

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD**

In re U.S. Patent No. 8,967,797 B2

Filed: August 27, 2014

Issued: March 3, 2015

Inventor: Stephen Kurtin

Assignee: Superfocus Holdings LLC

Title: Adjustable Focus Spectacles

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**PETITION FOR *INTER PARTES* REVIEW OF UNITED
STATES PATENT NO. 8,967,797 PURSUANT TO
35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42**

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Exhibit 1002	U.S. Patent No. 8,708,487 to Kurtin
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Exhibit 1005	U.S. File History Application No. 14/470,884
Exhibit 1006	U.S. File History Application No. 14/018,186
Exhibit 1007	U.S. File History – Application No. 12/928,241
Exhibit 1008	U.S. Patent No. 8,777,408 to Kurtin
Exhibit 1009	Comparison of ‘797 patent independent claims 1, 3, 9, and 15
Exhibit 1010	U.S. Patent No. 7,142,369 to Wu <i>et al.</i> (Issued Nov. 28, 2006)
Exhibit 1011	U.S. Patent No. 5,526,067 to Cronin (Issued June 11, 1996)
Exhibit 1012	U.S. Patent No. 5,371,629 to Kurtin (Issued December 6, 1994)
Exhibit 1013	U.S. Patent No. 1,269,422 to Gordon (Issued June 11, 1918)

I. INTRODUCTION

Petitioner Adlens USA, Inc. and Adlens, Ltd. (collectively “Adlens”) requests an *Inter Partes* Review (“IPR”) of claims 1–17 (collectively, the “Challenged Claims”) of U.S. Patent No. 8,967,797 (the “’797 Patent” or “Kurtin ‘797” (Ex. 1001)) in accordance with 35 U.S.C. §§ 311–19 and 37 C.F.R. § 42.100 *et seq.*

II. MANDATORY NOTICES

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

Pursuant to 37 C.F.R. § 42.8(b)(1), Petitioner certifies that Adlens USA, Inc. and Adlens, Ltd. are the real parties in interest (collectively, “RPI”). The RPI hereby certifies the following information: Adlens USA, Inc. is a wholly owned subsidiary of Adlens, Ltd.

B. Related Judicial and Administrative Matters Under 37 C.F.R. § 42.8(b)(2)

Pursuant to 37 C.F.R. § 42.8(b)(2), Petitioner states the ‘797 Patent is related to U.S. Patent No. 8,708,487 to Kurtin (the “’487 Patent” (Ex. 1002)). The ‘797 Patent is a continuation of and claims priority to the ‘487 Patent. Filed concurrently with this Petition is another petition requesting institution of an IPR of the ‘487 Patent. The ‘487 Patent has been the subject of the following lawsuit: Superfocus Holdings LLC. v. Adlens USA, Inc. and Lenscrafters, Inc., D. Mass 1:14-cv-14189-LTS (D. Mass) (the “Superfocus litigation.”). Superfocus Holdings

LLC (“Superfocus”) filed a complaint against Adlens USA, Inc. and Lenscrafters, Inc., alleging patent infringement of the ‘487 Patent. On March 11, 2015, the parties filed a Joint Stipulation of Dismissal without Prejudice of All Claims and Counterclaims. The case was thereafter dismissed without prejudice on March 11, 2015.

C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Adlens provides the following designation of counsel:

LEAD COUNSEL	BACK-UP COUNSEL
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D. Service Information Under 37 C.F.R. § 42.8(b)(4)

Adlens respectfully requests that all correspondence/service be addressed to counsel at the address provided in Section II.C. Adlens also consents to electronic service by e-mail at jbauer@mintz.com and bamatvenko@mintz.com.

III. PAYMENT OF FEES – 37 C.F.R. § 42.103

Adlens authorizes the United States Patent and Trademark Office (“USPTO”) to charge Deposit Account No. 50-0311 for the fee set forth in 37

C.F.R. § 42.15(a) for this Petition and further authorizes payment for any additional fees to be charged to this Deposit Account.

IV. REQUIREMENTS FOR IPR UNDER 37 C.F.R. § 42.104

A. Grounds For Standing Under 37 C.F.R. § 42.104(a)

Adlens certifies that the ‘797 Patent is available for an IPR and that Adlens is not barred or estopped from requesting an IPR challenging claims 1-17 of the ‘797 Patent on the grounds identified in this Petition.

B. Challenge Under 37 C.F.R. § 42.104(b) and Relief Requested

Petitioner respectfully requests review under 35 U.S.C. § 311 of claims 1-17 of the ‘797 Patent and the cancellation of those claims as unpatentable. Further, Adlens requests that claims 1-17 of the ‘797 Patent be cancelled as unpatentable on the grounds set forth in the below chart outlining the statutory grounds on which each challenge to the claims is based and the patents relied upon for each ground. The claim construction, reasons for unpatentability, and specific evidence supporting this request are detailed below.

Ground	‘797 Patent Claims	Basis for Rejection
Ground 1	Claims 3-17	Unpatentable under 35 U.S.C. §102(b) as Anticipated by Cronin (Pre AIA)
Ground 2	Claims 1-17	Unpatentable under 35 U.S.C. §103(a) as Being Rendered Obvious by Kurtin ‘532 in View of Kurtin ‘629 and Gordon (Pre AIA)

C. Person of Ordinary Skill In The Art

A person of ordinary skill in the art (“POSA”) would have at least an undergraduate degree in optics or mechanical engineering, and 3 years of work experience (or a graduate degree) in the field of fluid filled optical lenses, including the design thereof. *See* Declaration of Nickolaos Savidis Decl., ¶19 (Ex. 1003).

D. Claim Construction Under 37 C.F.R. § 42.104(b)(3)

1. Broadest Reasonable Construction

A claim subject to an IPR receives the “broadest reasonable construction in light of the specification of the patent in which it appears.” Unless otherwise noted below, Petitioner accepts, for purposes of this IPR only, that the claim terms of the ‘797 Patent are presumed to take on the ordinary and customary meaning that they would have to one of ordinary skill in the art.¹

¹ Because the standards of claim interpretation applied in litigation differ from USPTO proceedings, any interpretation of claim terms in this IPR is not binding upon Petitioner in any litigation related to the ‘797 Patent, or any related patent or patent application. *See In re Zletz*, 13 U.S.P.Q.2d 1320, 1322 (Fed. Cir. 1989).

2. “Inclined Ramp”

For purposes of this Petition only², Petitioner assumes *arguendo* that the term, “inclined ramp,” as used in claims 6, 10, 14, and 16 encompasses threads of a screw or nut. *See* claim 17 (“wherein the inclined ramp is in the form of threads of a screw”).

V. REASONS FOR THE REQUESTED RELIEF

The full statement of the reasons for the relief requested is as follows.

A. The Kurtin ‘797 Patent (Ex. 1001)

The ‘797 Patent is directed to adjustable, liquid filled, variable focus eyeglasses in which the optical power of each liquid filled lens can be independently and manually adjusted. *See* Ex. 1001: Abstract; 1:56-58; Savidis Decl., ¶35 (Ex. 1003).

Manually adjustable, liquid filled, variable focus eyeglasses were known in the art well prior to December 6, 2010, the priority filing date of the ‘797 Patent. In these eyeglasses, a fixed volume of non-compressible liquid is typically encased between a rigid lens on one side, a flexible membrane having circumferential structural support on the other, and a flexible side wall that forms

² Outside of this IPR, Petitioner reserves its right to assert that the plain and ordinary meaning of the claim term “inclined ramp” does not include threads of a screw or nut. *See In re Zletz*, supra, 13 U.S.P.Q.2d at 1322.

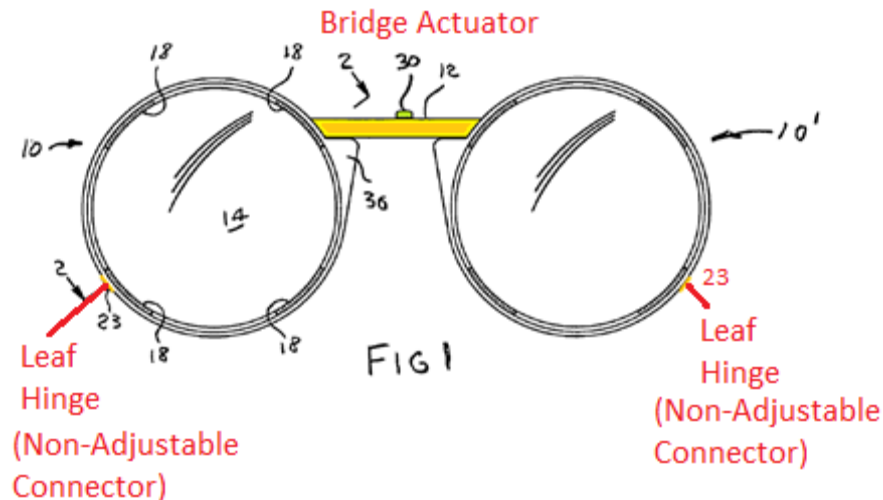
a seal between the rigid lens and the membrane's circumferential structural support. By changing the distance between the circumferential structural support of the membrane and the rigid lens, the optical power of the liquid filled lens can be changed. For example, by decreasing the distance between the circumferential structural support of the membrane and the rigid lens, the non-compressible liquid will cause the membrane to increase its convexity by bulging out, resulting in an increase in optical power. Alternatively, extending the length between the circumferential structural support of the membrane and the rigid lens will cause the membrane to decrease its convexity, thereby decreasing the optical power of the liquid filled lens. *See* Ex. 1001: 2:13-28; Savidis Decl., ¶36 (Ex. 1003).

A specific example of prior art eyeglasses having manually adjustable, liquid filled, variable focus lenses is found in U.S. published application 2008/0084532 to Kurtin (the “'532 Application,” or “Kurtin '532” (Ex. 1004)). This application, incorporated by reference into the disclosure of the '797 Patent (1:57-67), provides the vast majority of the structural features of the eyeglasses described and claimed in the '797 Patent, and therefore, will be described in this section in detail. *See* Savidis Decl., ¶37.

The '532 Application's manually adjustable, liquid filled, variable focus lenses have a bridge “actuator” that changes the optical power of each lens simultaneously by simultaneously changing the distance between each lens'

membrane support structure and its respective rear lens at a location near the bridge.

See Ex.1004: ¶¶ 27, 34, and 37; *see* Savidis Decl., ¶38. Figure 1 shows the eyeglasses of the ‘532 Application. (Shading and red annotations are added).³ *See* Savidis Decl., ¶38.



Figures 2, 3 and 4 show the eyeglasses of Figure 1 in more detail. To adjust the optical power of the fluid filled lens, Figure 3 shows that extending actuator link 13 increases the distance between membrane support structure front ring 19 and rear lens 15 holding rear ring 20. Consequently, membrane 22 will assume a less convex shape and liquid filled lens 16 will provide decreased optical power. Conversely, Figure 4 shows retracting actuator link 13 will decrease the distance between membrane support structure front ring 19 and rear

³ All colored shading and red labeling of the Figures in the Petition and supporting Exhibits has been added by Petitioner.

lens 15 holding rear ring 20. Consequently, membrane 22 will assume a more convex shape, resulting in liquid filled lens 16 providing increased optical power.

See Ex.1004: ¶¶ 18, 19, 27, 34, and 37; Savidis Decl., ¶39.

