

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ADLENS USA, INC. AND ADLENS, LTD.,
Petitioner,

v.

SUPERFOCUS HOLDINGS LLC, SUPERFOCUS, LLC,
INSOLVENCY SERVICES GROUP, INC., AND
DR. STEPHEN KURTIN,
Patent Owner.

Case IPR2015-01821
Patent 8,967,797 B2

Before LORA M. GREEN, GRACE KARAFFA OBERMANN, and
ELIZABETH M. ROESEL, *Administrative Patent Judges*.

ROESEL, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

Petitioner, Adlens USA, Inc. and Adlens, Ltd., filed a Petition seeking *inter partes* review of claims 1–17 of U.S. Patent No. 8,967,797 B2 (Ex. 1001, “the ’797 patent”). Paper 2 (“Pet.”). Patent Owner, Superfocus Holdings LLC, *et al.*,¹ filed a Preliminary Response. Paper 9 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may be authorized only if the information presented in the Petition and the Preliminary Response shows that there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the Petition. Applying that standard, we institute an *inter partes* review of claims 1–12 and 14–17 of the ’797 patent for the reasons and on the grounds set forth below.

Our findings of fact and conclusions of law are based on the record developed thus far, before the filing of Patent Owner’s Response. This is not a final decision as to the patentability of any challenged claim. Our final decision will be based on the full record developed during the trial.

I. BACKGROUND

A. *Related Proceedings*

The parties state that the ’797 patent was asserted in *Superfocus Holdings LLC v. Adlens USA, Inc.*, No. 1:14-cv-14189 (D. Mass.), which was filed on November 18, 2014 and dismissed without prejudice on March 11, 2015. Pet. 1–2; Paper 8.

¹ Patent Owner identifies the following parties as comprising Patent Owner: Superfocus Holdings LLC; Superfocus, LLC; Insolvency Services Group, Inc., solely in its capacity as Assignee for the benefit of creditors of Zoom Focus Eyewear, LLC; and Dr. Stephen Kurtin. Paper 8.

The '797 patent is a continuation of and claims priority to the application that issued as U.S. Patent No. 8,708,487 B2, which is the subject of co-pending IPR2015-01824 between the same parties.

B. Information Relied Upon

Petitioner's patentability challenges are based on the following references:

Reference	Patent/Publication No.	Date	Exhibit
Gordon	US 1,269,422	June 11, 1918	1013
Kurtin et al. ("Kurtin '629")	US 5,371,629	Dec. 6, 1994	1012
Cronin et al. ("Cronin")	US 5,526,067	June 11, 1996	1011
Kurtin ("Kurtin '532")	US 2008/0084532 A1	Apr. 10, 2008	1004

In addition, Petitioner relies on the Declaration of Dr. Nickolaos Savidis, Ex. 1003 ("Savidis Declaration").

C. Asserted Grounds of Unpatentability

Reference(s)	Basis	Claim(s)
Cronin	§ 102(b)	3–17
Kurtin '532, Kurtin '629, and Gordon and/or Cronin ²	§ 103(a)	1–17

² Although not included in the summary or heading for asserted Ground 2, Cronin is relied upon in the alternative as providing a motivation to combine the teachings of Kurtin '532 and Kurtin '629, optionally as modified by Gordon. Pet. 45, 46.

II. ANALYSIS

A. *The '797 Patent (Ex. 1001)*

The '797 patent discloses variable focus spectacles (eyeglasses) in which each eye's lens can be adjusted independently of the other eye's lens. Ex. 1001, Title, Abstract, 1:56–58. The '797 patent describes the invention in connection with variable focus spectacles and lenses of the type disclosed in Kurtin '532, which is incorporated by reference in the '797 patent. *Id.* at 1:59–61, 1:66–67, 2:13–30, 3:36–39. Such lenses include a rigid lens, a distensible membrane, and a transparent liquid filling a space between the rigid lens and membrane. *Id.* at 2:13–17. The rigid lens and membrane are each held by rings spaced from one another and joined by a flexible sealing member, which keeps the liquid from escaping and allows the inter-ring spacing to be varied, thereby causing the membrane to bulge or recede and changing the optical power of the lens. *Id.* at 2:17–20, 2:24–28. According to the '797 patent, Kurtin '532 discloses a bilateral adjustment using an actuator within the bridge of the eyeglasses, while the inter-ring spacing at a point substantially opposite the bridge is set by a leaf hinge. *Id.* at 2:1–9, 2:20–24.

