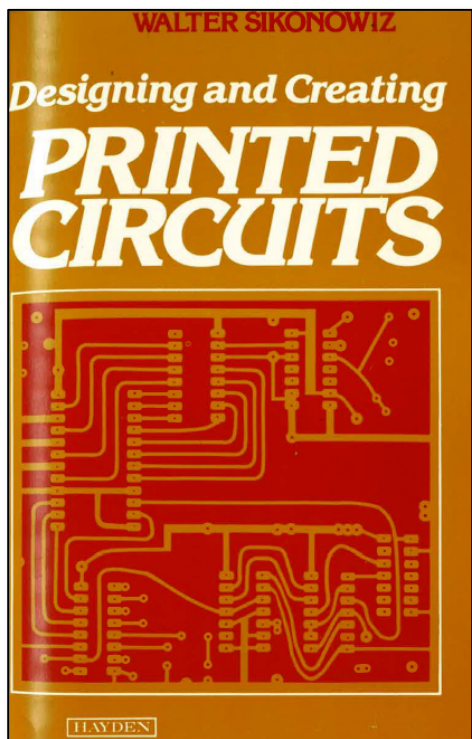
A POSA Is Not An Automaton



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

KSR International Co. v. Teleflex Inc., 550 U.S. 398, 421 (2007)

A POSA Would Understand How to Implement Sikonowiz's Conformal Layer



Since conformal coating materials are often insulators, a POSITA would therefore understand that edge connector strips should be left uncoated to permit electrical contact with off-board components. Indeed, HANDBOOK OF MATERIALS AND PROCESSES FOR ELECTRONICS, published in 1970, documents this principle: “In the assembly and processing of electronic components, resists or maskants may be needed to ‘stop off’ certain areas from conformal coating or solder. For example, in the conformal coating of printed-circuit boards, the edge connector strip should be left uncoated to allow electric contact with an edge connector.” Ex. 1019 at 5-11 (chapter 5, p. 11). This principle would have been immediately apparent to a POSITA. Accordingly, claim 15 would have been obvious.

Ex. 1002, ¶135 (highlighting added)

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 IPR2024-01069
Patent 10,613,355
DECLARATION OF JOHN FELAND
IN SUPPORT OF PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 10,613,355

Luxottica Ex. 1002
IPR Petition USP 10,613,355

A POSA Would Know To Mask Portions Of The PCB

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD
4
5 LUXOTTICA OF AMERICA, INC.,
6 Petitioner,
7 v.
8 E-VISION OPTICS, LLC,
9 Patent Owner.
10
11 IPR2024-01069
12 U.S. Patent No. 10,613,355
13
14
15 REMOTELY CONDUCTED VIDEOTAPED DEPOSITION OF
16 JAMES OLIVER PHD
17 WEDNESDAY, JUNE 11, 2025
18 1:00 P.M. CDT
19
20 JOB NO.: 587934
21 PAGES: 1 - 60
22 REPORTED BY: KARISA EKENSEAIR, CCR RPR RMR RDR

Q My question is a little more specific.
Would a POSITA have known prior to 2006
that applying a conformal layer on such an
electrical connection would have adversely
impacted the electrical connection's
functionality?

A Yes. You enclose it. You cover the
connector, you can't connect, so yes.

Ex. 1034, 51:8-15

Use of a Capacitive Touch Switch Does Not Teach Away From a Conformal Coating

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

masking any components during the conformal coating process. Second, while Sikonowiz does discuss a temporary "solder mask," this discussion is limited to soldering, and regardless, the only masking Sikonowiz discloses is of the "printed circuit wiring," to facilitate electrical connections to and from the board. (See EX-1005, 18-19; see, also, EX-1002, ¶135 ("[E]dge connector strips should be left uncoated to permit electrical contact with off-board components.").)

Even if a POSITA were to apply the solder masking concepts of Sikonowiz to conformal coatings, at most, this would mean that the connector strips remain uncoated. (See EX-1005, 18, 19.) But a speaker and its associated movable components are not connector strips, and so a POSITA would read Sikonowiz as coating the speaker. And because coating the entire speaker and diaphragm would lead to decreased, and even inoperable performance, the proposed combination would never be attempted. (EX-2004, ¶¶100-102.)

Third, a POSITA would not have applied Sinkonowiz's conformal coating to capacitor components in Petitioner's combination because doing so would have resulted in an inoperable system in which the "capacitive touch switch" was fully coated with a conformal layer. (EX-2004, ¶¶105, 106.)

Petitioner sidesteps Patent Owner's argument that a POSITA would not be motivated to reduce the performance of the Howell-719 "capacitive effect" switch.

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Third, a POSITA would not have applied Sinkonowiz's conformal coating to capacitor components in Petitioner's combination because doing so would have resulted in an inoperable system in which the "capacitive touch switch" was fully coated with a conformal layer. (EX-2004, ¶¶105, 106.)

Sur-Reply, 21

Use of a Capacitive Touch Switch Does Not Teach Away From a Conformal Coating

On behalf of Luxottica of America Inc.
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Filed: June 23, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LUXOTTICA OF AMERICA INC.,

Petitioner,

v.

E-VISION OPTICS, LLC,

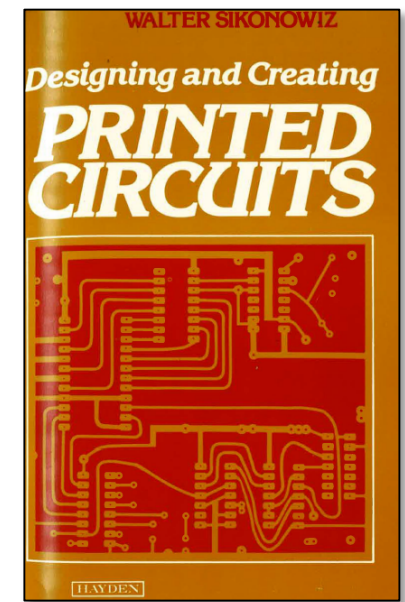
Patent Owner.

Case No. IPR2024-01069
Patent No. 10,613,355

PETITIONER'S REPLY IN SUPPORT OF PETITION FOR
INTER PARTES REVIEW OF U.S. PATENT NO. 10,613,355

- As PO's expert acknowledges, neither the prior art nor the Petition require the capacitive touch switch to be mounted on the PCB
- A POSA is not an automaton:
 - The entire PCB need not be coated
 - A POSA would know to mask off portions of the PCB
- A conformal coating can still be used to protect the capacitive touch switch while allowing it to function

Reply, 7-8



Neither The Prior Art Nor Petition Requires Mounting The Capacitive Touch Switch On A PCB

(19) United States
(12) Patent Application Publication
Howell et al.

(10) Pub. No.: US 2005/0248719 A1
(43) Pub. Date: Nov. 10, 2005

(54) EVENT EYEGLASSES

(70) Inventors: Thomas A. Howell, Palo Alto, CA (US); David Chan, Saratoga, CA (US); C. Douglas Thomas, Campbell, CA (US); Peter P. Tung, Mountain View, CA (US)

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SUITE A-22
LOS ALTOS, CA 94022 (US)

(21) Appl. No.: 10/183,203

(22) Filed: Jul. 15, 2005

Related U.S. Application Data

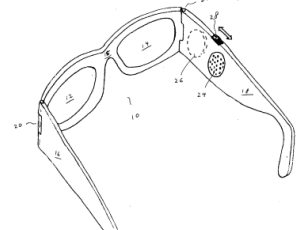
(63) Continuation-in-part of application No. 10/964,011, filed on Oct. 12, 2004.
(66) Provisional application No. 60/506,631, filed on Oct. 5, 2004; Provisional application No. 60/527,565, filed on Dec. 8, 2004; Provisional application No. 60/562,796, filed on Apr. 15, 2004; Provisional application No. 60/583,169, filed on Jun. 26, 2004; Provisional application No. 60/592,045, filed on Jul. 26, 2004; Provisional application No. 60/605,191, filed on Aug. 26, 2004; Provisional application No. 60/592,045, filed on Jul. 26, 2004; Provisional application No.

Publication Classification

(51) Int. Cl.⁷ G02C 1/00
(52) U.S. Cl. 350/41

(57) ABSTRACT

A pair of glasses with first and second lens holders for receiving lenses, a bridge element that couples the lens holders, and a pair of temples. The temples are generally secured to the lens holders. In one embodiment, the glasses further include a speaker being powered by a power source. The pair of glasses can deliver information through the speaker to the person wearing the glasses. The information being delivered can be wirelessly transmitted to the glasses from a remote device. The information can be pre-encrypted and available at the glasses, or the information can be wirelessly received by the glasses as it is produced. The information can be relevant to an event, and available for a relatively short duration of time. In another embodiment, a pair of glasses further includes an information input mechanism that allows the person to input information into the glasses. Such input information can be wirelessly transmitted from the glasses to a remote device.



A POSA Is Not An Automaton: Would Understand How to Apply Conformal Layer



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

KSR International Co. v. Teleflex Inc., 550 U.S. 398, 421 (2007)

coating. *Id.*, ¶135 (citing Ex. 1019, 5-11 (chapter 5, p. 11)). For example, a mask “may be needed to ‘stop off’ certain areas from conformal coating or solder.” Ex. 1019, 5-11 (chapter 5, p. 11). Patent Owner’s expert, Dr. Feland, acknowledged that a POSITA would “have known prior to 2006 that a mask could be used to prevent the deposition of a conformal coating over electrical contacts.” Ex. 1034, 58:8-12; *see also id.*, 43:7-44:8 (“The petitioner suggestions putting [the conformal coating] over the whole [capacitive touch switch] that’s what I’m saying a POSITA would not agree to.”). Patent Owner’s argument to the contrary improperly treats the

Reply, 8

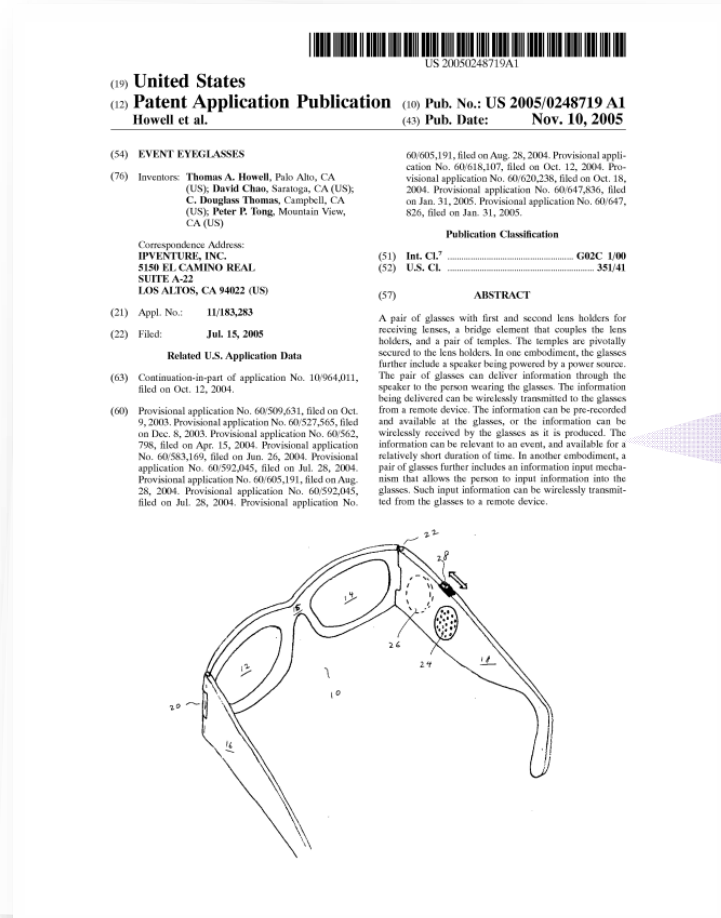
IPR2024-01069 – Patent 10,613,355
Luxottica of America Inc. v. e-Vision Optics, LLC

Even if the capacitive touch switch were mounted to the PCB, a POSITA would have known that not all areas and components of the PCB require a conformal coating. *Id.*, ¶135 (citing Ex. 1019, 5-11 (chapter 5, p. 11)). For example, a mask “may be needed to ‘stop off’ certain areas from conformal coating or solder.” Ex. 1019, 5-11 (chapter 5, p. 11). Patent Owner’s expert, Dr. Feland, acknowledged that a POSITA would “have known prior to 2006 that a mask could be used to prevent the deposition of a conformal coating over electrical contacts.” Ex. 1034, 58:8-12; *see also id.*, 43:7-44:8 (“The petitioner suggestions putting [the conformal coating] over the whole [capacitive touch switch] that’s what I’m saying a POSITA would not agree to.”). Patent Owner’s argument to the contrary improperly treats the POSITA as a mere automaton. *KSR*, 550 U.S. at 421 (“A person of ordinary skill in the art is also a person of ordinary creativity, not an automaton.”).