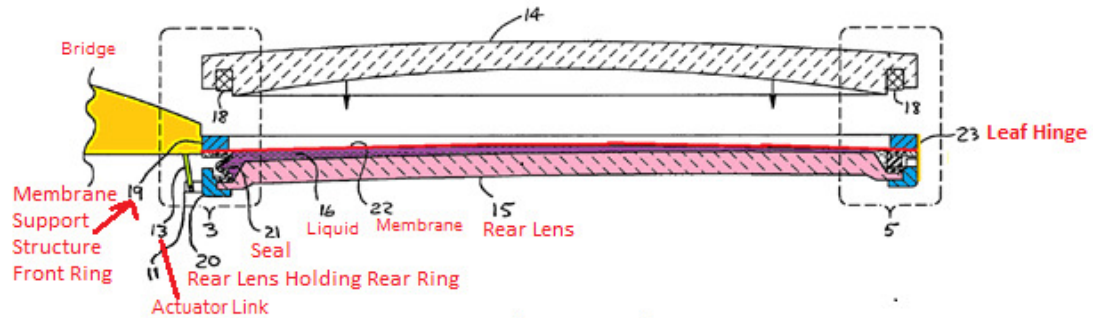


Figure 2 - '532 Application

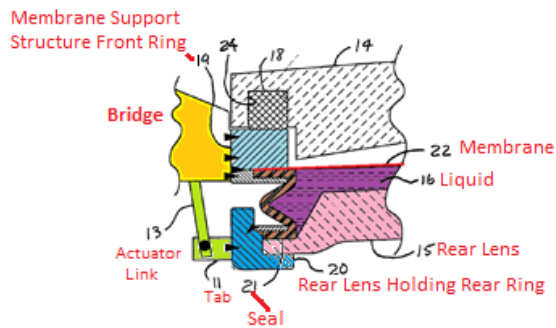


Figure 3-'532 Application

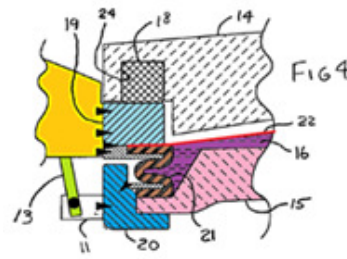


Figure 4 - '532 Application

Located across from the eyeglass frame's bridge at location 5 in Figure 2 is a non-adjustable "leaf hinge" connector 23 that connects membrane support structure front ring 19 to rear lens 15 holding rear ring 20. An exploded view of the non-adjustable leaf hinge connector 23 is shown in Figures 5 and 6 of the '532 application. See Ex.1004: ¶¶ 20, 21, 33, and 40; Savidis Decl., ¶40.

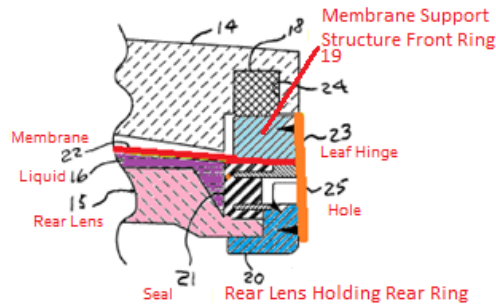


Figure 5 - '532 App.

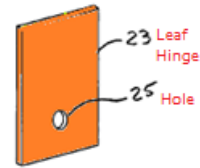


Figure 6 - '532 App.

The purported invention of the '797 Patent is the replacement of the non-adjustable connector of the '532 Application with an adjustable structure (called a “vision compensation mechanism” in the specification (Ex. 1001: 3:31-40)) and “adjustable element,” “adjustable mechanism,” or “controllable spacing member” in claims 3-8, 9-14, and 15-17, respectively) that can change the distance between the membrane support structure front ring 19 and rear lens holding rear ring 20, and thereby, change the focal length (optical power) of the fluid filled lens. *See* Savidis Decl., ¶41. The '797 Patent states:

The invented fluctuating vision compensation mechanism is shown herein ...

The variable lens described in US Patent Application Publication No. 2008/0084532 includes a rigid lens (referred to as the “rear” lens) spaced away from a distensible membrane, the intervening space being filled with a transparent optical liquid. Both the rigid lens and the membrane are held by spaced rings (which, in the preferred embodiment, are circular). A flexible sealing member in the space between the rings keeps the optical liquid from escaping. The inter-

ring spacing at a point near the bridge is varied by an actuator located within the bridge, and the inter-ring spacing at a point substantially opposite said point near the bridge is set by a leaf hinge [23]...

In the present invention the leaf hinge [23] mentioned above is replaced by a hinge means with controllable axial length ('H/CAL') which can be manually set by the wearer.

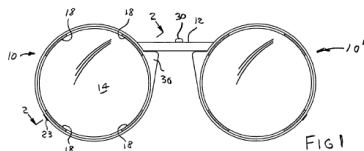
Ex. 1001: 3:36-37; 2:13-24, 31-33, respectively (emphasis added); *see also* 3:37 – 4:11.

In lieu of a leaf hinge as is the case in the '532 application, at location 100, the lens unit has an adjustable connector (also called vision compensation mechanism)...

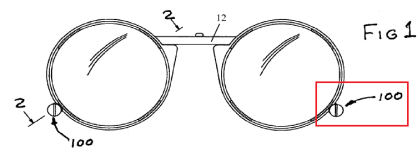
Ex. 1007, pg. 107 (emphasis added); Savidis Decl., ¶41.

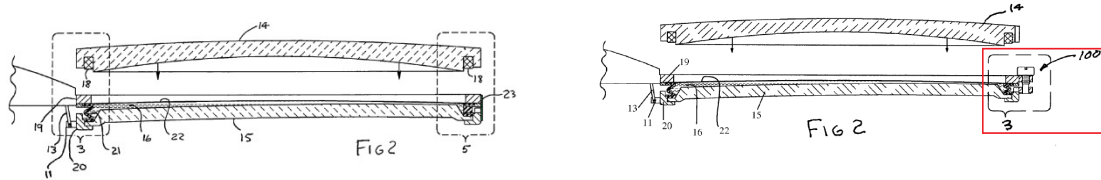
Indeed, a side by side comparison of Figures 1 and 2 of the '532 Application and '797 Patent, respectively, confirms that the sole structural difference between the two specifications is the adjustable structure located near the temples at position 100 (marked in red).

'532 Application – Figs 1 and 2



'797 Patent – Figs. 1 and 2





In that regard, the ‘797 Patent states:

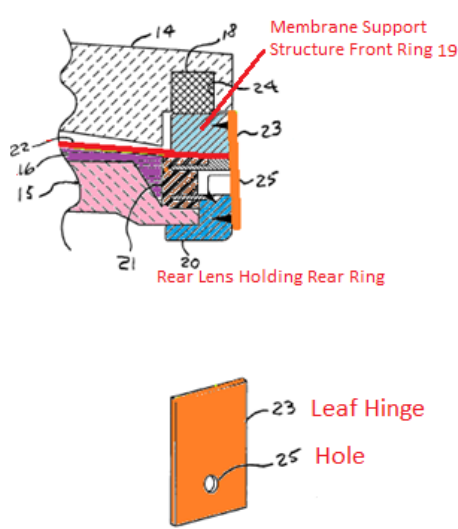
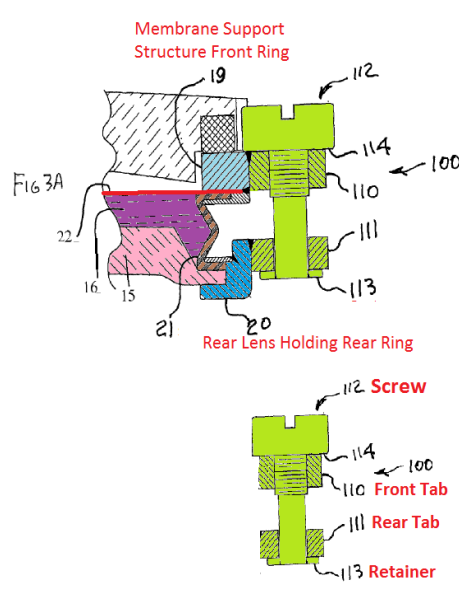
The [invention] is shown herein as applied to a pair of variable focus spectacles similar to those described in Patent Application Publication 2008/0084532. For convenience, each component that also appears in the [‘532] patent publication is shown having the same identification number as in that publication, including, in particular, the distensible membrane 22, the transparent optical liquid 16, rear lens 15, bridge 12, the actuator link 13, and the tab 11 of the rear ring 20. The link 13, which is a part of the above-mentioned actuator, pushes the tab 11 to accomplish a change of the inter-ring spacing at a point near the bridge as described earlier. Components that are unique to the fluctuating vision compensation mechanism are given numbers over 100.

3:36-49 (emphasis added). See Savidis Decl., ¶¶43.

The ‘532 Application’s non-adjustable connector and ‘797 Patent’s adjustable structure are shown side by side below. The Figures plainly reveal that the inventor merely replaced (a) the perpendicularly⁴ oriented non-adjustable leaf hinge 23 that connects membrane support structure front ring 19 to rear lens

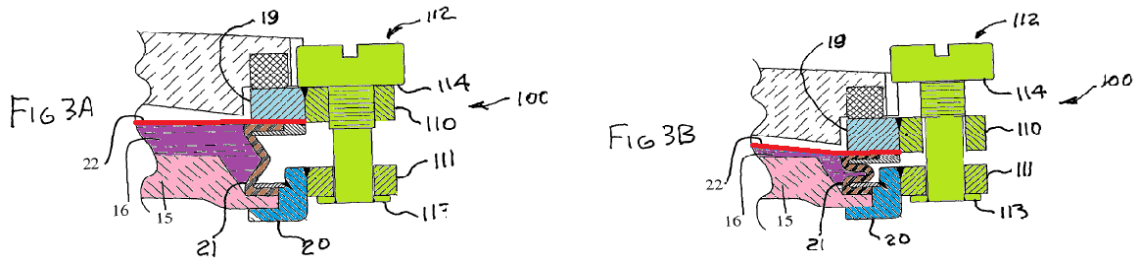
⁴ Perpendicular means perpendicular to the lens.

holding rear ring 20 with (b) a perpendicularly oriented retained screw 112 that similarly connects membrane support structure front ring 19 to rear lens 15 holding rear ring 20, albeit via front tab 110 and rear tab 111, respectively. *See* Savidis Decl., ¶44.

'532 App. Non-Adjustable Connector (Prior Art)	'797 Patent Adjustable Structure
 <p>Figures 5 and 6 - '532 Application</p>	 <p>Figure 3A - '797 Patent</p>

To adjust the optical power of the '797 Patent's fluid filled lens, screw 112 is manually rotated, thereby changing the distance between membrane support structure front ring 19 and rear lens holding rear ring 20. *See* Ex.1001: 3:60- 4:2: "FIG. 3A shows the mechanism set to provide minimum optical sphere, whereas

FIG. 3B shows the mechanism set to provide maximum optical sphere.” *Id.*, 3:60-62; Savidis Decl., ¶45.



B. Prosecution History of the ‘797 Patent (Ex. 1001)

1. Introduction

The ‘797 Patent was filed August 27, 2014 as application No. 14/470,884 (the “‘884 Application” (Ex. 1005)). The ‘884 Application was a continuation of application No. 14/251,151, filed Apr. 11, 2014, which is a continuation of application No. 14/018,186 (Ex. 1006), now U.S. Patent No. 8,708,487, which is a continuation of application No. 12/928,241 (Ex. 1007), now U.S. Patent No. 8,777,408 (Ex. 1008).

2. Application 14/470,884 (filed August 27, 2014) (Ex. 1005)

The ‘884 application as originally filed contained seventeen claims, of which claim 1, 3, 9, and 15 were independent. Except for the limitations covering the adjustable structure, the independent claims are essentially identical.⁵

⁵ A comparison of the independent claims of the ‘797 Patent is attached as Exhibit 1009.

Claim 3 is representative. The bolded limitations are common to all of the independent claims and the italicized language covers the adjustable structure.

3. Variable focus spectacles comprising **first and second lens units**, each lens unit comprising:

a **transparent member**;

a **membrane support structure**, having an opening therein, being disposed adjacent to and within a field of view of the transparent member;

a **transparent membrane** attached to the membrane support structure across the opening;

a **flexible seal** extending between the transparent member and the membrane support structure, the flexible seal permitting motion between the transparent member and the membrane support structure;

liquid having a predetermined index of refraction substantially filling a space between the transparent member and the membrane support structure within the seal; and

an adjustable element allowing adjustment of a distance between the transparent member and the membrane support structure at one location around a periphery of the membrane support structure

while, at another location along the periphery of the membrane support structure, a distance between the transparent member and the membrane support structure is kept unchanged,

wherein the adjustable elements of the first and second lens units are manually adjustable independently of each other

Ex. 1005, pp. 102-103.

A first office action issued October 15, 2014. *See* Ex.1005, pp. 47-63. Claims 1-7, 9-10, and 15-16 were rejected as being rendered obvious by Kurtin's '532 Application (Ex. 1004) and U.S. Patent No. 7,142,369 to Wu et al. ("Wu" (Ex. 1010)). The Examiner concluded that the '532 Application described all of the claim limitations, except for the manually adjustable structure limitations being independently adjustable. *Id.*, p. 54. The Examiner further found that Wu described independently adjustable structures, and therefore, when combined with Kurtin '532, rendered the claimed invention obvious. *Id.*, pp. 54-55. In addition, claims 1-17 were rejected for obviousness type double patenting over two of Kurtin's related patents: 8,708,487 (Ex. 1002) and 8,777,408 (Ex. 1008). *See* Ex.1005, pp. 50-51.