In the invention of the '797 patent, the leaf hinge of Kurtin '532 “is replaced by a hinge means with controllable axial length ('H/CAL') which can be manually set by the wearer.” *Id.* at 2:31–33; *see also* 3:52–55. The H/CAL, also referred to as a “fluctuating vision compensation mechanism,” allows the inter-ring spacing and optical power of each lens of the eyeglasses to be adjusted for each eye separately. *Id.* at 2:33–48, 3:4–9.

The variable focus spectacles are shown in Figures 1–3 of the '797 patent, reproduced below:

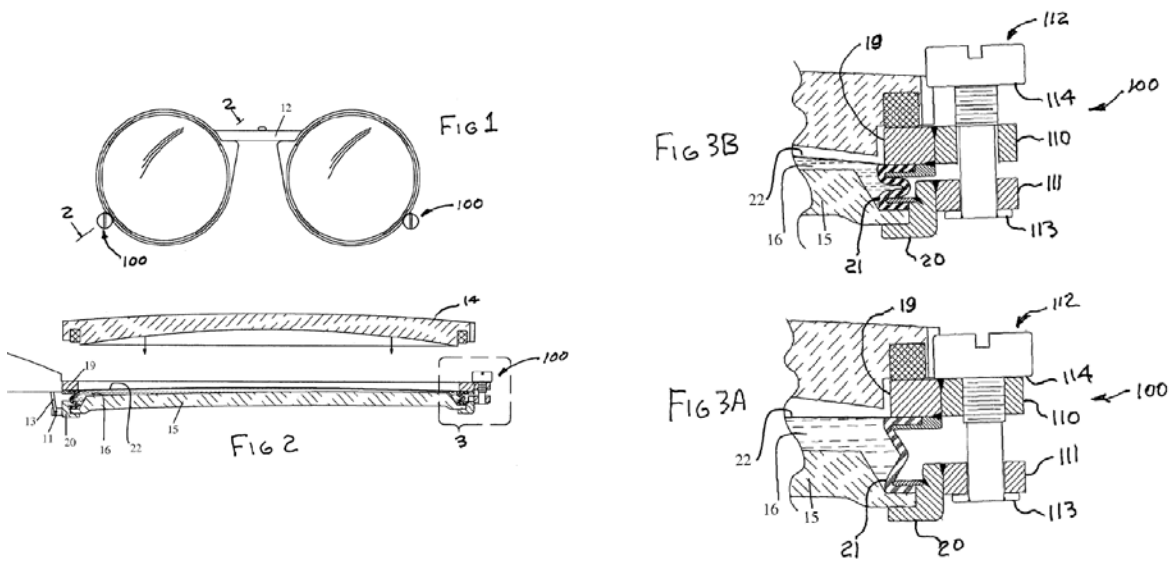


Figure 1 shows a front view of a pair of eyeglasses. *Id.* at 3:23–24. Figure 2 shows a cross-sectional view of one lens unit, and Figures 3A and 3B show an enlarged view of the H/CAL adjustment mechanism set to provide minimum and maximum optical power, respectively. *Id.* at 3:25–31, 3:60–62.

As shown in Figures 1–3, the eyeglasses include bridge 12, and each lens unit includes rear lens 15, transparent optical liquid 16, front ring 19, rear ring 20, bellows 21, and distensible membrane 22. According to the '797 patent, each of these components is disclosed in Kurtin '532 with the same identification numbers, and components added by the '797 patent are given numbers over 100. *Id.* at 3:36–39.

Figure 1 shows two “fluctuating vision compensation mechanisms 100” in a pair of variable focus spectacles. *Id.* at 3:50–52. As shown in Figures 3A and 3B, each mechanism 100 includes tab 110 attached to front ring 19 and tab 111 attached to rear ring 20, each tab having a hole to receive controllable spacing screw 112 having head 114 and retainer 113 to keep the screw from coming out of tab 111. *Id.* at 3:63–4:11. The hole in

tab 110 is tapped (threaded), such that rotation of screw 112 adjusts the distance between front ring 19 and rear ring 20 at the location of mechanism 100. *Id.* at 3:65–67, Figs. 3A, 3B.

B. Illustrative Claim

The '797 patent includes 17 claims, of which claims 1, 3, 9, and 15 are independent. Claim 3 of is reproduced below with bracketing lettering and a paragraph break added to correspond to Petitioner's contentions:

3. [a] Variable focus spectacles comprising first and second lens units, each lens unit comprising:
 - [b] a transparent member;
 - [c1] a membrane support structure, having an opening therein, being disposed adjacent to and within a field of view of the transparent member;
 - [c2] a transparent membrane attached to the membrane support structure across the opening;
 - [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;
 - [e] liquid having a predetermined index of refraction substantially filling a space between the transparent member and the membrane support structure within the seal; and
 - [f] 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
 - [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,
 - [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.