Furthermore, even if the capacitive touch switch were coated, Dr. Feland confirms that the conformal coating would protect the switch while still allowing the sensor to function. Ex. 1002, ¶¶95, 114, 138. Claim 19 of the ‘355 patent confirms this, reciting that “the conformal coating protects a portion of the capacitive touch switch.” Ex. 1001, claim 19. Dr. Oliver does not dispute that a partially coated capacitive touch switch would still be functional. Ex. 2004, ¶106.

-8-

The Conformal Coating Would Protect The Capacitive Touch Switch



[0097] A number of embodiments have been described regarding electrical components in a temple of a pair of glasses. All of the electronic components can be self-contained inside the temple of the glasses. The components can be coupled to a printed circuit board. In other embodiments, some of the components are embedded fully or partially in other areas of the glasses, such as the lens holders or the bridge of the glasses. Or, one or more electrical components can be in a shield of the glasses.

Ex. 1004, [0097] (highlighting added)

The Conformal Coating Would Protect The Capacitive Touch Switch

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 IPR2024-01069
Patent 10,613,355

DECLARATION OF JOHN FELAND
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,613,355

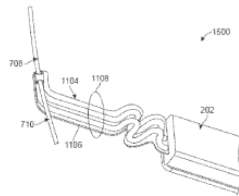
Luxottica Ex. 1002
IPR Petition USP 10,613,355

board but the components mounted on it as well.” Ex. 1005 at 136. Additionally, a POSITA would understand that a conformal coating would protect a portion of the capacitive touch switch from, for example, environmental hazards such as moisture, dirt, and chemicals.” Ex. 1005 at 135–36. It would have therefore been obvious to mount the capacitive touch switch on a PCB and apply a conformal coating to both the board and the switch. Claim 19 would have been obvious.

Ex. 1002, ¶138 (highlighting added)

The Conformal Coating Would Protect The Capacitive Touch Switch

 US01061335B2	
(12) United States Patent Blum et al.	(10) Patent No.: US 10,613,355 B2 (45) Date of Patent: Apr. 7, 2020
(54) MOISTURE-RESISTANT EYE WEAR	(58) Field of Classification Search CPC G02C 11/06; G02C 11/10; G02C 11/00; G02C 11/04; G02C 7/083; G02C 7/101 (Continued)
(71) Applicant: E-Vision, LLC, Sarasota, FL (US)	(56) References Cited U.S. PATENT DOCUMENTS 2,437,642 A 3/1948 Henroleau 2,576,581 A 11/1951 Edwards (Continued)
(72) Inventors: Ronald D. Blum, Roanoke, VA (US); William Kokonashvili, Gig Harbor, WA (US); Claudio Dalla Longa, Roanoke, VA (US); Mark Graham, Roanoke, VA (US); Joshua Haddock, Roanoke, VA (US); Charles Willey, Roanoke, VA (US); Tiziano Tabacchi, Roanoke, VA (US); Martin Bock, Roanoke, VA (US); Massimo Pinazza, Roanoke, VA (US); Scott N. Richman, Roanoke, VA (US); Volkan Oezgur, Roanoke, VA (US)	FOREIGN PATENT DOCUMENTS CN ROC39113088 10/2001 DE 2304134 8/1973 (Continued)
(73) Assignee: e-Vision, LLC, Sarasota, FL (US)	OTHER PUBLICATIONS "Hearing Mojo: Varibel Hearing-Aid Glasses Integrate Eight Directional Microphones," Feb. 27, 2009, pp. 1-4, URL: http://hearingmojo.com/blog-mt/blog-mt/2006/04/varibel_hearingaid_glasses_dou.html . (Continued)
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.	<i>Primary Examiner</i> — Ricky I. Mack <i>Assistant Examiner</i> — Gary O'Neill (74) <i>Attorney, Agent, or Firm</i> — Smith Baloch LLP
(21) Appl. No.: 13/890,809	(57) ABSTRACT Eyewear including an optical functional member, control electronics, and a sealed electrical connective element connecting the electronics to the optical functional member. The connective element can directly connect the electronics to the optical functional member, or can connect through an intermediate contact, e.g., a plug-and-receptacle. The connective element can be routed from the electronics, around a rimlock of the eyewear to the optical functional member. The connective element can be a conductive compressible member, such as conductive rubber. In some embodiments, the connective element can be a multiconductor cable.
(22) Filed: May 9, 2013	
(65) Prior Publication Data US 2013/0250233 A1 Sep. 26, 2013	
Related U.S. Application Data (63) Continuation-in-part of application No. 13/587,645, filed on Aug. 16, 2012, now abandoned, which is a (Continued)	
(51) Int. Cl. G02C 11/00 (2006.01) G02B 27/01 (2006.01) (Continued)	
(52) U.S. Cl. CPC G02C 11/10 (2013.01); G02B 27/017 (2013.01); G02C 7/083 (2013.01); G02C 7/101 (2013.01); (Continued)	



13. A method of manufacturing an eyewear system comprising:

disposing a plurality of electronic components on a capacitive touch switch;

connecting the plurality of electronic components via electrical connections to form an electronic assembly;

depositing a conformal layer over at least a portion of the electronic assembly and at least a portion of the capacitive touch switch; and

coupling the electronic assembly and the capacitive touch switch with the conformal layer to an enclosure of an eyewear frame.

Ex. 1001, claim 13 (highlighting added)

19. The eyewear of claim 14, wherein the conformal coating protects a portion of the capacitive touch switch.

Ex. 1001, claim 19 (highlighting added)

Patent Owner's "Complexity" Arguments Are Futile

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. IPR2024-01069
Patent No. 10,613,355

PATENT OWNER'S RESPONSE TO PETITION

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P.O. Box 1450
Alexandria, VA 22313-1450

Blum-130 specifically discusses the need to reprogram the controller chip, for example to update a prescription for electro-active lenses:

If a POSITA were to mount the controller on a PCB and apply a conformal coating as Petitioner suggests, doing so would prevent an electrical connection to the controller necessary to reprogram it. (EX-2004, ¶115.) In that case, any reprogramming would require maintenance and therefore repair work, an added expense. (*Id.*) But as explained in Petitioner's own cited art, conformal coatings need to be chemically stripped away or burned away before any repair work can occur.

POR, 37-39 (annotated)

Patent Owner's "Complexity" Arguments Are Futile

On behalf of Luxottica of America Inc.
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Benjamin B. Anger (Reg. No. 62,207)
Alexander B. Stein (Reg. No. 71,397)
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Filed: June 23, 2025

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. IPR2024-01069

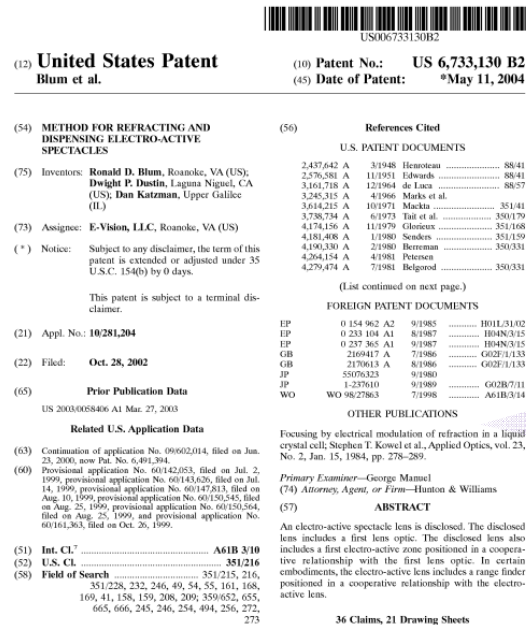
Patent No. 10,613,355

**PETITIONER'S REPLY IN SUPPORT OF PETITION FOR
INTER PARTES REVIEW OF U.S. PATENT NO. 10,613,355**

- Blum-130 does not require a reprogrammable controller
- A POSA would know to mask off portions of the PCB
- Conformal coatings can be easily removed when repair work is required

Reply, 10-12

Blum-130 Does Not Require a Reprogrammable Controller



Patent Owner's "Complexity" Arguments Are Futile

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

Finally, Petitioner's ground 2 (for dependent claim 4) relies on Petitioner's ground 1 arguments for independent claim 1. (Pet., 35-37.) Because ground 1 fails, ground 2 fails for at least the same reason.

B. Ground 6: Claim 1 Is Patentable Over Blum-130 and Sikonowiz

Patent Owner respectfully requests the Board find claim 1 patentable over ground 6 for at least two reasons: (i) Sikonowiz is non-analogous art; and (ii) combining Sikonowiz's teachings with those of Blum-130 would result in an inoperable system and would not be attempted.

Sikonowiz is non-analogous art to the claimed invention, as demonstrated above and in the POR. *See* § III.A, *supra*. For this reason alone, Petitioner's ground 6 fails.

Even if a POSITA were to apply the non-analogous teachings of Sikonowiz to Blum-130, the result would be an inoperative electroactive eyewear system, and as such, a POSITA would not have attempted the combination.