On November 18, 2014, an Interview took place. The Interview Summary states:

Examiner and Applicant's representative discussed proposed amendments to the claims. To the independent claims, Applicant proposed amendments clarifying that the independent movement is between the transparent member and the membrane support structure. To claims 2 and 7, Applicant suggested clarifying "spaced apart"; to claims 10 and 16 clarifying the inclined plane to an inclined ramp. Examiner agreed the proposed amendments appear to overcome the combination of the cited references, however further search and consideration would be required

Ex. 1005, p. 32.

On November 19, 2014 Applicant filed an Amendment (*See* Ex.1005, pp. 34-43) in which Applicant amended each independent claim to require that the manually adjustable structure “independently change the respective distances between the respective transparent members and the corresponding membrane support structures at the respective one locations.” *Id.* pp. 35-39.

Applicant argued that Wu’s independently adjustable structure did not function by changing the distance between the respective transparent members and the corresponding membrane support structures, but rather, by changing the radius of rotatable impellers. *See* Ex.1005, p. 42. Furthermore, because of the different structures and working principles, there were no obvious ways to combine the two structures of Wu and Kurtin ‘532. *Id.* Applicant did not argue that Kurtin ‘532 did not describe the other features of the claims.

On December 19, 2014, Applicant filed a Terminal Disclaimer for the ‘487 Patent. *See* Ex.1005, p. 23-24. A Notice of Allowability issued January 22, 2015. The “reasons for allowance” state:

Regarding claims 1, 3, 9 and 15, *see* Applicant's remarks filed November 19, 2014 pages 8-9 regarding the teachings of Kurtin and Wu as it pertains to the amended subject matter which requires the manual independent change of the distance between the respective membrane support structures as claimed and recited.

Ex. 1005, p. 12.

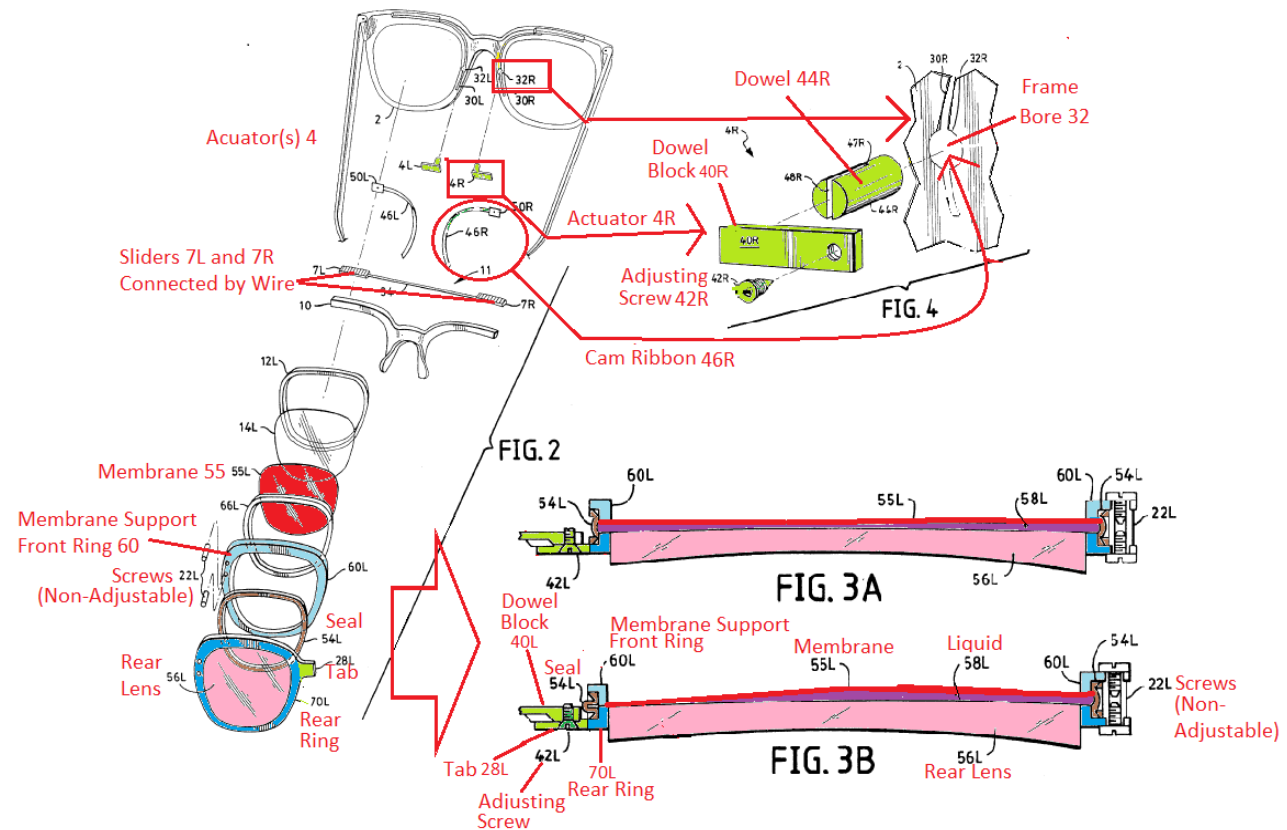
C. The Prior Art of the Present Request

1. U.S. Patent No. 5,526,067 to Cronin (“Cronin” (Ex. 1011))

Cronin⁶ is directed to manually adjustable, liquid filled, variable focus eyeglasses in which the optical power of both liquid filled lenses can be adjusted simultaneously and further adjusted individually (or vice versa). Savidis Decl.,

⁶ Cronin was not applied by the Examiner during the prosecution of the ‘884 application. Cronin was, however, applied by the Examiner during the prosecution of the ‘884’s great grandparent ’241 application (Ex. 1007) that led to the issuance of the ‘408 Patent (Ex. 1008) which has claims significantly different from those issued in the ‘797 Patent. The Examiner did not assert that Cronin described independent adjustability of each fluid filled lens. *See* Ex. 1007, pp. 138-142.

Figures 2, 3A, 3B, and 4 below provide an overview of Cronin’s manually adjustable, liquid filled, variable focus eyeglasses. Savidis Decl., ¶55.



Figures 2, 3A, and 3B show a left lens assembly in which rear lens 56 is cemented into rear ring 70 having tab 28.⁷ Seal 54 forms a seal between rear ring 70 and

⁷ Both the left and right lens assemblies have the same structure, albeit mirror images of each other. Thus, unless otherwise specifically noted, only the number, not the additional “L” or “R” designation is included in the written description.

membrane support front ring 60, which holds membrane 55. Liquid 58 fills the space between rear lens 56 and membrane 55. Two screws 22 located near the temples connect front ring 60 to rear ring 70. *See* Ex. 1011:3;63-4:13, Savidis Decl.,¶55.

Screw 42 connects tab 28 (part of rear ring 70 which holds lens 56) to dowel block 40. Dowel block 40 is attached to dowel 44 having slot 48, through which cam ribbon 46 having cam surface 49 is inserted. *See* Figures 4 and 5A of Ex. 1011. The cam ribbon 46 is attached to a slider 7 embedded on the top of the eyeglass frame. For the left lens assembly, the cam ribbon is attached to slider 7L. For the right lens, it is attached to slider 7R. The embedded sliders are connected by a wire 11. *See* Ex.1011:4:27-43; 5:8-6:13; Savidis Decl., ¶56.

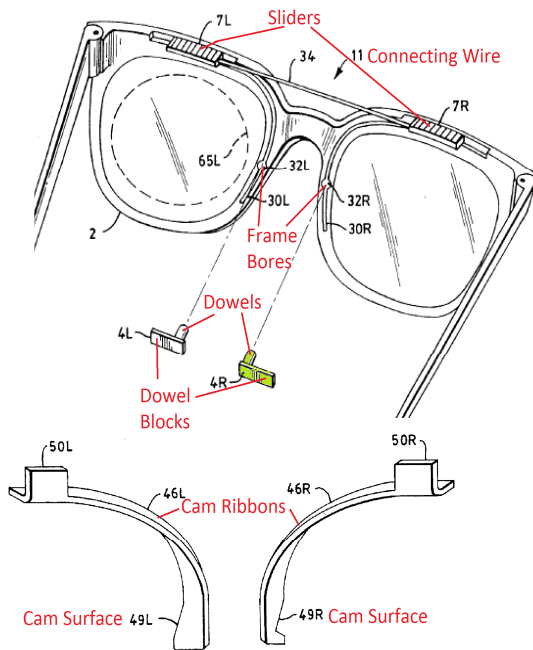


FIG. 5B

FIG. 5A

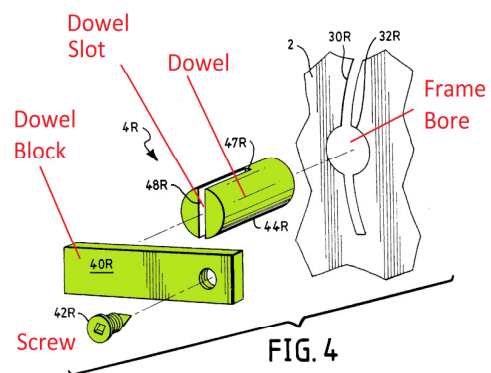
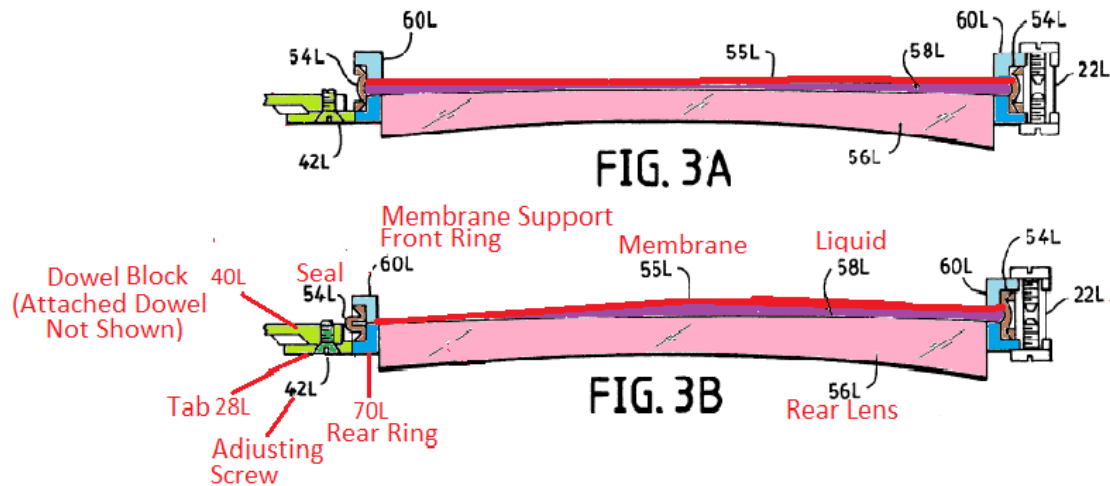


FIG. 4

For simultaneously adjusting the optical power of both fluid filled lenses, slider 7L or 7R is moved, causing both cam ribbons 46 to slide through the slots 48 of their respective dowels. When the cam ribbons 46 slide through the slots 48 of their respective dowels, the slot surfaces 47 of dowels 44 ride on cam surfaces 49 (only one dowel 44 is shown in Fig. 4 above), resulting in the dowels moving into or out of frame bore 32. *See* Ex.1011:5:23-6:13; Savidis Decl., ¶57.

Because dowel 44 is attached to dowel block 40 which is coupled to rear tab 28 by screw 42, movement of the dowel into frame bore 32 (towards the front of the lens assembly) decreases the distance between rear tab 28 (which is part of rear ring 70 which holds lens rear lens 56) and membrane support front ring 60, thereby increasing the optical power of the fluid filled lens. *See* Figure 3B. Alternatively, movement of the dowel out of frame bore 32 (towards the rear of the lens assembly) increases the distance between rear tab 28 (which is part of rear ring 70 which holds lens rear lens 56) and membrane support front ring 60, thereby decreasing the optical power of the fluid filled lens. *See* Figure 3A. *See also* 5:23-6:13. Savidis Decl., ¶58.