Ex. 1001, 5:11–40. Claims 1, 9, and 15 of the '797 patent each recites limitations identical to paragraphs [a], [b], [c1], [c2], [d], and [e] of claim 3 and limitations similar to, but not the same as, paragraphs [f], [g], and [h] of claim 3. *See* Ex. 1009 ('797 Independent Claims – Comparison).

C. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1275–79 (Fed. Cir. 2015), *cert. granted sub nom. Cuozzo Speed Techs. v. Lee*, 84 U.S.L.W. 3218 (U.S. Jan. 15, 2016) (No. 15-446). Claim terms are given their ordinary and customary meaning, as understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Petitioner proposes a construction for the term, “inclined ramp,” which is not disputed by Patent Owner. Pet. 5. Patent Owner proposes a construction for a different claim term, “attached to the membrane support structure across the opening.” Prelim. Resp. 30–32.

We determine that it is not necessary to provide an explicit construction for any claim term at this stage of the proceeding. *See, e.g., Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve

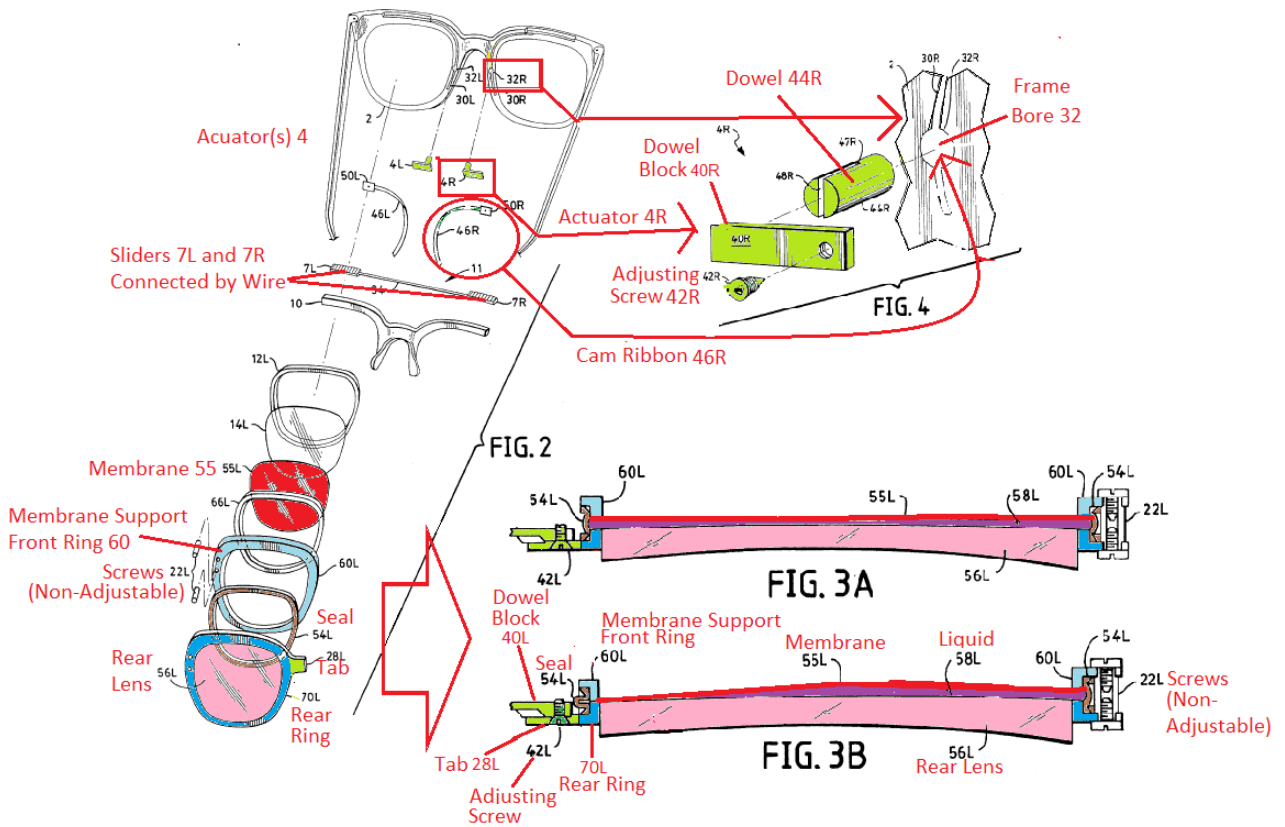
the controversy’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

D. Anticipation

Petitioner contends that claims 3–17 of the ’797 patent are anticipated by Cronin (Ex. 1011). Pet. 27–42.