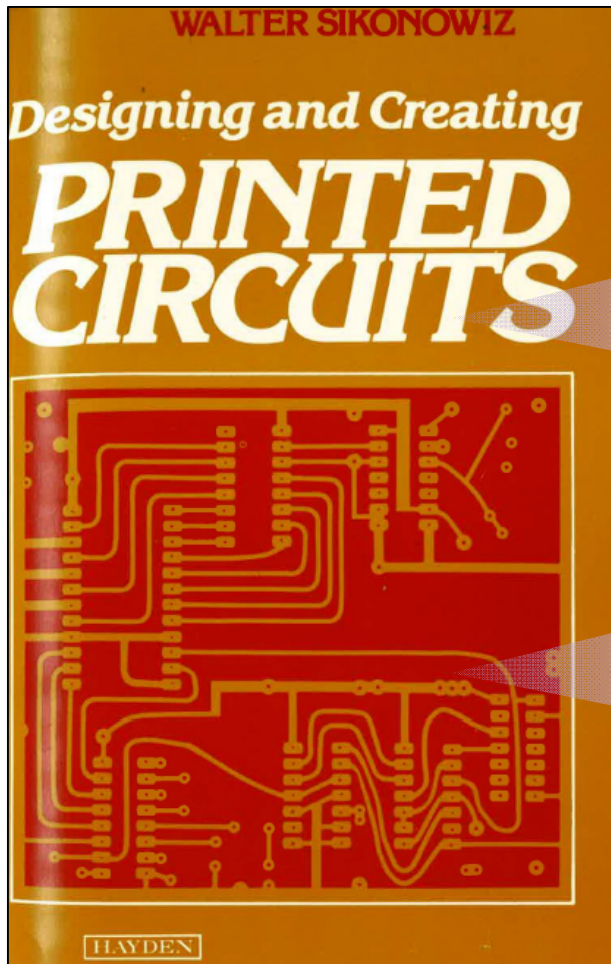
In its reply, Petitioner does not dispute that covering the Blum-130 controller with a conformal coating would "prevent an electrical connection to the controller necessary to reprogram it." (*See generally* Reply; POR, 38.) Instead, Petitioner's reply merely states that Blum-130 also discloses a controller "that is not reprogrammed, but instead replaced." (Reply, 10 (*citing* EX-1006, 6:32-47).) But a conformal coating could prevent or hinder the operation of such a "replaceable" Blum-130 controller as well, for example, due the inherent difficulty of removing a coated component from a

24

necessary to reprogram it." (*See generally* Reply; POR, 38.) Instead, Petitioner's reply merely states that Blum-130 also discloses a controller "that is not reprogrammed, but instead replaced." (Reply, 10 (*citing* EX-1006, 6:32-47).) But a conformal coating could prevent or hinder the operation of such a "replaceable" Blum-130 controller as well, for example, due the inherent difficulty of removing a coated component from a circuit board. (*See* EX-1005, 21-22.) Not only would the conformal coating hinder replacement, but chemical stripping or burning are often required to remove such coatings, limiting the ability of the combined system to be maintained or otherwise repaired. (*See id.*)

Sur-Reply, 24-25 (highlighting added)

Sinokowiz Teaches Ease of Application and Removal



Acrylic conformal coatings offer the advantages of long potlife and ease of application. When repair work is needed, acrylic conformal coatings are easily removed from the board with methylene chloride or some related chlorinated hydrocarbon. This is a mixed

only the circuit board but the components mounted on it as well. Since conformal coatings are rarely thicker than 0.005 in., they cannot be expected to provide the same protection against physical abuse afforded by encapsulation. On the other hand, components on the circuit board remain accessible for adjustment or repair—something not possible after a board has been encapsulated.

Ex. 1005, 136 (highlighting added)

Complexity/Expense Do Not Negate Motivation to Combine



“[T]he ‘mere disclosure of **alternative designs does not teach away.**’ *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). This court has further explained that just because better alternatives exist in the prior art does not mean that an inferior combination is inapt for obviousness purposes.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994).



In re Mouttet, 686 F.3d 1322, 1334 (Fed. Cir. 2012)

“A given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.”



Allied Erecting & Dismantling. Co. v. Genesis Attachments, LLC, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (citing *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (citation omitted))

Even if adding a conformal coating created additional work, “the law does not exclude from an obviousness determination solutions which are more complex[.]”

Polaris Wireless, Inc. v. Trueposition, Inc., IPR2013-00323, Paper 62 at 36 (citing *KSR*, 550 U.S. at 417)

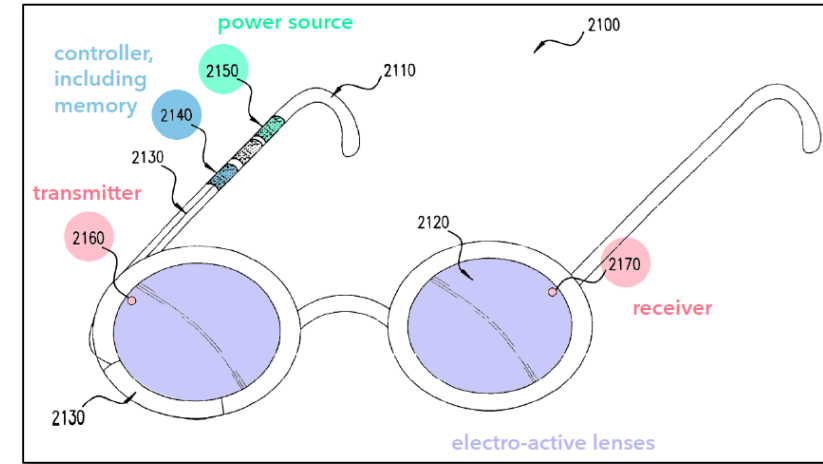
Ground 6

Blum-130, Sikonowiz, and Howell-719 Render Claim 14 Obvious

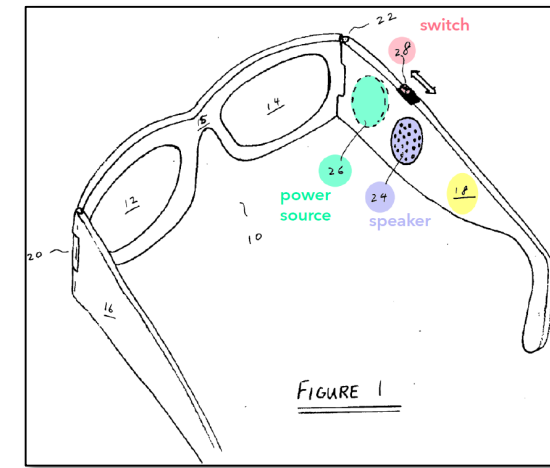
14. Eyewear comprising:

an eyewear frame comprising a temple;
a plurality of electronic components disposed within a cavity formed in the temple, the plurality of electronic components comprising (i) at least one of a processor or a controller, (ii) a memory, (iii) a power source, (iv) an antenna, (v) at least one of a transmitter or a receiver, and (vi) at least one of an accelerometer or a gyroscope;
a conformal coating, deposited over at least a portion of the plurality of electronic components, to protect the plurality of electronic components; and
a capacitive touch switch operably coupled to an electronic component in the plurality of electronic components.

Ex. 1001, claim 14



Ex. 1006, Fig. 21 (annotated)



Ex. 1004, Fig. 1 (annotated)

Petition Sets Forth the Motivation to Combine Howell-719 and Blum-130

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LUXOTTICA OF AMERICA INC.,
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v.

E-VISION OPTICS, LLC,
Patent Owner.

Case IPR2024-01069
Patent 10,613,355

DECLARATION OF JOHN FELAND
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,613,355

Luxottica Ex. 1002
IPR Petition USP 10,613,355

A POSA would be motivated to combine Howell-719 and Blum-130 because capacitive touch switches:

- are not susceptible to wear, fatigue, and loosening due to mechanical movement
- permit glasses to have a switch without disrupting the typical smooth, slim profile of glasses
- eliminate the need to carry a second device to remotely control the lenses
- have been known for decades

Ex. 1002, ¶¶148-149

Petitioner Sets Forth the Motivation to Combine Howell-719 and Blum-130

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

B. Ground 6: Claim 14 Is Patentable Over Blum-130, Sikonowiz, and Howell-719

Claim 14 is patentable over ground 6 at least because Petitioner's motivation to combine is based only on conclusory statements by Petitioner's expert.

In its reply, Petitioner again points to the conclusory statements of Dr. Feland. Petitioner does not dispute that its alleged motivation to add the Howell-719 capacitive effect switch to Blum-130 is based on an essentially *identical paragraph* in Dr. Feland's testimony. (*Compare* Pet., 54 with EX-1002, ¶148.) Petitioner's expert merely repeats the same conclusory statements found in the petition. Dr. Feland's testimony is therefore insufficient to support Petitioner's motivation to combine allegations. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential) (finding an expert's declaration that "merely repeats" conclusory assertions without additional supporting evidence or any technical reasoning is "entitled to little weight," particularly where the testimony is offered to supply a limitation missing from the prior art); 37 C.F.R. § 42.65(a)).

Petitioner's conclusory basis for combining prior art teachings lacks specificity. Petitioner fails to articulate an adequate motivation to combine the capacitive effect switch of Howell-719 with Blum-130; thus, the proposed ground 6 combination rests on little more than hindsight bias. (*Compare* Pet., 54 with EX-1002, ¶148.) And Petitioner cannot use claim 14 itself as guidepost. Petitioner must put forward some

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Sur-Reply, 9 (highlighting added)

Patent Owner's Reliance On Xerox Is Misplaced



“Dr. Jones offers only a verbatim restatement of the assertion being supported, without any supporting evidence or technical reasoning . . . This is particularly problematic in cases where, like here, expert testimony is offered ***not simply to provide a motivation to combine prior-art teachings, but rather to supply a limitation missing from the prior art.*** See *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) (stating that a ‘factfinder . . . must be cautious of arguments reliant upon ex post reasoning’); *Arendi S.A.R.L. v. Apply, Inc.*, 832 F.3d 1355, 1361–62 (Fed. Cir. 2016) (holding that ***reliance on common sense*** in an obviousness analysis is ‘***typically invoked to provide a known motivation to combine, not to supply a missing claim limitation***’)[.]”

Xerox Corp. v. Bytemark, Inc., IPR2022-00624, Paper 9 at 16 (PTAB Aug. 24, 2022).

PO's "Unsuitability" Arguments Do Not Negate Motivation to Combine

Patent Owner's Response to
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(EX-1002, ¶148.) Because Dr. Feland's testimony is "conclusory and factually unsupported," it should be given little to no weight. *Activevideo Networks, Inc. v. Verizon Commc'ns, Inc.*, 694 F.3d 1312, 1327–28 (Fed. Cir. 2012). Because Petitioner's argument regarding the alleged motivation to combine Blum-130 and Howell-719 is conclusory, it must also be rejected. *See In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (declaring that "a petitioner cannot employ mere conclusory statements").