As explained in Cronin:

[W]hen either one of the sliders 7L, 7R is manually operated, both cam ribbons 46L, 46R will simultaneously move through the ribbon slots 30L, 30R and the cam surfaces 49L, 49R of ribbons 46L, 46R will engage the surfaces 47L, 47R of the dowel pieces 44L, 44R causing the lens actuators 4L, 4R (which each include a dowel piece 44L or 44R, a block 40L or 40R and an adjusting screw 42L or 42R) to move in or out of bores 32L, 32R. The dowel action will either compress or decompress the elastomeric membranes 54L, 54R at points of the adjusting screws 42L, 42R, causing the elastomeric membranes 55L, 55R to either distend or retract, thus varying the focus of each lens system.

Ex. 1011, 6:2-13. Savidis Decl., ¶59.

For manual, independent adjustment of each fluid filled lens, adjusting screw 42, when rotated, changes the distance between membrane support front ring 60 and rear lens holding rear ring 70, thereby changing the optical power of the liquid filled lens. Independent adjustment fulfills a number of purposes, including

“compensation for unusual visual disorders.” *See* Ex.1011, 5:15, *See* Savidis Decl., ¶60. Cronin explains:

[T]o avoid visual discomfort... the linear displacement generated by the lens actuators must be sensibly identical or, to compensate for unusual visual disorders, related in a pre-determined manner as to each lens assembly. The calibration, i.e. matching, of the focal lengths of the left and right lens assemblies is provided, as earlier noted, by a right calibration screw 42R for the right lens assembly (*see* FIG. 4), and a corresponding left calibration screw 42L (FIGS. 3A and 3B) for the left lens assembly.

Ex. 1011, 5:8-22. *See* Savidis Decl., ¶60.

2. Kurtin ‘532 Application (Ex. 1004)

The ‘532 Application published April 10, 2008, more than one year prior to December 10, 2006, the earliest priority date of the ‘797 Patent. Accordingly, the ‘532 Application is §102(b) prior art to the ‘797 Patent. (Pre AIA.)

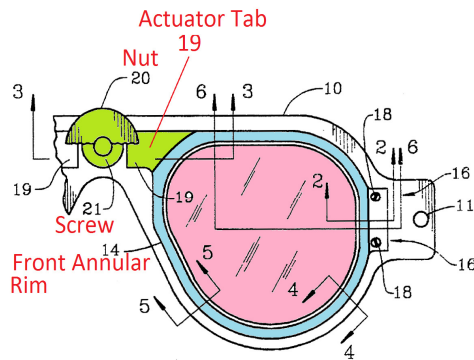
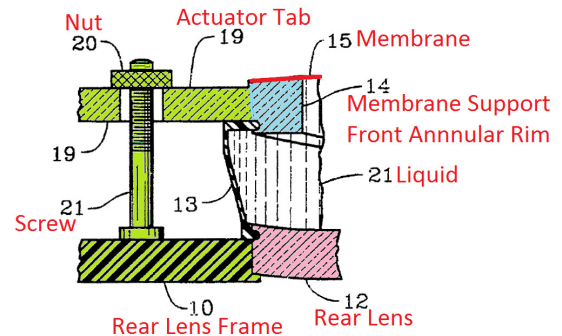
As discussed in Section V.A., the disclosure of manually adjustable, liquid filled, variable focus eyeglasses of the ‘532 Application was incorporated by reference into the ‘797 Patent. Furthermore, as discussed in Section V.A., the only structural difference between the eyeglasses of the ‘532 Application and those of the ‘797 Patent is the replacement of the ‘532 Application’s non-adjustable leaf hinge connector 23 with the adjustable structure of the ‘797 Patent. *See* Savidis Decl., ¶62. Accordingly, because the structure and operation of the

manually adjustable, liquid filled, variable focus eyeglasses of the ‘532 Application were discussed in detail in Section V(A), for the sake of brevity, that description need not be repeated here.

3. U.S. Patent No. 5,371,629 to Kurtin *et al.* (“Kurtin ‘629” or “the ‘629 Patent”)(Ex. 1012))

The ‘629 Patent, directed to manually adjustable, liquid filled, variable focus eyeglasses, issued December 6, 1994. Accordingly, the ‘629 patent is §102(b) prior art to the ‘797 Patent. (Pre AIA.) It was not cited to the USPTO during the prosecution of the ‘797 Patent or any application from which the ‘797 Patent claims priority. See Savidis Decl., ¶63.

The ‘629 Patent describes manually adjustable, liquid filled, variable focus eyeglasses in which a perpendicularly oriented, adjustable connector comprising a nut 20 and screw 21 connect membrane support structure front annular rim 14 to rear lens 12 via actuating tab 19 and part of rear frame 10. Manually adjusting the nut 20 on screw 21 results in changing the distance between the membrane support structure front annular rim 14 and the rear lens 12, thereby changing the optical power of the liquid filled lens. See Ex.1012: 3:18-4:9; Savidis Decl., ¶64.

**FIG. 1****FIG. 3**

As explained in the '629 Patent:

As seen in FIG. 1, the spectacles include a frame 10 to which temples (indicated schematically by the numeral 11) are attached. A rigid lens 12... is cemented in the frame 10. The rigid lens 12 is not visible in FIG. 1, but can be seen in FIGS. 2-6. A flexible seal 13 surrounds and is cemented or otherwise sealed to the rigid lens 12. Flexible seal 13 is also cemented or otherwise sealed to membrane support 14. Membrane support 14 is in the form of an annular rim having a non-circular opening through which the wearer looks, and to which membrane 15 is cemented.

The membrane 15 is comprised of a thin transparent distensible plastic film such as saran. The enclosed volume defined by membrane 15, membrane support 14, seal 13, and rigid lens 12 is filled with a transparent liquid 21, which preferably has an index of refraction close to that of the rigid lens.

The membrane support 14 is attached to frame 10 via a pair of hinges 16, one of which can be seen in FIG. 2.

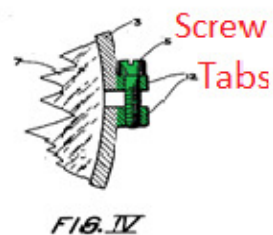
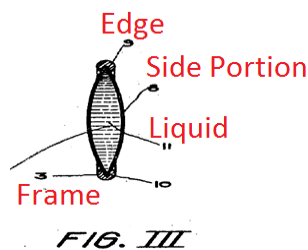
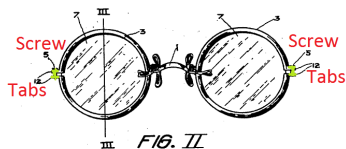
The membrane support 14 includes an actuating tab 19 extending outward from the support at a point remote from the hinges. The actuating tabs 19 from both lenses of the spectacles shown in FIG. 1 are engaged by a nut 20, which is threaded onto screw 21... As nut 20 is turned ... the membrane supports rotate about the hinges 16. Since the liquid 21 is sensibly incompressible, membrane 15, the softest wall member, distends as needed to enclose a fixed volume. Flexible seal 13 is constructed so that the volume change due to its motion is relatively low.

Moving the tabs 19 toward the frame 10 causes the membranes 15 to bulge outward, resulting in an increased optical power ... The optical power simply changes as the position of tabs 19 with respect to frame 10 changes.

See Ex. 1012: 3:18- 4:9; Savidis Decl., ¶¶65.

4. U.S. Patent No. 1,269,422 to Gordon (“Gordon” (Ex. 1013))

Gordon, directed to manually adjustable, liquid filled, variable focus eyeglasses, issued June 11, 1918. Accordingly, Gordon is §102(b) prior art to the ‘797 Patent. (Pre AIA.)



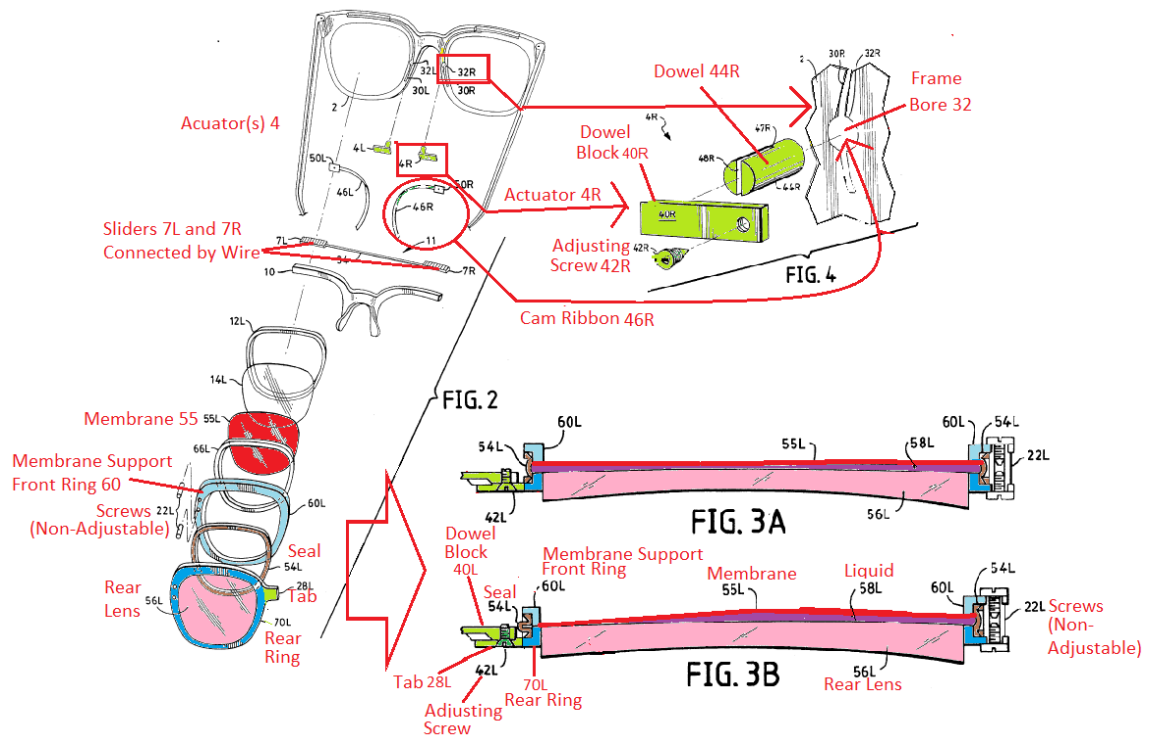
As shown in Gordon's Figures II-IV above, each liquid filled lens 7 is formed by two distensible side portions 8 that merge together at their circumferential edges 9, thereby forming a pocket which is filled with a liquid 11. The merged circumferential edge is held by the frame 3. Screw 5, housed in upper and lower tabs 12 and threadably engaged with one of the tabs 12, connects the two ends of the frame together via upper and lower tabs 12. Rotation of screw 5 adjusts the distance between upper and lower tabs, thereby changing the optical power of the liquid filled lens. Specifically, by rotating the screw in one direction, the distance between upper and lower tabs 12 is decreased, thereby causing the side walls of the liquid filled lens to become more convex, and thereby increasing the optical power of the liquid filled lens. Alternatively, by rotating the screw in the opposition direction, the distance between upper and lower tabs 12 is increased, thereby causing the side walls of the liquid filled lens to become less convex, and thereby decreasing the optical power of the liquid filled lens. *See* Ex.1013: p. 2:9-15, 68-75, p. 2:88-p. 3:1, p. 3:5-24; Savidis Decl., ¶ 67.

VI. GROUNDS FOR UNPATENTABILITY OF EACH CLAIM

As required by 37 C.F.R. § 42.104(b)(4), the following section identifies how claims 1-17 of the '797 Patent are unpatentable under 35 U.S.C. § 103(a). (Pre AIA.)

A. Ground 1: Claims 3-17 are Anticipated by Cronin under 35 U.S.C. § 102(b)

Annotated Figures 2, 3A and 3B, and 4 depict the Cronin invention.



1. Independent Claim 3

- i. 3[(a)]. “Variable focus spectacles comprising first and second lens units, each lens unit comprising:”**

This limitation is shown in Figure 2 and also described in the Figure 2’s legend, “FIG. 2 is a diagrammatic exploded rear perspective view of a pair of variable focus eyeglasses...” (3:18-19); *see also* Figure 1 and 3:13-16; Savidis Decl., ¶70.

ii. [3(b)] “a transparent member;”

This limitation is shown in Figures 2, 3A & 3B as “rear lens 56L” (4:21-27); *see also* Savidis Decl., ¶71.

iii. [3(c)] “a membrane support structure, having an opening therein, being disposed adjacent to and within a field of view of the transparent member; a transparent membrane attached to the membrane support structure across the opening;”

This limitation is shown Figures 2, 3A & 3B. The membrane support structure is “membrane support (i.e., a front ring) 60L” (4:24-25). Figures 2, 3A and 3B show membrane support front ring 60 has an opening and is disposed adjacent to and within the field of view of the transparent member rear lens 56. *See* 4:21-27; 7:17-29 (claim 1). A transparent membrane attached to the membrane support structure across the opening is shown in Figures 2, 3A, and 3B as “elastomeric membrane 55L” (4:21-27). *See also* 7:17-29 (claim 1), Savidis Decl., ¶72.

iv. [3(d)] “a flexible seal extending between the transparent member and the membrane support structure, the flexible seal permitting motion between the transparent member and the membrane support structure;”

This limitation is shown in Figures 2, 3A, and 3B as “elastomeric seal 54” (4:27-32) and Figures 3A and 3B show that the “elastomeric seal 54” allows motion between the transparent member rear lens 56 and membranes support front ring 60 (4:27-32). *See also* 7:17-29 (claim 1); Savidis Decl., ¶73.