Cronin discloses variable focal length eyeglasses having a frame, a pair of lens assemblies, and an actuation mechanism. Ex. 1011, Abstract, 2:48–50, Fig. 1. Each lens assembly includes a rigid substrate, a membrane support spaced from the rigid substrate, a flexible seal extending between the rigid substrate and the membrane support, a transparent elastomeric membrane sealed around its periphery to the membrane support, and a transparent liquid filling the space between the rigid substrate and the membrane forming a liquid lens. *Id.* at Abstract, 2:50–57. The actuation mechanism causes relative motion between the membrane and the rigid substrate so that both optical and prismatic power of the liquid lens changes by varying a force applied to the flexible seal along one section, while another section of the seal acts as a hinge. *Id.* at Abstract, 2:57–64.

The eyeglasses are shown in Figures 2, 3A, 3B, and 4 of Cronin. Petitioner’s annotated and colored versions of these figures are reproduced below:



Pet. 18. Figure 2 shows a pair of variable focus eyeglasses from a rear perspective, including exploded views of an actuator mechanism and a left lens assembly. Ex. 1011, 3:18–20, 3:64–4:9. Figures 3A and 3B are cross-sectional views of a left lens assembly with elastomeric seal 54L in a decompressed position (Fig. 3A) and compressed position (Fig. 3B). *Id.* at 3:21–27, 4:18–42. Figure 4 shows a fragmented perspective view of a right lens actuator, including calibration screw 42R. *Id.* at 3:29–31, 4:16–21.

Petitioner contends that Cronin discloses a transparent member (rear lens 56L), a membrane support structure (front ring 60L), a transparent membrane (elastomeric membrane 55L) attached to the membrane support structure, a flexible seal (elastomeric seal 54) extending between the transparent member and the membrane support structure, and liquid 58

filling a space between the transparent member and the membrane support structure within the seal, thus satisfying elements [a], [b], [c1], [c2], [d], and [e] of claim 3 and the corresponding limitations of claims 9 and 15. Pet. 27–29, 35, 39. With respect to claim elements 3[f], [g], and [h], Petitioner contends that Cronin “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.” *Id.* at 29–30; *see also id.* at 35–36, 40–41 (Petitioner’s contentions for corresponding limitations of claims 9 and 15).

Patent Owner contests Petitioner’s anticipation ground in two respects: *First*, Patent Owner argues that Cronin does not provide an enabling or operative disclosure of manual independent adjustment of each lens, as recited in paragraphs [f]–[h] of claim 3 and the corresponding paragraphs of claims 9 and 15 (hereinafter “adjustment limitations”). Prelim. Resp. 34–42. *Second*, Patent Owner argues that Cronin does not disclose “a transparent membrane attached to the membrane support structure across the opening,” as recited in paragraph [c2] of claim 3 and the corresponding paragraph of claims 9 and 15. *Id.* at 42–46. We address each argument in turn in the subsections below.

1. *Enabling and Operative Disclosure of Adjustment Limitations*

“Whether a prior art reference is enabling is a question of law based on underlying factual findings.” *In re Morsa*, 803 F.3d 1374, 1376 (Fed. Cir. 2015). “Enablement of prior art requires that the reference teach a skilled artisan—at the time of filing—to make or carry out what it discloses in relation to the claimed invention without undue experimentation.” *Id.* at 1377.

Patent Owner contends that Petitioner misinterprets and mislabels Cronin Figs. 3A and 3B and that, even if Petitioner's annotations are correct, Cronin's screw 42, as depicted in Figs. 3A and 3B, is not capable of adjusting the distance between the transparent member and membrane support structure of the lens assembly. Prelim. Resp. 19–26, 38–40. Patent Owner further contends that Cronin Figure 4 does not show how actuator 4 and screw 42 are attached to the lens assembly or how they are adjusted. *Id.* at 38. In addition, Patent Owner contends that Cronin's disclosure is inoperable because Figures 1 and 2 show screw 42 is remote from tab 28 of the lens assemblies and dowel block 40 and screw 42 extending into the wearer's field of vision. *Id.* at 41–42.