Second, of all the available options for a switch, a POSITA would not have been motivated to use a capacitive touch switch. Both Blum-130 and the '355 patent disclose electro-active eyewear, whereas Howell-719 is directed to eyewear with a speaker. (*See, e.g.*, EX-1006, Abstract; EX-1001, 2:18-22, 2:50-62.) As such, a POSITA would not have found Howell-719's disclosures suitable for Blum-130's electro-active eyewear. Moreover, as Petitioner recognizes, Blum-130 discloses different types of switches and their associated benefits in electro-active eyewear, including the manual switch, which Petitioner argues a POSITA would have been motivated to replace with Howell-719's capacitive touch switch. (*See, e.g.*, EX-1006, 30:55-58 ("The manual switch...used for overriding the microgyroscope for certain visual functions at or above the 180, such as working on a computer.")) In fact, Blum-130 discloses specific alternative to the manual switch, i.e., an eye-tracker, for

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POR, 23 (highlighting added)

PO's "Unsuitability" Arguments Do Not Negate Motivation to Combine

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. IPR2024-01069
Patent No. 10,613,355

PATENT OWNER'S RESPONSE TO PETITION

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Patent Trial and Appeal Board
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Patent Owner's Response *does not* suggest:

- that Blum-130 teaches away from using a capacitive touch switch
- that Howell-719 teaches away from using a capacitive touch switch in electroactive eyewear (as described in Blum-130)

POR, 22-24

"In evaluating whether a reference is analogous, we have consistently held that a patent challenger must compare the reference *to the challenged patent.*"

Sanofi-Aventis Deutschland GmbH v. Mylan Pharms. Inc., 66 F.4th 1373, 1377 (Fed. Cir. 2023) (citing *Donner Tech., LLC v. Pro Stage Gear, LLC*, 979 F.3d 1353, 1359 (Fed. Cir. 2020))



PO's Arguments Regarding Alternative Switches Fails

Patent Owner's Response to
Petition for Inter Partes Review
Patent No. 10,613,355

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Second, of all the available options for a switch, a POSITA would not have been motivated to use a capacitive touch switch. Both Blum-130 and the '355 patent disclose electro-active eyewear, whereas Howell-719 is directed to eyewear with a speaker. (*See, e.g.*, EX-1006, Abstract; EX-1001, 2:18-22, 2:50-62.) As such, a POSITA would not have found Howell-719's disclosures suitable for Blum-130's electro-active eyewear. Moreover, as Petitioner recognizes, Blum-130 discloses different types of switches and their associated benefits in electro-active eyewear, including the manual switch, which Petitioner argues a POSITA would have been motivated to replace with Howell-719's capacitive touch switch. (*See, e.g.*, EX-1006, 30:55-58 ("The manual switch...used for overriding the microgyroscope for certain visual functions at or above the 180, such as working on a computer.")) In fact, Blum-130 discloses specific alternative to the manual switch, i.e., an eye-tracker, for

visual functions at or above the 180, such as working on a computer.")) In fact, Blum-130 discloses specific alternative to the manual switch, i.e., an eye-tracker, for the same purpose Petitioner proposes for the capacitive touch switch. (*Id.*, 30:65-

POR, 23-24

PO's Arguments Regarding Alternative Switches Fails



“[T]he ‘mere disclosure of **alternative designs does not teach away.**’ *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). This court has further explained that just because better alternatives exist in the prior art does not mean that an inferior combination is inapt for obviousness purposes.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994).

In re Mouttet, 686 F.3d 1322, 1334 (Fed. Cir. 2012).

Patent Owner's Argument Regarding "Continuous Variance" Fails

Patent Owner's Response to
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the same purpose Petitioner proposes for the capacitive touch switch. (*Id.*, 30:65-31:1.)

Additionally, Blum-130 discloses that "the switch is analog not digital, and provides *continuous variance of the focal length of the lens by adjusting a knob or lever much like a volume control on a radio.*" (EX-1006, 28:55-58 (emphasis added).) To enable continuous variance functionality in a capacitive touch switch, a POSITA would have needed to include multiple capacitive touch switches, or at least a very complex touch switch with slider capabilities, which would have been cost-prohibitive. (EX-2004, ¶73.) As a result, and contrary to Petitioner's assertions, a POSITA would not have been motivated to replace any of Blum-130's switch options with a capacitive touch switch. (*Id.*)

Ground 6 fails because a POSITA would not have been motivated to incorporate Howell-719's switch into Blum-130's eyewear. Accordingly, Petitioner's cited prior art combination in Ground 6 does not render obvious the claimed capacitive touch switch.

3. **Ground 7: Petitioner's Reliance on Eichelberger is Misplaced**

Claim 14 is patentable over the cited prior art combination in Ground 7 (Blum-130, Sikonowiz, and Eichelberger) because Eichelberger is non-analogous art. And

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Additionally, Blum-130 discloses that "the switch is analog not digital, and provides *continuous variance of the focal length of the lens by adjusting a knob or lever much like a volume control on a radio.*" (EX-1006, 28:55-58 (emphasis added).) To enable continuous variance functionality in a capacitive touch switch, a POSITA would have needed to include multiple capacitive touch switches, or at least a very complex touch switch with slider capabilities, which would have been cost-prohibitive. (EX-2004, ¶73.) As a result, and contrary to Petitioner's assertions, a POSITA would not have been motivated to replace any of Blum-130's switch options with a capacitive touch switch. (*Id.*)

POR, 24

A POSA Would Have Been Motivated To Use A Capacitive Touch Switch

IPR Petition – Patent 10,613,355
Luxottica of America Inc. v. e-Vision Optics, LLC

options for a switch to control the electro-active lenses, including combining sensors and a manual switch to allow for a mixture of automated and manual inputs to control the electro-active lenses. Ex. 1006 cols.28–30. As discussed in Ground 1, Howell-719 discloses a capacitive touch switch satisfying element 1[c]. *Supra* § VII.A.3.

A POSITA would have been motivated to use such a capacitive touch switch with Blum-130's glasses. Ex. 1002 ¶148. A person needing Blum-130's electro-active lenses would be expected to require frequent switching operations to change the lenses' focal distance as the person looked at objects at different distances. *Id.* Manual switches relying on mechanical movement to close a circuit are susceptible to wear, fatigue, and loosening, which, over the course of repeated switching operations, can lead to eventual failure. *Id.* Capacitive touch switches do not rely on mechanical movement, eliminating this source of failure. *Id.* Moreover, using a capacitive touch switch permits the glasses to have a switch without a protruding button that would disrupt the typical smooth, slim profile of glasses. *Id.* It also avoids Blum-130's inconvenient alternative of needing to carry a second device that remotely controls the lenses. *Id.* (citing Ex. 1006 29:49–51). A capacitive touch switch would therefore have been an ideal choice for a switch in eyewear in the early 2000s, when glasses were often marketed as fashion accessories. *Id.*

Incorporating Howell-719's capacitive touch switch into Blum-130 would constitute a simple substitution or addition of a specific known type of switch

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A POSITA would have been motivated to use such a capacitive touch switch with Blum-130's glasses. Ex. 1002 ¶148. A person needing Blum-130's electro-active lenses would be expected to require frequent switching operations to change the lenses' focal distance as the person looked at objects at different distances. *Id.* Manual switches relying on mechanical movement to close a circuit are susceptible to wear, fatigue, and loosening, which, over the course of repeated switching operations, can lead to eventual failure. *Id.* Capacitive touch switches do not rely on mechanical movement, eliminating this source of failure. *Id.* Moreover, using a

Petition, 54 (highlighting added)

Patent Owner's Argument Regarding "Continuous Variance" Fails

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

"explanation as to how or why the references would be combined to arrive at the claimed invention...[otherwise] hindsight bias [becomes] the thread that stitches together prior art patches into something that is the claimed invention." *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) (citation omitted).

Moreover, in the reply, Petitioner now pivots from its original contention in its petition of Blum-130's "change [of] the lenses' focal distance," (Pet., 54) and now relies on a purported "simplest embodiment" in Blum-130 where "the electro-active lenses are either on or off." (Reply, 19 (*citing* EX-1006, 28:40-41.) Petitioner's pivot fails because the cited portion of Blum-130 describes a mechanical, movable switch with different physical positions inapposite to that of a touch switch. (*See* EX-1006, 28:37-58.) In this purported simplest embodiment, Blum-130 requires "two switch positions." (*Id.*, 28:38-39 (emphasis added).) Blum-130 describes a first, (or "off") position, a second (or "on") position. (*Id.*, 28: 37-58.) Therefore, not only would implementation of Blum-130's "variable focal length" control using a capacitive effect switch not be attempted due to the requirement for "continuous variance" adjustment, as demonstrated in the POR at pages 29 and 30, the implementation of the "simplest embodiment" Blum-130 switch using a capacitive effect switch would also not be attempted, as now proposed in the reply. (Reply, 19.) Even in its "simplest embodiment," Blum-130 requires movement between "switch positions," and a

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position, a second (or "on") position. (*Id.*, 28: 37-58.) Therefore, not only would implementation of Blum-130's "variable focal length" control using a capacitive effect switch not be attempted due to the requirement for "continuous variance" adjustment, as demonstrated in the POR at pages 29 and 30, the implementation of the "simplest embodiment" Blum-130 switch using a capacitive effect switch would also not be attempted, as now proposed in the reply. (Reply, 19.) Even in its "simplest

Sur-Reply, 10 (highlighting added)

Patent Owner Remaining Arguments Fail

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

"explanation as to how or why the references would be combined to arrive at the claimed invention...[otherwise] hindsight bias [becomes] the thread that stitches together prior art patches into something that is the claimed invention." *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) (citation omitted).

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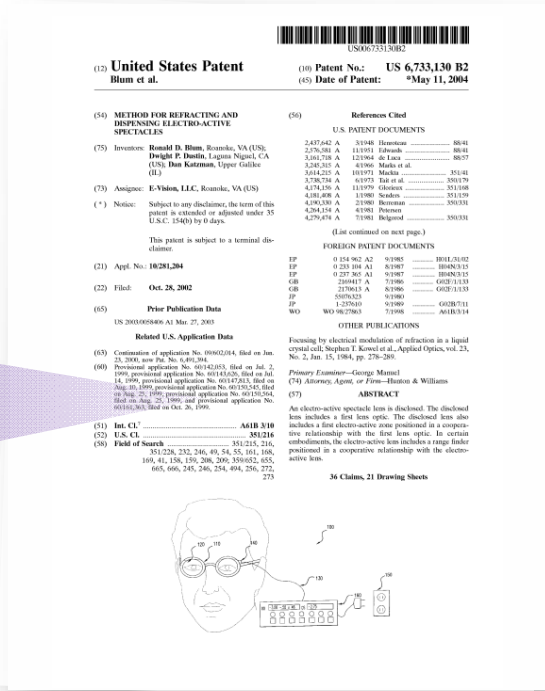
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Sur-Reply, 10

Blum-130's "simplest embodiment" is a way to change the lenses' focal distance.

Ex. 1006, 28:37-51



Neither Complexity Nor Expense Negate Motivation to Combine

Patent Owner's Response to
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the same purpose Petitioner proposes for the capacitive touch switch. (*Id.*, 30:65-31:1.)

Additionally, Blum-130 discloses that “the switch is analog not digital, and provides *continuous variance of the focal length of the lens by adjusting a knob or lever much like a volume control on a radio.*” (EX-1006, 28:55-58 (emphasis added).) To enable continuous variance functionality in a capacitive touch switch, a POSITA would have needed to include multiple capacitive touch switches, or at least a very complex touch switch with slider capabilities, which would have been cost-prohibitive. (EX-2004, ¶73.) As a result, and contrary to Petitioner’s assertions, a POSITA would not have been motivated to replace any of Blum-130’s switch options with a capacitive touch switch. (*Id.*)

Ground 6 fails because a POSITA would not have been motivated to incorporate Howell-719’s switch into Blum-130’s eyewear. Accordingly, Petitioner’s cited prior art combination in Ground 6 does not render obvious the claimed capacitive touch switch.