- v. **[3(e)] “liquid having a predetermined index of refraction substantially filling a space between the transparent member and the membrane support structure within the seal;”**

This limitation is shown in Figures 3A and 3B where liquid 58 is shown as filling the space between the transparent member 56 and the membrane support front ring 60 within seal 54. *See* 4:21-27, 4:39-42, 7:17-29 (claim 1). Cronin acknowledges that “the optical power ... depends on the refractive index of the liquid 58L.” 4:39-41. Thus, it was routine for a POSA to choose a liquid having a predetermined index of refraction to provide the correct optical power. *See* Savidis Decl., ¶74.

- vi. **[3(f)] “and an adjustable element allowing adjustment of a distance between the transparent member and the membrane support structure at one location around a periphery of the membrane support structure**
[3(g)] while, at another location along the periphery of the membrane support structure, a distance between the transparent member and the membrane support structure is kept unchanged,
[3(h)] wherein the adjustable elements of the first and second lens units are manually adjustable independently of each other to allow independent adjustments of the respective distances between the respective transparent members and the corresponding membrane support structures at the respective one locations”

Limitations [3(f)]-[3(h)] cover the “adjustable element.” Figures 2, 3A, 3B, and 4 show an adjustable element comprising (a) adjusting screw 42, (b) dowel

block 40 attached to dowel 44, and (c) tab 28 wherein adjusting screw 42 connects tab 28 to dowel block 40 attached to dowel 44. Manual rotation of adjusting screw 42 changes the distance between membrane support front ring 60 and transparent member rear lens 56 at the peripheral location of adjusting screw 42, thereby changing the focal distance (optical power) of the fluid filled lens. Its rotation does not change the distance between membrane support front ring 60 and transparent member rear lens 56 at a peripheral location directly across from the adjustable screw, i.e., the location of screws 22. Each lens assembly contains its own adjustable element as defined above, thereby allowing for manual independent adjustment of each fluid filled lens. *See* Figures 2, 3A, 3B, and 4, 5:8-36, 5:53-6:13, 3:63-4:8, 4:22-43, 4:50-54, Savidis Decl., ¶75. Cronin states:

The operation of variable focus lens assemblies of the invention is effected by the relative displacement of the assembly's front and rear members...

The calibration, i.e. matching, of the focal lengths of the left and right lens assemblies is provided, as earlier noted, by a right calibration screw 42R for the right lens assembly (*see* FIG. 4), and a corresponding left calibration screw 42L (FIGS. 3A and 3B) for the left lens assembly.

Ex. 1011, 4:13-16, 5:17-22, respectively. Accordingly, Cronin describes claim limitations [3(f)]-[3(h)]. *See* Savidis Decl., ¶75.

In sum, as shown above, Cronin describes all of the limitations of claim 3. Therefore claim 3 is invalid as being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶76.

2. Claim 4 “The variable focus spectacles of claim 3, wherein the adjustable element is coupled directly or indirectly to the membrane support structure.”

The adjustable element comprises (a) adjusting screw 42, (b) dowel block 40 attached to dowel 44, and (c) tab 28 wherein adjusting screw 42 connects tab 28 to dowel block 40. Dowel block 40 is attached to dowel 44 having dowel slot 48. Dowel slot 48 is engaged with cam ribbon 46, which is slidably embedded in frame 2. Frame 2 is attached to membrane support front ring 60. Thus, dowel block 40 attached to dowel 44, a part of the adjustable connector, is coupled indirectly to membrane support front ring 60. *See* Figures 2, 3A, 3B, and 4, 3:63-4:8, 4:22-43, 5:53-6:13. Accordingly, claim 4 is invalid as being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶77.

3. Claim 5 “The variable focus spectacles of claim 3, wherein the adjustable element is coupled directly or indirectly to the transparent member.”

The adjustable element comprises (a) adjusting screw 42, (b) dowel block 40 attached to dowel 44, and (c) tab 28 wherein adjusting screw 42 connects tab 28 to dowel block 40. Tab 28 is part of rear ring 70 which is attached to rear lens 56. Therefore, tab 28, a part of the adjustable connector, is coupled directly to the

transparent member rear lens 56. *See* Figures 2, 3A, and 3B, 4:22-43, 5:63-6:2, 3:63-4:8. Accordingly, claim 5 is invalid as being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶78.

4. Claim 6 “The variable focus spectacles of claim 3, wherein the adjustable element has an inclined ramp.”

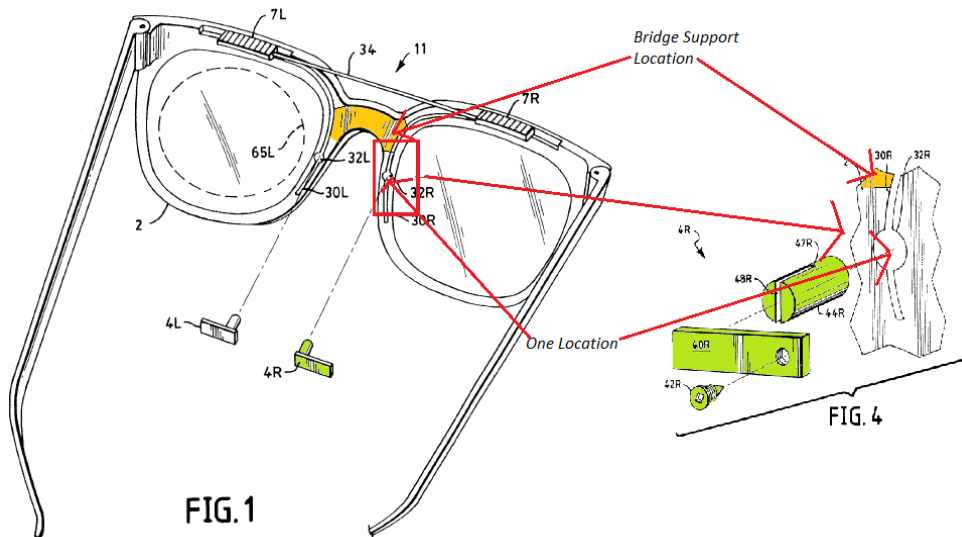
The adjustable element comprises (a) adjusting screw 42, (b) dowel block 40 attached to dowel 44, and (c) tab 28 wherein adjusting screw 42 connects tab 28 to dowel block 40. Adjusting screw 42, part of the adjustable connector, has threads, and therefore, an “inclined ramp.” *See* Figures 2, 3A, 3B, and 4, 5:63-6:2. Accordingly, claim 6 is invalid as being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶79.

5. Claim 7 “The variable focus spectacles of claim 3, further comprising a bridge disposed between the first and second lens units, the bridge being connected to the first and second lens units at first and second bridge support locations wherein the one locations around the periphery of the membrane support structure in the first and second lens units are spaced apart from the first and second bridge support locations, respectively.”

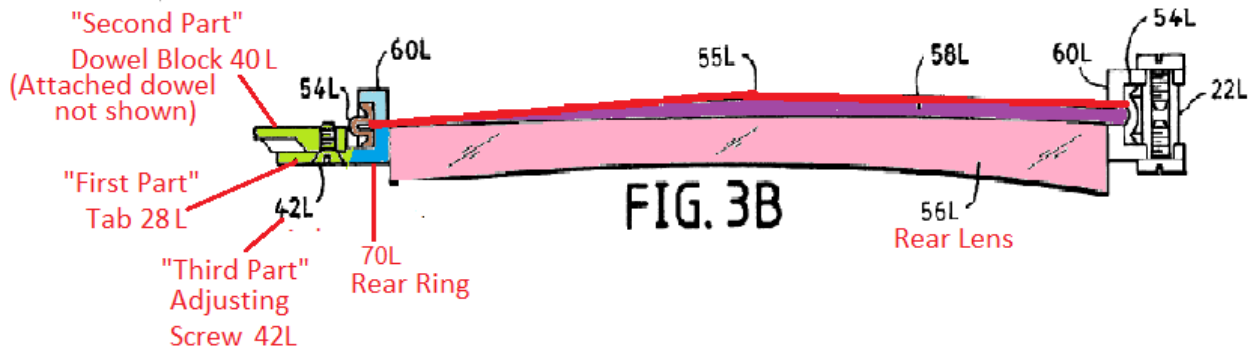
Figures 1 and 4 below show a yellow colored bridge between each lens unit and the locations where the bridge connects to each lens unit, *i.e.*, the claimed “bridge support locations.” The Figures also show that the “bridge support locations” are spaced apart from the claimed “one locations” *i.e.*, the locations where, for each lens, adjusting screw 42 can change the distance between

membrane support front ring 60 and transparent member rear lens 56. *See also* Figures 2, 3A, 3B, and 4:27-43, 5:8-23, 6:14-21; Savidis Decl., ¶¶80.

In addition, Cronin discloses an alternative embodiment in which Cronin's adjustable elements, and therefore its "one locations," are located adjacent to sliders 7L and 7R, respectively, near the top of the eyeglass frames. *See* 6:14-21. Savidis Decl., ¶¶81. Accordingly, claim 7 is invalid as being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶¶81.



6. **Claim 8 “8[a]. The variable focus spectacles of claim 3 wherein the adjustable element has**
[b] a first part that is coupled directly or indirectly to the transparent member
[c] a second part that is coupled directly or indirectly to the membrane support structure,
[d] and a third part that is in moveable contact with either the first part or the second part,
[e] and wherein a movement of the third part relative to one or both of the first part and the second part causes adjustment of the distance between the transparent member and the membrane support structure at the one location.”

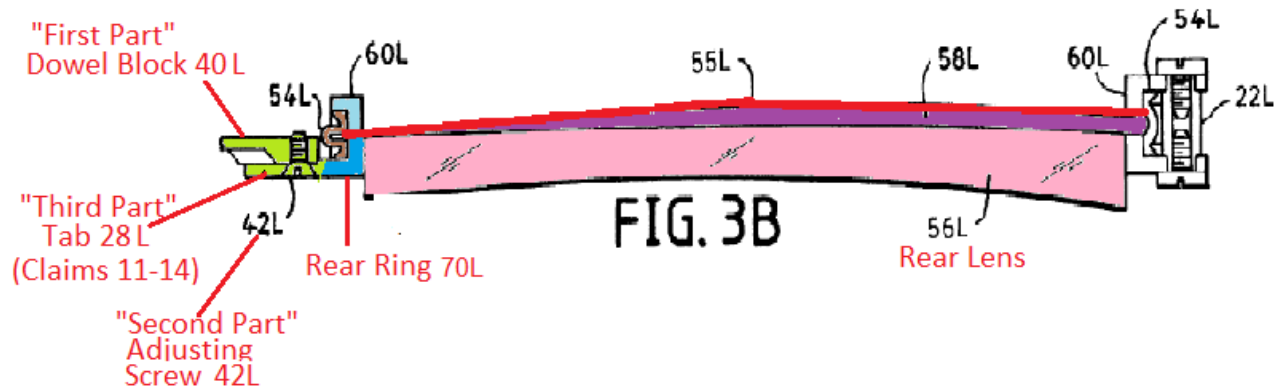


The “adjustable element” comprises (a) adjusting screw 42 (“third part”), (b) dowel block 40 attached to dowel 44 (“second part”), and (c) tab 28 (“first part”) wherein adjusting screw 42 connects tab 28 to dowel block 40. Tab 28 (“first part”), which is part of rear ring 70, is coupled directly to transparent member rear lens 56. *See* claim 5 invalidity analysis, *supra*. Dowel block 40 attached to dowel 44 (“second part”), is coupled indirectly to membrane support front ring 60. *See* claim 4 invalidity analysis, *supra*. Screw 42, when rotated, is in moveable contact with dowel block 40 attached to dowel 44 (“second part”) whereby its rotation and resulting axial movement relative to dowel block 40 changes the distance between membrane support front ring 60 and transparent member rear lens 56 at the location of screw 42. *See* claim 3 invalidity analysis. Accordingly, claim 8 is invalid for being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶82 .