3. Ground 7: Petitioner’s Reliance on Eichelberger is Misplaced

Claim 14 is patentable over the cited prior art combination in Ground 7 (Blum-130, Sikonowiz, and Eichelberger) because Eichelberger is non-analogous art. And

24

added).) To enable continuous variance functionality in a capacitive touch switch, a POSITA would have needed to include multiple capacitive touch switches, or at least a very complex touch switch with slider capabilities, which would have been cost-prohibitive. (EX-2004, ¶73.) As a result, and contrary to Petitioner’s assertions, a

POR, 24

Neither Complexity Nor Expense Negate Motivation to Combine



Even if adding a conformal coating created additional work, “the law does not exclude from an obviousness determination solutions which are more complex[.]”

Polaris Wireless, Inc. v. Trueposition, Inc., IPR2013-00323, Paper 62 at 36 (citing *KSR*, 550 U.S. at 417)



“[T]he fact that the two disclosed apparatus would not be combined by businessmen for economic reasons is not the same as saying that it could not be done because skilled persons in the art felt that there was some technological incompatibility that prevented their combination.”

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

Claim 13

Independent Claim 13 Of The '355 Patent

13. A **method** of manufacturing an eyewear system comprising:
disposing a plurality of electronic components on a capacitive touch switch;
connecting the plurality of electronic components via electrical connections to form an electronic assembly;
depositing a conformal layer over at least a portion of the electronic assembly and at least a portion of the capacitive touch switch; and
coupling the electronic assembly and the capacitive touch switch with the conformal layer to an enclosure of an eyewear frame.

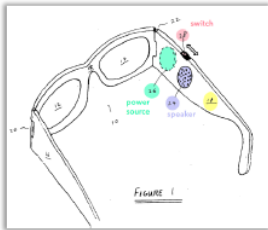
Ex. 1001, claim 13 (highlight added)

The Prior Art in Grounds 1, 3, 6 and 7 Disclose the Method of Claim 13

Patent Owner's Response to
Petition for Inter Partes Review
Patent No. 10,613,355

cited art discloses a method for manufacturing eyewear.” See *TorPharm, Inc. v. Ranbaxy Pharmaceuticals, Inc.*, 336 F.3d 1322, 1327 (Fed. Cir. 2003) (“[T]here are no per se rules relating the patentability of product and process in either direction...a process yielding a well-known product may yet be nonobvious.”) (citation omitted).

In Grounds 1 and 3, Petitioner contends that “Howell-719 discloses an eye-wear system and its construction.” (Petition at 32.) But none of the materials Petitioner points to (Figure 1, paragraphs [0027] – [0107], and section VII.A.1 of the petition) even mention a method. The claimed steps, for example, “depositing a conformal layer over at least a portion of the electronic assembly and at least a portion of the capacitive touch switch,” would not have been obvious to a POSITA simply by looking at Figure 1 or paragraphs [0027] – [0107].



719 does not even disclose a conformal layer, this step would not have been apparent

40

Even though claim 13 requires “[a] method of manufacturing an eyewear system,” Petitioner fails to address this requirement in Grounds 1, 3, 6, and 7 and does not show where in Howell-719 or Blum-130 a *method* such as manufacturing steps is taught or suggested. Thus, claim 13 is additionally patentable because none of the cited art discloses a “method for manufacturing eyewear.” See *TorPharm, Inc. v.*

POR, 39-41

The Prior Art in Grounds 1, 3, 6 and 7 Disclose the Method of Claim 13



“[A] reference must be considered not only for what it expressly teaches, but also for what it fairly suggests.”

Bradium Techs. LLC v. Iancu, 923 F.3d 1032, 1049 (Fed. Cir. 2019) (quoting *In re Baird*, 16 F.3d 380, 383 (Fed. Cir. 1994))

Grounds 1 and 3



Grounds 6 and 7



Grounds 1 and 3 – Howell-719 Discloses A Method

US 2005/0248719A1

(19) United States
(12) Patent Application Publication (10) Pub. No.: US 2005/0248719 A1
Howell et al. (43) Pub. Date: Nov. 10, 2005

(54) EVENT EYEGLASSES

(76) Inventors: Thomas A. Howell, Palo Alto, CA (US); David Chao, Saratoga, CA (US); C. Douglas Thomas, Campbell, CA (US); Peter P. Tong, Mountain View, CA (US)

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(21) Appl. No.: 11/183,283
(22) Filed: Jul. 15, 2005

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/964,011, filed on Oct. 12, 2004.

(60) Provisional application No. 60/509,631, filed on Sep. 9, 2003. Provisional application No. 60/527,565, filed on Dec. 8, 2003. Provisional application No. 60/562,798, filed on Apr. 15, 2004. Provisional application No. 60/583,169, filed on Jun. 26, 2004. Provisional application No. 60/592,045, filed on Jul. 28, 2004. Provisional application No. 60/605,191, filed on Aug. 28, 2004. Provisional application No. 60/592,045, filed on Jul. 28, 2004. Provisional application No.

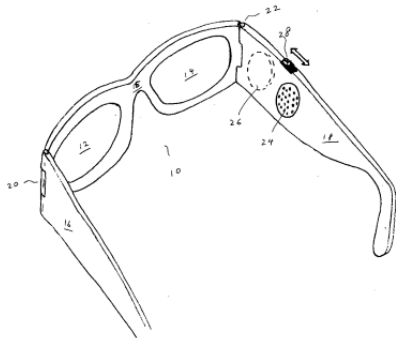
60/605,191, filed on Aug. 28, 2004. Provisional application No. 60/618,107, filed on Oct. 12, 2004. Provisional application No. 60/620,238, filed on Oct. 18, 2004. Provisional application No. 60/647,836, filed on Jan. 31, 2005. Provisional application No. 60/647,826, filed on Jan. 31, 2005.

Publication Classification

(51) Int. Cl.⁷ G02C 1/00
(52) U.S. Cl. 351/41

(57) ABSTRACT

A pair of glasses with first and second lens holders for receiving lenses, a bridge element that couples the lens holders, and a pair of temples. The temples are pivotally secured to the lens holders. In one embodiment, the glasses further include a speaker being powered by a power source. The pair of glasses can deliver information through the speaker to the person wearing the glasses. The information being delivered can be wirelessly transmitted to the glasses from a remote device. The information can be pre-recorded and available at the glasses, or the information can be wirelessly received by the glasses as it is produced. The information can be relevant to an event, and available for a relatively short duration of time. In another embodiment, a pair of glasses further includes an information input mechanism that allows the person to input information into the glasses. Such input information can be wirelessly transmitted from the glasses to a remote device.



[0018] The invention can be implemented in numerous ways including, a method, system, device, apparatus, and a computer readable medium. Several embodiments of the invention are discussed below.

Ex. 1004, [0018] (highlighting added)

[0111] Numerous specific details are set forth in order to provide a thorough understanding of the present invention. However, it will become obvious to those skilled in the art that the invention may be practiced without these specific details. The description and representation herein are the common meanings used by those experienced or skilled in the art to most effectively convey the substance of their work to others skilled in the art. In other instances, well-known methods, procedures, components, and circuitry have not been described in detail to avoid unnecessarily obscuring aspects of the present invention.

Ex. 1004, [0111] (highlighting added)

Grounds 6 and 7 – Blum-130 Discloses A Method



US006733130B2

(12) **United States Patent**
Blum et al.

(10) **Patent No.: US 6,733,130 B2**
(45) **Date of Patent: *May 11, 2004**

(54) **METHOD FOR REFRACTING AND
DISPENSING ELECTRO-ACTIVE
SPECTACLES**

(56) **References Cited**
U.S. PATENT DOCUMENTS

27. A method for constructing an electro-active lens comprising the activities of:

Ex. 1006, claim 27

layer. “Attaching” can include bonding, depositing, adhering, and other well-known attachment methods. A

Ex. 1006, 3:45-46

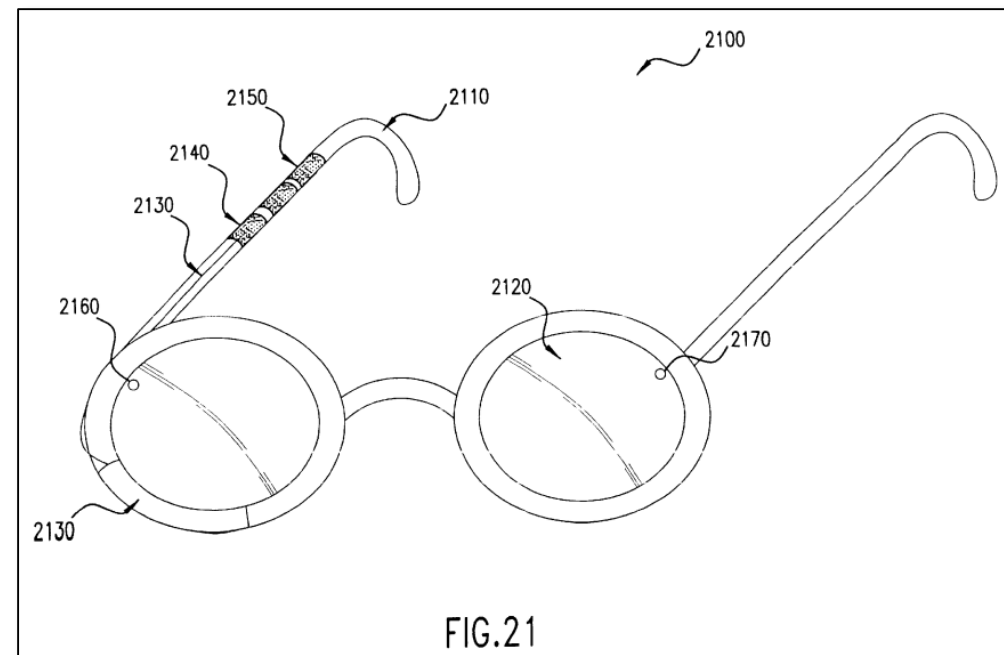


FIG.21

Ex. 1006, Fig. 21

The Prior Art in Grounds 1, 3, 6 and 7 Disclose the Method of Claim 13



explaining that the patent demonstrates that alleged invention was within scope of the ordinary skill in the art, “and it does so not by what [the patent] discloses but by what it **does not** disclose.”

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



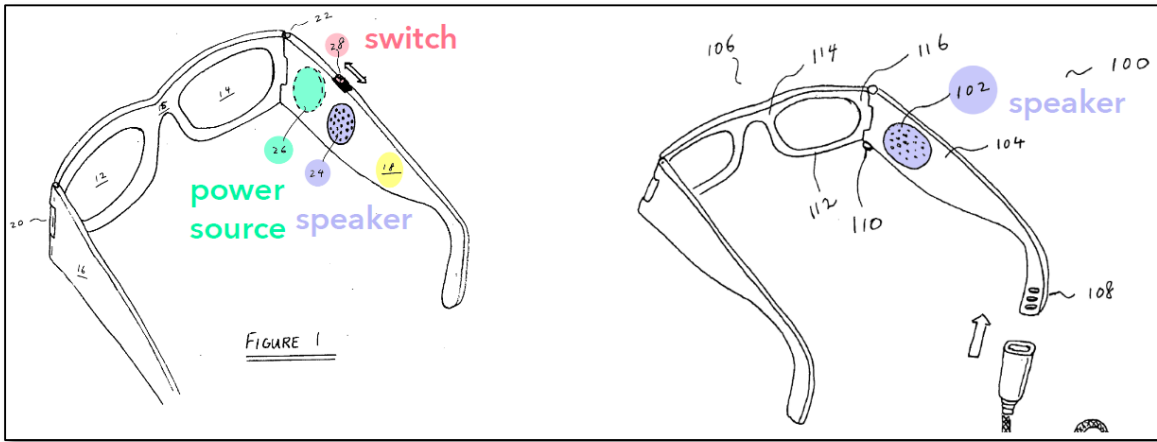
“[T]he Board's observation that appellant did not provide the type of detail in his specification that he now argues is necessary in prior art references supports the Board's finding that one skilled in the art would have known how to implement the features of the references and would have concluded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

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

Claim 14

Grounds 4 and 5

Ground 4 - Howell-719, Sikonowiz, and Howell-158 Render Claim 14 Obvious



Ex. 1004, Fig. 1 (annotated)

Ex. 1007, Fig. 21 (annotated)

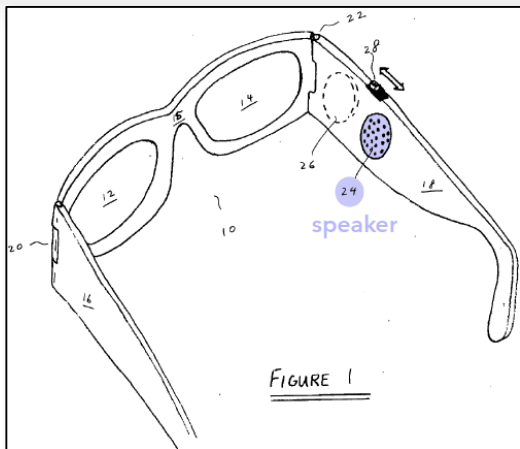
whether a user is wearing the glasses. *Id.* ¶163. Due to the close similarity between Howell-719 and Howell-158, it would have been obvious to a POSITA to incorporate Howell-158's accelerometer into Howell-719's glasses. Ex. 1002 ¶124. Howell-719's glasses would benefit from the ability to detect when a user is wearing the glasses. Howell-719 describes an embodiment using a magnetic or Hall effect

Petition, 44

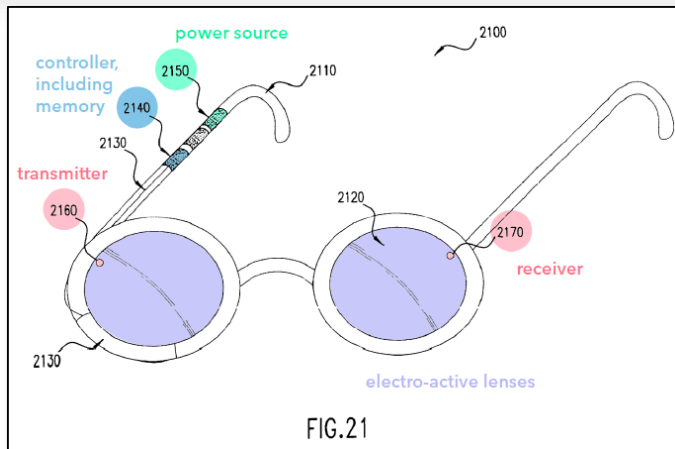
14. Eyewear comprising:
an eyewear frame comprising a temple;
a plurality of electronic components disposed within a cavity formed in the temple, the plurality of electronic components comprising (i) at least one of a processor or a controller, (ii) a memory, (iii) a power source, (iv) an antenna, (v) at least one of a transmitter or a receiver, and (vi) at least one of an accelerometer or a gyroscope;
a conformal coating, deposited over at least a portion of the plurality of electronic components, to protect the plurality of electronic components; and
a capacitive touch switch operably coupled to an electronic component in the plurality of electronic components.

Ex. 1001, claim 14

Ground 5 - Howell-719, Sikonowiz, and Blum-130 Render Claim 14 Obvious



Ex. 1004, Fig. 1 (annotated)



Ex. 1006, Fig. 21 (annotated)

1002 ¶ 130. Incorporating Blum-130's accelerometer- or gyroscope-based switch controls into Howell-719 represents using a simple substitution of one known alternative (accelerometer/gyroscope-based motion detector allowing for head movement to activate switch) for a component (physical switches) serving the same purpose (allowing the user to activate switch to control functionality while the user is wearing the glasses and cannot see the switches) with the added benefit of hands-free control. *Id.* Blum-130's disclosure of the accelerometer/gyroscope-based switch

Petition, 47

14. Eyewear comprising:

an eyewear frame comprising a temple;
a plurality of electronic components disposed within a cavity formed in the temple, the plurality of electronic components comprising (i) at least one of a processor or a controller, (ii) a memory, (iii) a power source, (iv) an antenna, (v) at least one of a transmitter or a receiver, and (vi) at least one of an accelerometer or a gyroscope;
a conformal coating, deposited over at least a portion of the plurality of electronic components, to protect the plurality of electronic components; and
a capacitive touch switch operably coupled to an electronic component in the plurality of electronic components.

Ex. 1001, claim 14

Howell-719 Teaches Multiple Switches

Sur-Reply, 3-4

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

II. CLAIM 14 IS PATENTABLE

Claim 14 requires both a capacitive touch switch and at least one of an accelerometer or gyroscope. But as Patent Owner explained in its response, none of Petitioner's four grounds establishes that a POSITA would have been motivated to create the claimed eyewear, which must include both controls.

A. Grounds 4 and 5: Claim 14 Is Patentable Over Howell-719, Sikonowiz, and Howell-158

For both grounds 4 and 5, Petitioner originally proposed *substituting* either Howell-158's accelerometer (ground 4) or Blum-130's gyroscope (ground 5) for Howell-719's "capacitive effect" sensor. (Pet., 44-47.) But as the Board correctly recognized in its institution decision in relation to ground 5, Petitioner's combination replaced Howell-719's switch with a different component. (Institution Decision, 29-30.) The Board's reasoning equally applies to ground 4 at least because Petitioner relies on the same rationale of *substituting* for Howell-719's capacitive effect sensor. (Pet., 44-47.) As such, neither combination includes the two different controls required by claim 14.

With respect to ground 4, claim 14 is patentable at least because Petitioner's combination effectively removes and replaces Howell-719's "capacitive effect" sensor with Howell-158's "accelerometer." (See Pet., 42-48 ("[i]ncorporating Howell-158's accelerometer-based 'being worn' detector thus represents using a *simple substitution*

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With respect to ground 4, claim 14 is patentable at least because Petitioner's combination effectively removes and replaces Howell-719's "capacitive effect" sensor with Howell-158's "accelerometer." (See Pet., 42-48 ("[i]ncorporating Howell-158's accelerometer-based 'being worn' detector thus represents using a *simple substitution* of one known alternative (accelerometer-based 'being worn' detector) for another, similar component (magnetic-based 'ready to be worn' detector) with predictable results.")). If a POSITA were to make the ground 4 combination, at least claim element 14[d] would be missing.

With respect to ground 5, claim 14 is patentable at least because Petitioner's combination effectively removes and replaces Howell-719's "capacitive effect" sensor with Blum-130's "gyroscope." (See Pet., 42-48 ("[i]ncorporating Blum-130's accelerometer- or gyroscope-based switch controls into Howell-719 represents using a simple substitution of one known alternative (accelerometer/gyroscope-based motion detector allowing for head movement to activate switch) for a component (physical switches).")) If a POSITA were to make the ground 5 combination, at least claim element 14[d] would not be satisfied.

Sur-Reply, 7

Ground 4 Does Not Eliminate The Capacitive Touch Switch

(19) **United States**
(12) **Patent Application Publication** (10) Pub. No.: US 2006/0023158 A1
Howell et al. (43) Pub. Date: Feb. 2, 2006

[0163] In one embodiment, a motion detector is used as a “being worn” sensor. A threshold can be set, such that if the amount of motion exceeds the threshold, the eyewear is assumed to be worn. The motion detector can, for example, be achieved by a mechanical means or an accelerometer.

Ex. 1007, [0163] (highlighting added)

(19) **United States**
(12) **Patent Application Publication** (10) Pub. No.: US 2005/0248719 A1
Howell et al. (43) Pub. Date: Nov. 10, 2005

[0081] The switch can be activated by magnetic forces 156. For example, there can be a magnetic sensor or a Hall effect detector inside a temple proximate to a joint of a pair of glasses. FIG. 6 shows a section of a pair of glasses 250 with such a detector 254. The detector 254 is electrically connected to a printed circuit board 255. When the temple 252 is in its extended position, as when the glasses 250 are ready to be worn, the detector 254 will be directly adjacent to a magnet 256 inside a lens holder 258 at the corresponding joint 260. The magnet 256 would activate the Hall effect

Ex. 1004, [0081] (highlighting added)

to detect motion and tilt. *Supra* §II.C; Ex. 1002 ¶¶46–48, 125. Incorporating Howell-158’s accelerometer-based “being worn” detector thus represents using a simple substitution of one known alternative (accelerometer-based “being worn” detector) for another, similar component (magnetic-based “ready to be worn” detector) with predictable results. Ex. 1002 ¶125. Howell-158’s disclosure of the

Petition, 45 (highlighting added)

Ground 5 Does Not Eliminate The Capacitive Touch Switch

IPR Petition – Patent 10,613,355
Luxottica of America Inc. v. e-Vision Optics, LLC

functionality of the glasses. *Id.* 30:39–45. In “another exemplary embodiment, a combination of a rangefinder and a microgyroscope” controls the switch. *Id.* 30:59–60.

Howell-719 describes that the user may operate switches to control audio while wearing the glasses. Ex. 1004 ¶93. Since the user might not be able to see the switches, Howell-719 describes using different tactile cues (rough versus smooth surface or different heights) to allow the user to distinguish between switches. Ex. 1002 ¶130. Incorporating Blum-130’s accelerometer- or gyroscope-based switch controls into Howell-719 represents using a simple substitution of one known alternative (accelerometer/gyroscope-based motion detector allowing for head movement to activate switch) for a component (physical switches) serving the same purpose (allowing the user to activate switch to control functionality while the user is wearing the glasses and cannot see the switches) with the added benefit of hands-free control. *Id.* Blum-130’s disclosure of the accelerometer/gyroscope-based switch in glasses highly similar to those of Howell-719 demonstrates a POSITA would have a reasonable expectation of success. *Id.*

In Ground 5 as well, element 14[b] would have been obvious.