7. Independent Claim 9

Independent claim 9 is essentially identical to claim 3 with the only difference being that claim 9 replaced the “adjustable element” limitations 3(f)-(h) of claim 3 with “adjustable mechanism” limitations 9(f)-(j). *See* Ex. 1009. The “adjustable mechanism” limitations read:

- (i) **[9(f)]... “and an adjustable mechanism having
[9(g)] a first part that is coupled directly or indirectly
to the membrane support structure
[9(h)] and a second part that is in moveable contact
with the first part, wherein a movement of the second
part relative to the first part changes a distance
between the transparent member and the membrane
support structure at one location around a periphery
of the membrane support structure
[9(i)] while, at another location along the periphery
of the membrane support structure, a distance
between the transparent member and the membrane
support structure is kept unchanged,
[9(j)] wherein the second parts of the adjustable
mechanisms of the first and second lens units are
manually adjustable independently of each other to
independently change the respective distances
between the respective transparent members and the
corresponding membrane support structures at the
respective one locations.”**



The “adjustable mechanism” comprises (a) adjusting screw 42 (“second part”), (b) dowel block 40 attached to dowel 44 (“first part”), and (c) tab 28 (“third part”) wherein adjusting screw 42 connects tab 28 to dowel block 40. Dowel block 40 attached to dowel 44 (“first part”) is coupled indirectly to membrane support front ring 60. *See* claim 4 invalidity analysis. Adjusting screw 42 (“second part”) is in moveable contact with dowel block 40 whereby its rotation results in axial movement relative to dowel block 40 (“first part”) that changes the distance between membrane support front ring 60 and transparent member rear lens 56 at the location of screw 42 and not at another peripheral location such as directly across from the adjustable screw, i.e., the location of screws 22. Each lens assembly contains its own adjustable element as defined above, thereby allowing for independent adjustment of each fluid filled lens. *See* claim 3 invalidity analysis. Accordingly, because all of the other claim limitations are identical to the limitations of claim 3 already shown to have been described by Cronin, claim 9 is

invalid for being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶84.

8. Claim 10 “The variable focus spectacles of claim 9, wherein the second part includes an inclined ramp in slidable contact with the first part.”

Adjusting screw 42 (“second part”) has threads that constitute an inclined ramp and which are in slideable contact with dowel block 40 (“first part”). Accordingly, claim 16 is invalid for being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶85.

9. Claim 11 “The variable focus spectacles of claim 9, wherein the adjustable mechanism further includes a third part that is coupled directly or indirectly to the transparent member, wherein the second part is in moveable contact with the third part, wherein a movement of the second part relative to the third part changes the distance between the transparent member and the membrane support structure at the one location while, at the other location along the periphery of the membrane support structure, the distance between the transparent member and the membrane support structure is kept unchanged.

The adjustable mechanism includes tab 28 (“third part”) that is coupled directly to transparent member rear lens 56. *See* claim 5 invalidity analysis. The adjusting screw 42 (“second part”) is in moveable contact with tab 28 (“third part”) whereby when screw 42 rotates it moves axially relative to tab 28 and changes the distance between transparent member rear lens 56 and membrane support front ring 60 at the location of screw 42 and not at another peripheral location such as

directly across from the adjustable screw, i.e., the location of screws 22. *See* claim 3 invalidity analysis. Accordingly, claim 11 is invalid for being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶¶86.

10. Claim 12. “The variable focus spectacles of claim 11, wherein the third part of the adjustable mechanism includes a ring structure which is disposed around and holds the transparent member”

As shown in Figures 2, 3A, and 3B, tab 28 (“third part”) is part of rear ring 70 which is disposed around and holds transparent member rear lens 56. *See* 5:65-6:2; 3:63-68, and claim 5 invalidity analysis. Accordingly, claim 12 is invalid for being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶¶87.

11. Claim 13 “The variable focus spectacles of claim 11, wherein the *second part* of the adjustable mechanism is in slidable contact with both the first part and the *second part*. (emphasis added).

Claim 13 is fatally confusing as written because “the *second part* of the adjustable mechanism is in slidable contact with both the first part *and the second part*.” (emphasis added). Notwithstanding, adjusting screw 42 (“second part”), when rotated, is in slideable contact with dowel block 40 (“first part”) and tab 28 (“third part”). *See* claim 3(f)-(h) invalidity analysis. Accordingly, claim 13, to the extent that it can be interpreted, is invalid for being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶¶88.

12. Claim 14 “The variable focus spectacles of claim 11, wherein the second part includes an inclined ramp in slidable contact with either the first part or the second part.”

See claims 3(f)-(h), 6, and 10 invalidity analysis. Accordingly, claim 14 is invalid for being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶89.

13. Claim 15.

Independent claim 15 is essentially identical to claims 3 and 9 with the only difference being that claim 15 replaced the “adjustable element” limitations 3(f)-(h) of claim 3, and the “adjustable mechanism” limitations 9(f)-(j), with the “controllable spacing member” limitations 15(f)-(h). *See* Ex. 1009. The “controllable spacing member” limitations read:

Claim 15 [(f)] “a controllable spacing member coupled directly or indirectly to each of the transparent member and the membrane support structure, the controllable spacing member being operative to control a distance between the transparent member and the membrane support structure at one location along a periphery of the transparent member and the membrane support structure,

[(g)] while a distance between the transparent member and the membrane support structure at another location along the periphery of the transparent member and the membrane support structure is kept constant,

[(h)] wherein the controllable spacing members of the first and second lens units are manually operable independently of each other to independently control the respective distances between the respective transparent members and the corresponding membrane support structures at the respective one locations.

Figures 2, 3A, 3B, and 4 show a “controllable spacing member” comprising (a) adjusting screw 42, (b) dowel block 40 attached to dowel 44, and (c) tab 28 wherein adjusting screw 42 connects tab 28 to dowel block 40 attached to dowel 44. Tab 28 of the controllable spacing member is coupled directly to the transparent member. *See* claim 5 invalidity analysis. Dowel block 40 attached to dowel 44 of the controllable spacing member is coupled indirectly to the membrane support structure. *See* claim 4 invalidity analysis. Manual rotation of adjusting screw 42 of the “controllable spacing member” changes the distance between membrane support front ring 60 and transparent member rear lens 56 at

the peripheral location of screw 42 and not at another peripheral location such as directly across from the adjustable screw, i.e., the location of screws 22. Each lens assembly contains its own manually controllable spacing member as described above, thereby allowing for independent adjustment of each fluid filled lens. *See* claim 3 invalidity analysis. Accordingly, because the remaining claim limitations are identical to the limitations of claim 3 already shown to have been described by Cronin, claim 15 is invalid for being anticipated by Cronin under 35 U.S.C § 102(b). *See* Savidis Decl., ¶¶91.

14. Claim 16 “The variable focus spectacles of claim 15, wherein the controllable spacing member includes an inclined ramp, the inclined ramp being operative to change a direction of motion imparted by a movement of the controllable spacing member to either the transparent member or the membrane support structure.”

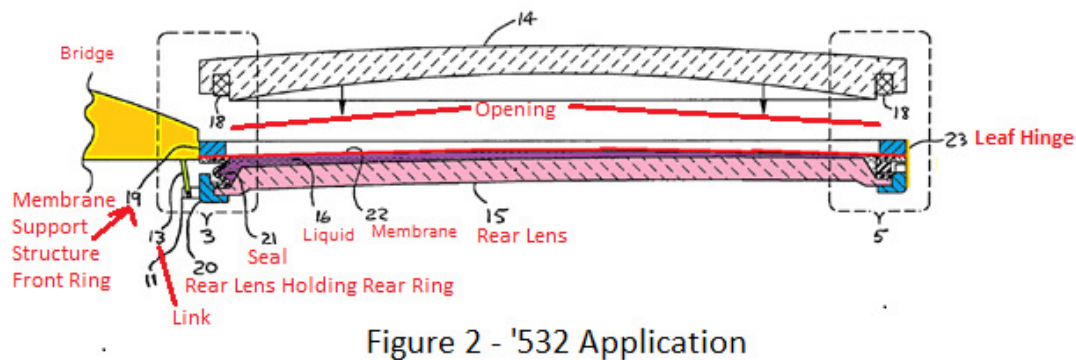
Figures 2, 3A, 3B, and 4 show a “controllable spacing member” comprising (a) adjusting screw 42, (b) dowel block 40 attached to dowel 44, and (c) tab 28 wherein adjusting screw 42 connects tab 28 to dowel block 40 attached to dowel 44. The threads of adjustment screw 42 constitute an inclined ramp. Screw 42 is connected to tab 28, which is part of rear ring 70 which holds transparent member rear lens 56. *See* claim 5 invalidity analysis. Because of the threads, changing rotation of the adjustment screw changes the direction of axial movement of the screw 42 which is engaged with tab 28, thereby changing the direction of motion of transparent member rear lens 56. *See* claim 3(f)-(h) invalidity analysis.

Accordingly, claim 16 is invalid for being anticipated by Cronin under 35 U.S.C § 102(b). Savidis Decl., ¶¶92.

15. Claim 17 “The variable focus spectacles of claim 16, wherein the inclined ramp is in the form of threads of a screw.”

See claim 16 invalidity analysis. Accordingly, claim 17 is invalid for being anticipated by Cronin under 35 U.S.C § 102(b). See Savidis Decl., ¶¶93.

B. Ground 2: Claims 1-17 are Unpatentable under 35 U.S.C. §103(a) As Being Rendered Obvious by Kurtin '532 in View of Kurtin '629 and Gordon



1. Independent Claim 1

i. 1[(a)]. “Variable focus spectacles comprising first and second lens units, each lens unit comprising:”

Kurtin ‘532 (Ex. 1004) describes “variable focus spectacles for presbyopes” (¶001). *See also* Ex. 1004: Figures 1 and 2, ¶0026; Savidis Decl., ¶95.

ii. 1[(b)]. “a transparent member;”

Kurtin '532 (Ex. 1004) describes “variable focus spectacles for presbyopes” (¶001) having transparent member “fixed power rear lens 15” (¶0028). *See also*

Ex. 1004: Figures 1 and 2, ¶¶0026, ¶¶0031; and Ex. 1001: Figure 2 and 3:36-48; Savidis Decl., ¶¶96.

iii. [1(c)] “a membrane support structure, having an opening therein, being disposed adjacent to and within a field of view of the transparent member;”

This structure is shown in Figure 2 of the ‘532 Application and described therein. *See* Ex. 1004: ¶ 0032 (“front ring 19 ... referred to as a membrane support member or structure;” ... “rear lens 15 is held by rear ring 20”); *see also* Ex. 1001: 2:13-19, 3:36-48, and Figure 2; Savidis Decl., ¶¶97.

iv. [1(f)] “a transparent membrane attached to the membrane support structure across the opening;”⁸

This structure is shown in Figure 2 of the ‘532 Application and described therein. *See* Ex. 1004: ¶ 0032 (“a thin membrane is attached ... to the rear of front ring...referred to as a membrane support member or structure”); *see also* Ex. 1001: 2:13-19, 3:36-48, and Figure 2; Savidis Decl., ¶¶98.

v. [1(g)] “a flexible seal extending between the transparent member and the membrane support structure;”

This structure is shown in Figure 2 of the ‘532 Application and described therein. *See* Ex. 1004: ¶ 0032 (“Rear lens 15 is held by rear ring 20, and the

⁸ Some of claim 1’s limitations have been reordered to match the ordering of independent claims 3, 9, and 15. No substantive change in claim scope results from reordering.

combination is coupled to the front ring 19 through an elastomeric bellows 21 which allows the rear ring to move with respect to the front ring”); *see also* Ex. 1001: 2:13-19, 3:36-48 and Figure 2; Savidis Decl., ¶¶99.

- vi. **“[1(h)] liquid having a predetermined index of refraction substantially filling a space between the transparent member and the membrane support structure within the seal;”**

This structure is shown in Figure 2 of the ‘532 Application and described therein. *See* Ex. 1004: ¶ 0032 (“space between the film and the rear lens is filled with a clear liquid 16”), ¶ 0035, claim 16, Savidis Decl., ¶100.

- vii. **[1(d)] “the membrane support structure being manually movable by a wearer of the variable focus spectacles to change a distance between the membrane support structure with respect to the transparent member at one location around a periphery of the membrane support structure, [1(e)] while at another location around the periphery of the membrane support structure, a distance between the membrane support structure and the transparent member is maintained substantially constant [1(i)] wherein the membrane support structures of the first and second lens units are independently moveable by the wearer to independently change the respective distances between the respective membrane support structures with respect to the corresponding transparent members at the respective one locations.”**

While Kurtin ‘532 does not describe manual independent adjustability of each lens, the desirability of having independently and manually adjustable, liquid filled, variable focus lenses was known in the art well prior to 2010. For example,

Gordon (Ex. 1013), issued in 1918, describes independently and manually adjustable, liquid filled, variable focus lenses in which a manually adjustable connector comprising a screw and tabs located near each temple functions to individually adjust each fluid filled lens. *See* Section V.C.4, *supra*. Cronin (Ex. 1011), issued in 1996, describes double adjustable, liquid filled, variable focus eyeglasses in which one level of adjustment comprises manually adjusting the focus of both lenses simultaneously and collectively and another level of adjustment comprises manually adjusting each lens individually by independent adjusters for each lens that have a screw and tab configuration. *See* Section V.C.1, *supra*. Given the motivation to obtain have independent adjustability of each lens unit as taught at least by Gordon (or Cronin), a POSA would have been motivated to seek a suitable adjuster structure to replace the non-adjustable connector of Kurtin '532. *See* Savidis Decl., ¶101.

U.S. Patent No. 5,371,629 to Kurtin *et al.* (Ex. 1012), which the inventor did not disclose to the USPTO, describes manually adjustable, liquid filled, variable focus eyeglasses in which a perpendicularly oriented adjustable connector comprising nut 20 and screw 21 connect membrane support structure front annular rim 14 to transparent member rear lens 12 via actuating tab 19 and part of rear frame 10. Manual rotation of nut 20 results in its axial movement, thereby changing the distance between the membrane support structure front annular rim

14 and the transparent member rear lens 12 at the location of nut 20 and screw 21, but not at another peripheral location such as directly across from the adjustable connector. *See* Figures 1 and 3 below, 3:18- 4:9; Savidis Decl., ¶102.

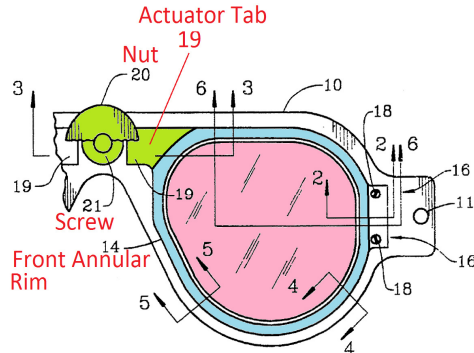


FIG. 1

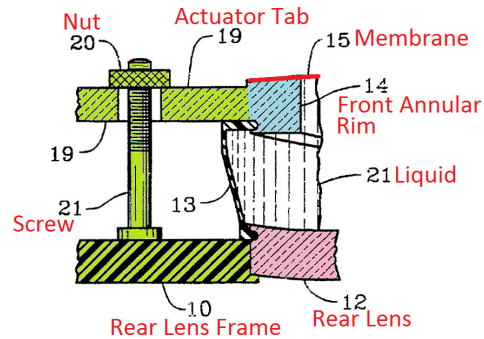
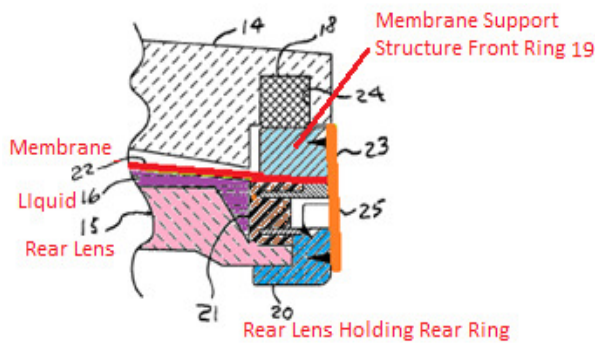


FIG. 3

To obtain the desired manual independent adjustability of each lens unit as taught at least by Gordon (or Cronin), a POSA would have been motivated to substitute Kurtin's '629 adjustable connector for the non-adjustable connector of Kurtin '532 on both lens assemblies. Further, given their similarity in structures, as demonstrated in the figures below, a POSA would have exercised no more than routine skill in the art to implement said substitution by utilizing existing seal 21 of Kurtin '532 shown in Figure 3 and by attaching tabs to or creating tabs for Kurtin's '532 front and rear rings to accommodate Kurtin's '629 screw and nut. *See* Savidis Decl., ¶ 103.



Kurtin '532 Figure 5

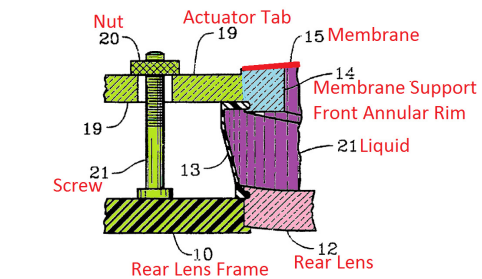


FIG. 3

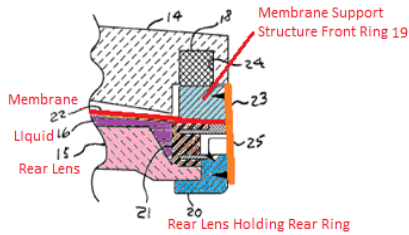
Kurtin '629 Figure 3

Implementing this substitution for each lens results in the ability to manually move, at the location of each peripheral connector, the membrane support structure front ring 19 closer to or further from rear lens 15, thereby providing the desired independent adjustment of the optical power of each fluid filled lens. Put simply, the aforementioned substitution is nothing more than a simple mechanical substitution comprising combining known prior art elements according to routine methods to yield predictable results. *See* Savidis Decl., ¶104.

Indeed, the Kurtin '629 connector, once attached via tabs to Kurtin's '532 membrane support structure front ring 19 and rear lens 15 holding rear ring 20, performs the same function it performs in the Kurtin '629 patent, *i.e.*, adjusting, at the location of the adjuster, the distance between a membrane support structure and rigid transparent lens, thereby adjusting the optical power of the fluid filled lens, while allowing the distance between the membrane support structure and its respective rigid lens at another peripheral location to remain unchanged.

Accordingly, for each lens unit, it was obvious to substitute the adjustable connector of Kurtin '629 for the non-adjustable connector of Kurtin '532 and such substitution describes and thus renders obvious limitations 1(d), (e), and (i). *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416, 127 S. Ct. 1727, 167 [*758] L. Ed. 2d 705 (2007) (“A court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.. The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results”). *See Savidis Decl.*, ¶105.

In addition, as an alternative combination based on the same prior art references, it was obvious to substitute, for the non-adjustable connector of Kurtin '532, the adjustable connector of Kurtin '629 as modified by Gordon. Gordon describes independently and manually adjustable, fluid filled, variable focus eyeglasses having adjustable connectors located near the temples for each lens comprising screw 5 and upper and lower tabs 12. Screw 5 is inserted through a hole in one tab 12 and threadably engaged with other tab 12. Manual rotation of the screw in the tabs changes the distance between the upper and lower tabs to thereby change the optical power of the fluid filled lens. *See Ex. 1013, Figures II-IV, p. 2:68-75, p.3:5-24, Savidis Decl.*, ¶106.



Kurtin '532 App. Figure 5

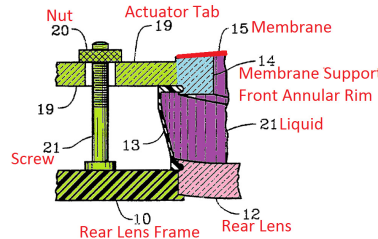
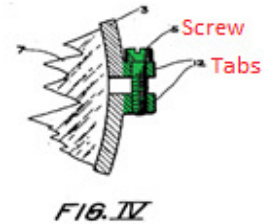


FIG. 3



It would have been an obvious and routine design choice to replace Kurtin's '629 nut and screw combination, connected via tabs to Kurtin's '532 membrane support structure front ring 19 and rear lens 15 holding rear ring 20, with Gordon's threadably engaged screw. This is because both the Kurtin's '629 screw and nut combination and Gordon's threadably engaged screw connect tabs and both connectors function to adjust the distance between the tabs, thereby resulting in changing the optical power of the fluid filled lens. Furthermore, such a substitution results in the ability to manually move, at the peripheral location of the connector, the membrane support structure front ring 19 closer to or further from rear lens 15, thereby providing the desired independent adjustment of the optical power of each fluid filled lens, while allowing the distance between the membrane support structure and its respective rigid lens at another peripheral location to remain unchanged. This combination thus also describes and renders obvious limitations 1(d), (e), and (i). In sum, as explained above, claim 1 is rendered obvious by Kurtin '532 in view of Kurtin '629 and Gordon under 35 U.S.C §

103(a). *See KSR Int'l Co. v. Teleflex Inc.*, supra, 550 U.S. at 416, 127 S. Ct. at 167.

See also Savidis Decl., ¶107.

2. **Claim 2** “The variable focus spectacles of claim 1, further comprising a bridge disposed between the first and second lens units, the bridge being connected to the first lens unit at a first bridge support location and connected to the second lens unit at a second bridge support location, wherein the one locations around the periphery of the membrane support structure in the first and second lens units are spaced apart from the first and second bridge support locations”

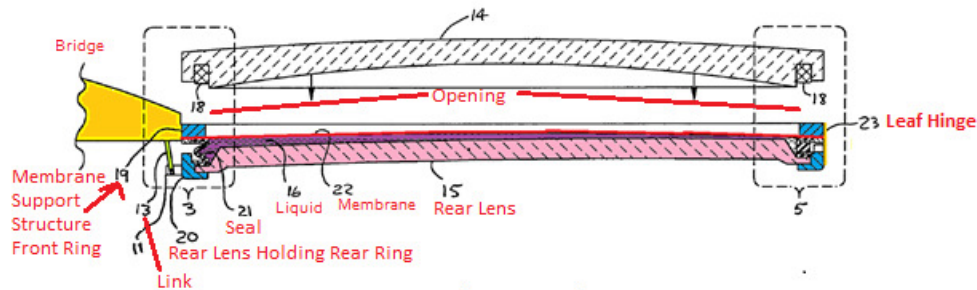


Figure 2 - '532 Application

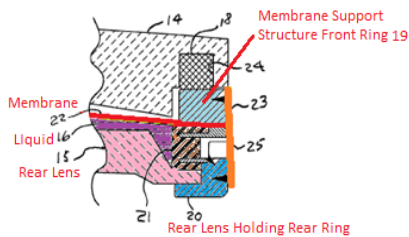
Substituting Kurtin’s ‘629 adjustable connector or Kurtin’s ‘629 adjustable connector as modified by Gordon ‘422 for the non-adjustable connector 23 of Kurtin ‘532 on each lens results in adjustable connectors located near the temples i.e., the “one locations,” spaced apart from where the bridge is connected to the lens units, i.e., the “the bridge support locations.” *See also* claim 1 invalidity analysis above. Accordingly, claim 2 is rendered obvious by Kurtin ‘532 in view of Kurtin ‘629 and Gordon under 35 U.S.C § 103(a). *See* Savidis Decl., ¶108.

3. Independent Claim 3

Independent claim 3 is essentially identical to claim 1 with the only difference being that claim 1's adjustability limitations 1(d), (e), and (i) were replaced with claim 3's "adjustable element" limitations 3(f)-(h). Those two sets of limitations, however, are highly similar. *See* Ex. 1009, Savidis Decl., ¶109.

As explained in claim 1's invalidity analysis, substituting Kurtin's '629 adjustable connector or Kurtin's '629 adjustable connector as further modified by Gordon's adjustable connector for the non-adjustable connectors of Kurtin '532, yields peripherally located, manually adjustable structures that adjust, at the location of the adjuster, the distance between a membrane support structure and lens, while also allowing the distance between the membrane support structure and its respective lens at another peripheral location, *e.g.*, the bridge, to remain unchanged. Accordingly, claim 1's invalidity analysis shows that claim 3's "adjustable element" limitations 3(f)-(h) are also rendered obvious by Kurtin '532 in view of Kurtin '529 and Gordon. *See also* Savidis Decl., 110. Because all of the remaining limitations in claim 3 are identical to the limitations of claim 1 already shown to have been described by Kurtin '532 (*see* claim 1 invalidity analysis for limitations 1(a)-(c) and (f)-(h)), claim 3 is rendered obvious by Kurtin '532 in view of Kurtin '629 and Gordon under 35 U.S.C § 103(a). *See* Savidis Decl., ¶110.