3. 14[c]: conformal coating

Element 14[c] recites: “a conformal coating, deposited over at least a portion of the plurality of electronic components, to protect the plurality of electronic

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1002 ¶130. Incorporating Blum-130’s accelerometer- or gyroscope-based switch controls into Howell-719 represents using a simple substitution of one known alternative (accelerometer/gyroscope-based motion detector allowing for head movement to activate switch) for a component (physical switches) serving the same purpose (allowing the user to activate switch to control functionality while the user is wearing the glasses and cannot see the switches) with the added benefit of hands-free control. *Id.* Blum-130’s disclosure of the accelerometer/gyroscope-based switch

Petition, 47 (highlighting added)

focal distance as the person looked at objects at different distances. Manual switches relying on mechanical movement to close a circuit are susceptible to wear, fatigue, and loosening, which, over the course of repeated switching operations, can lead to eventual failure. Capacitive touch switches do not rely on mechanical movement, eliminating this source of failure. Additionally, using a capacitive touch switch

Ex. 1002, ¶148 (highlighting added)

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 IPR2024-01069
Patent 10,613,355

DECLARATION OF JOHN FELAND
IN SUPPORT OF PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 10,613,355

Luxottica Ex. 1002
IPR Petition USP 10,613,355

Howell-719 Discloses Use Of Multiple Switches

of the switch takes into consideration perception. To illustrate, there are two mechanical switches on the glasses. The top surfaces of the two switches have different texture. One switch has a smooth surface and the other has a rough surface. Pushing the rough surface implies incrementing one step and pushing the smooth surface implies decrementing one step. This type of perception design is based on tactile effect. In another example, the heights of the two switches are different. The taller switch is for one effect and the shorter is for another. In yet another embodiment, the lateral position of the two switches has significance. For example, the two mechanical switches are on the top surface or edge of a temple. By pushing the switch closer to the lens holder, the volume of the speaker in the glasses goes up; and by pushing the switch further away from the lens holder, the volume of the speaker goes down. In another example, the two switches are under the two ends of a piece of materials,

Ex. 1004, [0093] (highlighting added)

radio. If the glasses have two speakers, such as one on each of the temples, there can be two switches, one on each temple to control the corresponding speaker. The two speak-

Ex. 1004, [0074] (highlighting added)

[0087] As described, in a number of embodiments, the switch can provide different degrees or ranges of control. In one embodiment, there are two degrees of control, such as in an on/off switch. In another embodiment, there can be multiple discrete degrees, steps or positions. For example, the switch is a roller with discrete notches to indicate different discrete positions. Or, there can be two mechanical switches, placed side-by-side. Pushing one switch will increment one step, and pushing the other will decrement one step.

Ex. 1004, [0087] (highlighting added)

adjust the frequencies. In yet another embodiment, there can be one or more switches at the glasses to change the frequencies.

Ex. 1004, [0062] (highlighting added)

at a joint. The control can take perception into consideration, such as based on texture, height and lateral position of multiple switches.

Ex. 1004, [0075] (highlighting added)

Patent Owner's "Switch Type" Argument Fails

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

switch 28 for an accelerometer in an attempt to satisfy element 14[b], Petitioner cannot use switch 28 to also satisfy element 14[d].

Petitioner's reliance in the reply on Howell-719's "two switches" does not change this result. (Reply, 15.) At Howell-719 ¶74, cited by Petitioner in the reply, "two switches" are disclosed for glasses having two speakers, e.g., so that each speaker may be controlled by its own switch. (*Id.*, 15 (*citing* EX-1004, ¶74.) But Howell-719 does not disclose or suggest that the two related switches could be of a different type (e.g., capacitive effect and magnetic-based), and Petitioner has not provided a motivation for incorporating different switch *types* for each respective speaker. Indeed, it would be impractical and confusing to implement eyewear having a first switch type (e.g., capacitive effect) for operating a left speaker, while also having a second switch type (e.g., magnetic-based) for operating a right speaker. (*See* EX-2004, ¶¶64, 65.) And regardless, Howell-719 does not disclose or suggest the two-switch, two-function eyewear postulated by Petitioner.

At Howell-719 ¶93, also cited by Petitioner in the reply, again Howell-719 discloses "two switches" of the same type: a mechanical switch. (*Id.*, 15 (*citing* EX-1004, ¶93.) Not only does Howell-719 not show switches of different types, the discussion at Howell-719 ¶93 describes features for tactilely distinguishing between

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may be controlled by its own switch. (*Id.*, 15 (*citing* EX-1004, ¶74.) But Howell-719 does not disclose or suggest that the two related switches could be of a different type (e.g., capacitive effect and magnetic-based), and Petitioner has not provided a motivation for incorporating different switch *types* for each respective speaker. Indeed,

Sur-Reply, 5

"capacitive effect" switch of a different type. Howell-719's single switch is substituted for an accelerometer, and Howell-719 does not describe operating the accelerometer (Howell-719's switch, per Petitioner) with another switch of a different type. And it would not be obvious to add a second switch of a different type to Howell-719 because Howell-719 discloses no reason to deprecate the functionality of its eyewear by adding unnecessary switches of different types. (*See KSR International Co. v. Teleflex Inc.*,

Sur-Reply, 6-7

Howell-719 Discloses Various Switch Types

[0075] The switch in the glasses can have different attributes. It can be activated by different type of forces, including mechanical, radiation, magnetic, electrical, and temperature. The switch can also be activated remotely by a remote device. The switch can be based on one or more detectors. The switch can have different degrees or ranges of control, such as binary, multiple discrete steps or incremental control. The switch can be placed at different position on the glasses, such as on the side or top surface of a temple or at a joint. The control can take perception into consideration, such as based on texture, height and lateral position of multiple switches.

Ex. 1004, [0075] (highlighting added)

[0087] As described, in a number of embodiments, the switch can provide different degrees or ranges of control. In one embodiment, there are two degrees of control, such as in an on/off switch. In another embodiment, there can be multiple discrete degrees, steps or positions. For example, the switch is a roller with discrete notches to indicate different discrete positions. Or, there can be two mechanical switches, placed side-by-side. Pushing one switch will increment one step, and pushing the other will decrement one step.

Ex. 1004, [0087] (highlighting added)

[0093] In one embodiment, the user can be using a switch when the glasses are worn. Depending on the position and the type of switch, the user may not be able to see the switch when he is manipulating it. In one embodiment, the design of the switch takes into consideration perception. To illustrate, there are two mechanical switches on the glasses. The top surfaces of the two switches have different texture. One switch has a smooth surface and the other has a rough surface. Pushing the rough surface implies incrementing one step and pushing the smooth surface implies decrementing one step. This type of perception design is based on tactile effect. In another example, the heights of the two switches are different. The taller switch is for one effect and the shorter is for another. In yet another embodiment, the lateral position of the two switches has significance. For example, the two mechanical switches are on the top surface or edge of a temple. By pushing the switch closer to the lens holder, the volume of the speaker in the glasses goes up; and by pushing the switch further away from the lens holder, the volume of the speaker goes down. In another example, the two switches are under the two ends of a piece of materials, such as a rocker-lever, which can be plastic. Rocking the plastic piece forward is an increment motion, and rocking the plastic piece backwards is a decrement motion.

Ex. 1004, [0093] (highlighting added)

Patent Owner's “Switch Type” Argument Fails

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 IPR2024-01069
Patent 10,613,355

DECLARATION OF JOHN FELAND
IN SUPPORT OF PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 10,613,355

Luxottica Ex. 1002
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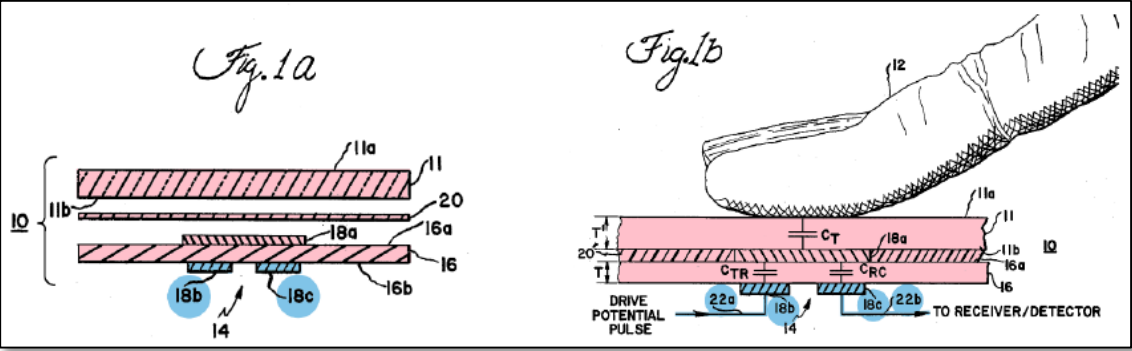
a user is wearing the glasses. *Id.* ¶ 163. Due to the close similarity between Howell-719 and Howell-158, it would have been obvious to a POSITA to incorporate Howell-158’s accelerometer into Howell-719’s glasses. Howell-719’s glasses would benefit from the ability to detect when a user is wearing the glasses. Indeed, Howell-

accelerometers to detect motion. Incorporating Howell-158’s accelerometer-based “being worn” detector thus represents using a simple substitution of one known alternative (accelerometer-based “being worn” detector) for another, similar component (magnetic-based “ready to be worn” detector) with predictable results.

Ex. 1002, ¶¶124-125, (highlighting added)

Ground 7

Blum-130, Sikonowiz, and Eichelberger Render Claim 14 Obvious



Ex. 1010, Figs. 1a-1b (annotated)

Eichelberger discloses a capacitive touch switch that includes a double-sided printed circuit board 16 on which electrodes 18b and 18c are fabricated. Ex. 1010 3:20–23, 3:43–47, 3:54–57.

circuit board. *Supra* § VII.A.2. A POSITA would have been motivated to use the capacitive touch switch from Eichelberger in Howell-719 because using a switch with a double-sided printed circuit board and the ability to mount electronics directly thereon would facilitate efficient use of space. Ex. 1002 ¶109; *see also* Ex. 1010 3:53–57 (teaching this as a “further advantage” of the double-sided PCB). Such efficiency is vital in designing eyewear with embedded electronics because the space for the electronics is limited. Ex. 1002 ¶109.

Petition, 39-40

14. Eyewear comprising:
an eyewear frame comprising a temple;
a plurality of electronic components disposed within a cavity formed in the temple, the plurality of electronic components comprising (i) at least one of a processor or a controller, (ii) a memory, (iii) a power source, (iv) an antenna, (v) at least one of a transmitter or a receiver, and (vi) at least one of an accelerometer or a gyroscope;
a conformal coating, deposited over at least a portion of the plurality of electronic components, to protect the plurality of electronic components; and
a capacitive touch switch operably coupled to an electronic component in the plurality of electronic components.

Ex. 1001, claim 14

**Eichelberger Is
Analogous Art**

Eichelberger Is From The Relevant Field Of Endeavor

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

Petitioner merely casts a wide, nebulous net in order to loop in as many tangential prior art documents as possible. This ignores the "reality of circumstances" that each of the '355 patent's claims, figures, background and detailed description directly concerns, enables, and describes "eyewear," and specifically "electronic eyewear." (EX-1001, cls. 1, 13, 14; FIGS. 1-27, 2:18-35, 6:66-28:63.) The inventor would thus have understood the relevant field to be eyewear, and not some undefined concept of any device sold to a consumer that uses electricity. Petitioner does not dispute that Eichelberger includes no specific disclosure of eyewear or how to apply its teachings specifically to eyewear. As such, Eichelberger does not address the same field of endeavor as the invention, and so Eichelberger fails prong 1 of the analogous art standard.

Second, Eichelberger is not reasonably pertinent to the problem faced by the inventor. Petitioner accuses Patent Owner of an overly narrow field that "conflates the alleged 'field' with the problem the '355 patent seeks to solve." (Reply, 22.) But Patent Owner's framing of the problem in terms of eyewear does not "exclude any reference outside of that field." (*Id.*, citing *Domer Tech., LLC v. Pro Stage Gear, LLC*, 979 F.3d 1353, 1360-61 (Fed. Cir. 2020).) Rather, other non-eyewear references could conceivably be applicable to the problem faced by the inventor—"moisture proof eyewear"—but only if such reference "logically would have commanded itself to [the]

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any device sold to a consumer that uses electricity. Petitioner does not dispute that Eichelberger includes no specific disclosure of eyewear or how to apply its teachings specifically to eyewear. As such, Eichelberger does not address the same field of endeavor as the invention, and so Eichelberger fails prong 1 of the analogous art standard.