4. Claims 4, 5, 6, and 8.



Kurtin '532 App. Figure 5

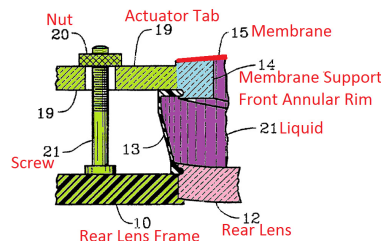


FIG. 3

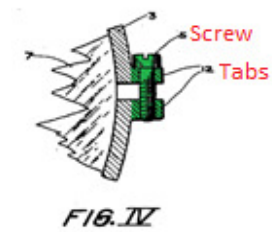


FIG. IV

Substituting Kurtin's '629 adjustable connector or Kurtin's '629 adjustable connector as further modified by Gordon's adjustable connector for the non-adjustable connector of Kurtin '532 both result in the claimed "adjustable element" which includes (a) a "second part" tab integral to or attached to front membrane support structure front ring 19, (b) a "first part" tab having screw 21 attached thereto, said tab integral to or attached to rear lens holding rear ring 20 (if combining Kurtin '532 with Kurtin '629) or "first part" tab integral to or attached to rear lens holding rear ring 20 (if combining Kurtin '532 with Kurtin '629 as further modified by Gordon). Accordingly, the "adjustable element" is coupled directly to the membrane support structure front ring 19 (thus describing claim 4) and coupled directly (if not directly, then indirectly) to transparent member rear lens 15 (thus describing claim 5). *See also* claim 1 invalidity analysis, Savidis Decl., 111. Further, the adjustable element contains (c) "third part" threaded nut 20 of Kurtin '629 (if combining Kurtin '532 with Kurtin '629) or threaded screw 5 of Gordon (if combining Kurtin '532 with Kurtin '629 as further modified by

Gordon). Thus, both adjustable elements have an inclined ramp (thus describing claim 6). *See also* claim 1 invalidity analysis, *see* Savidis Decl., ¶111, Ex. 1004.

“Third part” nut 20 of Kurtin ‘629 or “third part” threaded screw 5 of Gordon is in moveable contact with the “second part” tab integral to or attached to front membrane support structure front ring 19 whereby rotation and resulting axial movement of the nut 20 or screw 5 relative to the “second part” tab changes the distance between transparent member rear lens 15 and front membrane support structure front ring 19 (thus describing claim 8). *See also* claims 1, 4, and 5 invalidity analysis directly above, Savidis Decl., ¶112. Accordingly, claims 4, 5, 6, and 8 are rendered obvious by Kurtin ‘532 in view of Kurtin ‘629 and Gordon under 35 U.S.C § 103(a). *See* Savidis Decl., ¶112.

5. Claim 7

See claim 2 invalidity analysis. Accordingly, claim 7 is rendered obvious by Kurtin ‘532 in view of Kurtin ‘629 and Gordon under 35 U.S.C § 103(a). *See* Savidis Decl., ¶113.

6. Independent Claim 9

Independent claim 9 is essentially identical to claims 1 and 3 with the only difference being that claim 9 replaced the adjustability limitations 1(d), (e), and (i) of claim 1 and “adjustable element” limitations 3(f)-(h) of claim 3 with “adjustable mechanism” limitations 9(f)-(j). *See* Ex. 1009, *see also* Savidis Decl., ¶114.

Substituting Kurtin's '629 adjustable connector or Kurtin's '629 adjustable connector as further modified by Gordon's adjustable connector for the non-adjustable connector of Kurtin '532 both yield the claimed "adjustable mechanism" which includes (a) a "first part" tab integral to or attached to front membrane support structure front ring 19, and therefore, coupled directly thereto and (b) a "second part" threaded nut 20 of Kurtin '629 (if combining Kurtin '532 with Kurtin '629) or "second part" threaded screw 5 of Gordon (if combining Kurtin '532 with Kurtin '629 as further modified by Gordon) in moveable contact with the first part whereby manual rotation and resulting axial movement of the "second part" threaded nut 20 of Kurtin '629 or threaded screw 5 of Gordon relative to the "first part" tab changes the distance between transparent member rear lens 15 and front membrane support structure front ring 19 at the peripheral location of the adjustable mechanism, while also allowing the distance between the membrane support structure and its respective lens at another peripheral location, *e.g.*, the bridge, to remain unchanged. Accordingly, claim 9's limitations 9(f)-(j) are rendered obvious by Kurtin '532 in view of Kurtin '529 and Gordon. *See* claims 1, 4, and 5, invalidity analysis, *see also* Savidis Decl., ¶115. Because the remaining limitations in claim 9 are identical to the limitations of claim 1 already shown to have been described by Kurtin '532 (*see* claim 1 invalidity analysis for

limitations 1(a)-(c) and (f)-(h)), claim 9 is rendered obvious by Kurtin ‘532 in view of Kurtin ‘629 and Gordon under 35 U.S.C § 103(a). Savidis Decl., ¶115.

7. Claim 10

The “second part” threaded screw 5 of Gordon includes threads (an inclined ramp) and that are in slideable contact with the “first part” tab integral to or attached to front membrane support structure front ring 19. *See* claims 1, 4, 5, and claim 9 invalidity analysis; *see also* Gordon at p. 3, lns. 13-17 (“one of said ears [tabs] being adaptive to receive the screw, and the screw having threaded engagement with the other of the ears to adjust said ears toward or away from each other”), *see also* Savidis Decl., ¶116. Thus, claim 10 is rendered obvious by Kurtin ‘532 in view of Kurtin ‘629 and Gordon under 35 U.S.C § 103(a). *Id.*

8. Claims 11 and 12

Substituting Kurtin’s ‘629 adjustable connector or Kurtin’s ‘629 adjustable connector as further modified by Gordon’s adjustable connector for the non-adjustable connector of Kurtin ‘532 both yield the claimed “adjustable mechanism” having the claimed third part having the claimed features.

If combining Kurtin ‘532 with Kurtin ‘629, the “third part” is the tab having screw 21 attached thereto, said tab integral to or attached to rear ring 20 which encircles and holds rear lens 15, and thus directly coupled (if not directly coupled, indirectly coupled) to transparent member rear lens 15 (thus also describing claim

12). The “second part,” threaded nut 20 of Kurtin, is in in moveable contact with the “third part” screw 21 attached to the tab integral to or attached to rear ring 20, whereby rotation and resulting axial movement of threaded nut 20 changes the distance between transparent member rear lens 15 and front membrane support structure front ring 19 at the peripheral location of the adjustable mechanism.

If combining Kurtin ‘532 with Kurtin ‘629 and further in view of Gordon, the “third part” is the tab integral to or attached to rear ring 20 which encircles and holds rear lens 15 and thus directly coupled (if not directly coupled, indirectly coupled) to transparent member rear lens 15 (thus also describing claim 12). The “second part,” threaded screw 5 of Gordon, is in in moveable contact with the “third part” tab, whereby rotation and resulting axial movement of screw 5 changes the distance between transparent member rear lens 15 and front membrane support structure front ring 19 at the peripheral location of the adjustable mechanism.

In both of the aforementioned embodiments, the distance between the membrane support structure and its respective lens at another peripheral location, *e.g.*, the bridge, remain unchanged. Accordingly, claims 11 and 12 are rendered obvious by Kurtin ‘532 in view of Kurtin ‘529 and Gordon. *See claim 1, 4, 5, and 9 invalidity analysis, See Savidis Decl., ¶ 120.*

9. Claim 13

Claim 13 is fatally confusing as written because the claim requires that “the *second part* of the adjustable mechanism is in slidable contact with both the first part *and the second part*.” (emphasis added). Notwithstanding, “second part” nut 20 of Kurtin ‘629 when rotated, is in slidable contact with the “first part” tab integral to or attached to front membrane support structure front ring 19 and with “third part” screw 21 attached to the tab integral to or attached to rear ring 20 (if combining Kurtin ‘532 with Kurtin ‘629). Similarly, “second part” threaded screw 5 of Gordon when rotated, is in slidable contact with the “first part” tab integral to or attached to front membrane support structure front ring 19 and “third part” tab integral to or attached to rear ring 20 (if combining Kurtin ‘532 with Kurtin ‘629 as further modified by Gordon). *See* claims 1, 4, 5, and 9 invalidity analysis, *see also* Savidis Decl., ¶121. Accordingly, claim 13 is rendered obvious by Kurtin ‘532 in view of Kurtin ‘529 and Gordon. *See* Savidis Decl., ¶121.

10. Claim 14

See claim 10 invalidity analysis. Thus, claim 14 is rendered obvious by Kurtin ‘532 in view of Kurtin ‘629 and Gordon under 35 U.S.C § 103(a). *See* Savidis Decl., ¶122.

11. Independent Claim 15

Independent claim 15 is essentially identical to claims 1, 3 and 9 with the only difference being that claim 15 replaced the adjustability limitations 1(d), (e),

and (i) of claim 1, the “adjustable element” limitations 3(f)-(h) of claim 3, and the “adjustable mechanism” limitations 9(f)-(j), with the “controllable spacing member” limitations 15(f)-(h). *See* Ex. 1009.

As explained in both the claim 1 and 3 invalidity analysis, substituting Kurtin’s ‘629 adjustable connector having threaded nut 20 and threaded screw 21 or Kurtin’s ‘629 adjustable connector as further modified by Gordon’s adjustable connector having threadably engaged screw 5 for the non-adjustable connectors of Kurtin ‘532, yields peripherally located, independent, manually adjustable structures that adjust, at the location of the adjuster, the distance between a membrane support structure and lens, while also allowing the distance between the membrane support structure and its respective lens at another peripheral location, e.g., the bridge, to remain unchanged. Furthermore, as explained in claims 4 and 5 invalidity analysis, the manually adjustable structure is coupled directly (if not directly then indirectly) to the transparent member and coupled directly to the membrane support structure. Accordingly, claim 15’s “controllable spacing member” limitations 15(f)-(h) are rendered obvious by Kurtin ‘532 in view of Kurtin ‘629 and Gordon. Further, because the remaining limitations in claim 15 are identical to the limitations of claim 1 already shown to have been described by Kurtin ‘532 (*see* claim 1 invalidity analysis for limitations 1(a)-(c) and (f)-(h)),

claim 15 is rendered obvious by Kurtin '532 in view of Kurtin '629 and Gordon under 35 U.S.C § 103(a). *See* Savidis Decl., ¶124.

12. Claim 16

The “controllable spacing member” as shown above in claim 15’s invalidity analysis contains threaded nut 20 and threaded screw 21 of Kurtin '629 (if combining Kurtin '532 with Kurtin '629) or threaded screw 5 of Gordon (if combining Kurtin '532 with Kurtin '629 as further modified by Gordon). Thus, both adjustable structures have an inclined ramp. Further, because of these threads, changing rotation of nut 20 of Kurtin '629 or screw 5 of Gordon changes their direction of axial movement, thereby changing the direction of motion of membrane support structure front ring 19. Thus, claim 16 is rendered obvious by Kurtin '532 in view of Kurtin '629 and Gordon under 35 U.S.C § 103(a). *See* Savidis Decl., ¶125.

13. Claim 17

The “controllable spacing member” as shown above in claim 15’s invalidity contains threaded nut 20 and threaded screw 21 of Kurtin '629 (if combining Kurtin '532 with Kurtin '629) or threaded screw 5 of Gordon (if combining Kurtin '532 with Kurtin '629 as further modified by Gordon). Thus, claim 17 is rendered obvious by Kurtin '532 in view of Kurtin '629 and Gordon under 35 U.S.C § 103(a). *See* Savidis Decl., ¶126.

VII. CONCLUSION

For the foregoing reasons, claims 1-17 of the '797 Patent are unpatentable. Petitioner therefore requests that an IPR of these claims be instituted pursuant to 35 U.S.C. § 314. Petitioner reserves the right to apply additional prior art and arguments, depending on any arguments and/or amendments Patent Owner might present. Petitioner also reserves the right to cite and apply any additional art that it might discover as relevant to the issued claims or any amended claims, as the post-grant review proceeds.

Respectfully submitted,
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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing PETITION FOR INTER PARTES REVIEW OF UNITED STATES PATENT NO. 8,967,797 and all Exhibits and other documents filed together with the Petition were served on August 26, 2015, via Express Mail to:

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