Sur-Reply, 12 (highlighting added)

The Scope of Analogous Art is Broad



“Two separate tests define the scope of analogous prior art: (1) whether the art is from the **same field of endeavor**, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is **reasonably pertinent** to the particular problem with which the inventor is involved.”

In re Bigio, 381 F.3d 1320, 1325 (Fed. Cir. 2004)

The Scope of Analogous Art is Broad



“The Supreme Court’s decision in [KSR] directs us to construe the scope of analogous art broadly[.]”

Wyers v. Master Lock Co., 616 F.3d 1231, 1238 (Fed. Cir. 2010).



“[I]t is necessary to consider the reality of the circumstances—in other words, common sense—in deciding in which fields a person of ordinary skill would reasonably be expected to look[.]”

In re Bigio, 381 F.3d 1320, 1326 (Fed. Cir. 2004).

Eichelberger Is Directed To Consumer Electronics

United States Patent [19] [11] **4,290,052**
Eichelberger et al. [45] **Sep. 15, 1981**

Accordingly, it is desirable to provide a capacitive touch entry panel structure having capacitive touch entry sensors so positioned as to provide **a high degree of user safety** and sensor reliability, with low manufacturing costs therefor.

Due to the contactable nature of the touch pad electrode **60a** and **61a** of the prior art apparatus, relatively large spacings therebetween is required. That is, if the front surface **63a** of the insulator substrate is **covered with water or detergent and the like, as often happens with appliances** (wherein touch pad sensors are often utilized), the increase in dielectric constant due to the water, or the conductive effects due to surface contamination, will form a parasitic impedance **Z_{PARASITIC}**

Ex. 1010, 1:56-60, 7:29-37 (highlighting added)

(12) **United States Patent** (10) **Patent No.: US 10,613,355 B2**
Blum et al. (45) **Date of Patent: Apr. 7, 2020**

BACKGROUND

The present subject matter relates to various types of eyewear **including electronic functional members**, including, for example, **electronic focusing eyeglasses**, electro-active eyeglasses, electronic eyewear providing 3D capabilities, etc.

Ex. 1001, 2:18-22 (highlighting added)

Eichelberger Is Reasonably Pertinent



“[R]eferences are ‘reasonably pertinent’ only if ‘a person of ordinary skill would reasonably have consulted those references and applied their teachings in seeking a solution to the problem that the inventor was attempting to solve.’”

Airbus S.A.S. v. Firepass Corp., 941 F.3d 1374, 1382 (Fed. Cir. 2019) (quoting *In re GPAC Inc.*, 57 F.3d 1573, 1578 (Fed. Cir. 1995)).

Eichelberger Is Reasonably Pertinent

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

Petitioner merely casts a wide, nebulous net in order to loop in as many tangential prior art documents as possible. This ignores the "reality of circumstances" that each of the '355 patent's claims, figures, background and detailed description directly concerns, enables, and describes "eyewear," and specifically "electronic eyewear." (EX-1001, cls. 1, 13, 14; FIGS. 1-27, 2:18-35, 6:66-28:63.) The inventor would thus have understood the relevant field to be eyewear, and not some undefined concept of any device sold to a consumer that uses electricity. Petitioner does not dispute that Eichelberger includes no specific disclosure of eyewear or how to apply its teachings specifically to eyewear. As such, Eichelberger does not address the same field of endeavor as the invention, and so Eichelberger fails prong 1 of the analogous art standard.

Second, Eichelberger is not reasonably pertinent to the problem faced by the inventor. Petitioner accuses Patent Owner of an overly narrow field that "conflates the alleged 'field' with the problem the '355 patent seeks to solve." (Reply, 22.) But Patent Owner's framing of the problem in terms of eyewear does not "exclude any reference outside of that field." (*Id.*, citing *Domer Tech., LLC v. Pro Stage Gear, LLC*, 979 F.3d 1353, 1360-61 (Fed. Cir. 2020).) Rather, other non-eyewear references could conceivably be applicable to the problem faced by the inventor—"moisture proof eyewear"—but only if such reference "logically would have commanded itself to [the]

12

Second, Eichelberger is not reasonably pertinent to the problem faced by the inventor. Petitioner accuses Patent Owner of an overly narrow field that "conflates the Sur-Reply, 12

Cir. 2011). Here, Eichelberger would not have commanded itself to the inventor's attention. As one example, the inventor would have understood that Eichelberger's teaching of large format switches (up to a "one-half inch square") and rudimentary designs from the early 1980s, such as that shown in Eichelberger FIG. 1b, would have likely been inapplicable to demands of complex, moisture-proof eyewear.

Sur-Reply, 13 (highlighting added)

Eichelberger Is Reasonably Pertinent

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Case IPR2024-01069
Patent 10,613,355

DECLARATION OF JOHN FELAND
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,613,355

Luxottica Ex. 1002
IPR Petition USP 10,613,355

177. Incorporating Eichelberger's capacitive touch switch would also constitute a simple substitution or addition of a specific known type of switch (capacitive touch switch) for or to a genus of switches disclosed in Blum-130 (manual switch). Capacitive touch switches had been known for decades. Considering the prevalence of capacitive touch switches in consumer electronics, including in glasses as disclosed in Howell-719, a POSITA would have a reasonable expectation of success.

Ex, 1002, ¶177 (highlighting added)

Eichelberger Is Reasonably Pertinent

(12) United States Patent Blum et al.	(10) Patent No.: US 10,613,355 B2 (45) Date of Patent: Apr. 7, 2020
(54) MOISTURE-RESISTANT EYE WEAR	(58) Field of Classification Search

Electro-active eyewear or electronic eyewear may be exposed to moisture and liquids. Such moisture may come from the natural environment (e.g., rain, snow), from the human body in the form of oils and perspiration, and from consumer products such as liquid lens cleaners and cosmetics. The ingress of such materials into and between the electronic components of the eyewear can cause damage, e.g., electrical short circuits. In particular, salt residue, e.g.,

Ex. 1001, 13:4-12 (highlighting added)

United States Patent [19] Eichelberger et al.	[11] 4,290,052 [45] Sep. 15, 1981
[54] CAPACITIVE TOUCH ENTRY APPARATUS HAVING HIGH DEGREE OF PERSONAL SAFETY	4,123,631 10/1978 Lewis 340/365 C FOREIGN PATENT DOCUMENTS

Due to the contactable nature of the touch pad electrode 60a and 61a of the prior art apparatus, relatively large spacings therebetween is required. That is, if the front surface 63a of the insulator substrate is covered with water or detergent and the like, as often happens with appliances (wherein touch pad sensors are often utilized), the increase in dielectric constant due to the water, or the conductive effects due to surface contamination, will form a parasitic impedance ZPARASITIC

Ex. 1010, 7:29-37 (highlighting added)

Patent Owner's Final Argument Mischaracterizes Blum-130

Patent Owner's Sur-Reply to
Petitioner's Reply for *Inter Partes* Review
U.S. Patent No. 10,613,355

would not have found a capacitive switch operable in Blum-130 for many reasons, including that such capacitive switch would be an inappropriate mechanism by which to implement the "continuous variance" functionality or the on/off moveable "switch positions" required by Blum-130. (§ II.B, *supra*; EX-1006, 28:37-58.)

Accordingly, Eichelberger is non-analogous art and a POSITA would have lacked the motivation to combine the prior art teachings.

III. CLAIM 1 IS PATENTABLE

A. Ground 1: Claim 1 Is Patentable Over Howell-719 and Sikonowiz

Petitioner's ground 1 argument for claim 1 rests on three faulty positions articulated again in its reply. (Reply, 1-9). Claim 1 (and its dependents) are patentable over ground 1 because Petitioner has not shown motivation to combine Howell-719 and Sikonowiz.

First, Petitioner's reply attempts to map Sikonowiz as analogous art to the '355 patent. (Reply, 2-5.) However, Sikonowiz fails both prongs of the analogous art test. Sikonowiz is neither from the same field of endeavor as the claimed invention nor "reasonably pertinent to the particular problem with which the inventor is involved." *Sanofi-Aventis*, 66 F.4th at 1377 (citing *In re Bigio*, 381 F.3d at 1325, with approval.)

Sikonowiz is not from the same field of endeavor because it does not concern eyewear. The challenged patent, including the "function[] and structure of the claimed invention" informs the applicable field of endeavor. *Airbus S.A.S.*, 941 F.3d at 1380

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Moreover, even if a POSITA were to employ non-analogous art, there would still be no motivation to combine a capacitive touch switch with the Blum-130 eyewear. For example, and as demonstrated herein in relation to ground 6, a POSITA would not have found a capacitive switch operable in Blum-130 for many reasons, including that such capacitive switch would be an inappropriate mechanism by which to implement the "continuous variance" functionality or the on/off moveable "switch positions" required by Blum-130. (§ II.B, *supra*; EX-1006, 28:37-58.)

Sur-Reply, 13-14 (highlighting added)

Patent Owner's Final Argument Mischaracterizes Blum-130

US06733130B2

(12) United States Patent
Blum et al.

(10) Patent No.: US 6,733,130 B2
(45) Date of Patent: *May 11, 2004

(54) METHOD FOR REFRACTING AND DISPENSING ELECTRO-ACTIVE SPECTACLES

(75) Inventors: Ronald D. Blum, Roanoke, VA (US);
Dwight P. Dustin, Laguna Niguel, CA (US);
Dan Katzman, Upper Galilee (IL)

(73) Assignee: E-Vision, LLC, Roanoke, VA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 10/281,204

(22) Filed: Oct. 28, 2002

(65) Prior Publication Data
US 2003/0058406 A1 Mar. 27, 2003

Related U.S. Application Data
US 2003/0058406 A1 Mar. 27, 2003

(63) Continuation of application No. 09/602,014, filed on Jun. 23, 2000, now Pat. No. 6,491,304.

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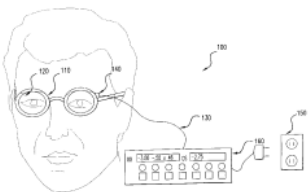
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(57) ABSTRACT

An electro-active spectacle lens is disclosed. The disclosed lens includes a first lens optic. The disclosed lens also includes a first electro-active zone positioned in a cooperative relationship with the first lens optic. In certain embodiments, the electro-active lens includes a range finder positioned in a cooperative relationship with the electro-active lens.

36 Claims, 21 Drawing Sheets



In order to provide a variable focal length to the user, the electro-active lenses are switchable. At least two switch positions are provided, however, more are provided if needed. In the simplest embodiment, the electro-active lenses are either on or off. In the off position, no current

Ex. 1006, 28:37-41 (highlighting added)

add power in the electro-active assemblies. If a mid-field correction is desired, a third switch position can be included. The switch could be microprocessor controlled, or manually user controlled. In fact, there could be several additional positions included. In another embodiment, the switch is analog not digital, and provides continuous variance of the focal length of the lens by adjusting a knob or lever much like a volume control on a radio.

Ex. 1006, 28:51-58 (highlighting added)