We find that Patent Owner provides persuasive criticisms of Cronin Figures 3A and 3B and Petitioner's annotations of Figure 3B. On this record, we agree with Patent Owner that Petitioner's identifications of "Tab 28L" and "Dowel Block 40L" in Cronin Figure 3B appear to be inconsistent with Cronin Figures 1, 2, and 4 for the reasons explained by Patent Owner. Prelim. Resp. 22–24. In addition, we note that the location of screw 42, as shown in Cronin Figure 3B, appears to be inconsistent with the location of screw 42, as shown in Cronin Figure 4. *Compare* Ex. 1011, Fig. 3B (showing screw 42L inserted in hole in rear ring 70L such that screw head is flush with surface of rear ring 70L³), *with id.* Fig. 4 (showing screw 42R being inserted in hole in dowel block 40R such that screw head will be flush with surface of dowel block 40R). We also agree with Patent Owner that,

³ Rear ring 70L is not labeled in Cronin Figure 3B, but Patent Owner does not contest Petitioner's labeling of this structure in Figure 3B.

even accepting Petitioner's annotations, it is not apparent from Cronin Figures 3A and 3B how rotation of screw 42L would adjust the distance between rear ring 70L and front ring 60L. Prelim. Resp. 39.

Patent Owner does not, however, address other disclosures in Cronin relied upon by Petitioner to teach the adjustment limitations of the '797 patent claims. Pet. 30. In addition to Figures 2, 3A, 3B, and 4, Petitioner relies upon the following disclosures as support for its contention that Cronin discloses the adjustment limitations:

Turning first to FIG. 3A, a left transparent rigid substrate, typically a rigid lens 56L with a corrective prescription carried on its rear surface, and an elastomeric membrane 55L connected to a left membrane support (i.e. a front ring) 60L are spaced apart via a left elastomeric seal 54L. A transparent liquid 58 fills the space between the left rigid substrate 56L and the left membrane 55L. *When a lens actuator 4L (see FIG. 2) applies a force across the left elastomeric seal 54L at the point of contact of a left adjusting screw 42L (which is also used to calibrate the left lens system to match the focus of the right lens system), then the left elastomeric seal 54L compresses at that point.* A pair of hinges 22L (see also FIG. 2) is separated from the point of contact by approximately 180 degrees about the perimeter of the lens system. Hence, the compression at the point of contact will cause the liquid 58L to distend the left elastomeric membrane 55L to the substantially spherical shape shown in FIG. 3B. This distention allows the liquid 58L to act as an additional positive lens. The optical power of the left lens assembly thus depends upon the refractive index of the liquid 58L and the curvature of the elastomeric membrane 55L.

Ex. 1011, 4:22–43 (emphasis added).

Further, to avoid visual discomfort, the linear actuation mechanism for a pair of lens assemblies in spectacles must track and match each lens assembly so that, for every setting of the sliders 7L, 7R, each of the user's eyes focuses at sensibly the same object distance. This requirement dictates that 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.* Furthermore, to assure accurate tracking, the generation of this displacement must not twist either lens assembly about any axis.

The above preferred embodiment of a linear actuation mechanism according to the current invention, as shown in the various figures, more specifically includes a sheathed cable and slider assembly **11** which, when manually activated by either the left or right slider, simultaneously moves the left ribbon **46L** and the right ribbon **46R** along ribbon slots **30L** and **30R**, respectively, so that cam surfaces **49L** and **49R** can move along lens actuator slot surfaces **47L** and **47R** to move the lens actuators **4L**, **4R** in and out of the dowel slots **32L** and **32R**, in turn compressing or decompressing the variable focus lenses via screws **42L** and **42R** so as to alter the focus of the left and right lens assemblies.

Id. at 5:8–36 (emphasis added).

The cam ribbon **46R** shown in FIG. **5A** is appropriate for use with the right lens assembly, whereas a similar cam ribbon **46L** with the cam surface **49L** reversed (from surface **49R**) is shown in FIG. **5B** as appropriate for use with the left lens assembly. The cam ribbons **46L**, **46R** are inserted into ribbon slots **30L**, **30R**, respectively, where they are jointly moved back and forth in accordance with the manual operation of either one of the sliders. The cam surfaces **49L**, **49R** of ribbons **46L**, **46R** pass through slots **48L**, **48R** along cammed surfaces **47L**, **47R** of slotted dowel pieces **44L**, **44R**. Together, a block **40L**, a slotted dowel piece **44L** and an adjusting screw **42L** make up a left lens actuator **4L**. Similarly, a right lens actuator **4R** includes a block **40R**, a slotted dowel piece **44R** and an adjusting screw **42R**. *The adjusting screw 42L engages the*

left rear ring 70L at a singular point so that the left elastomeric membrane 54L can be either compressed or decompressed. Hence when 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.

Id. 5:53–6:13 (emphasis added); *see* Pet. 30 (also citing Ex. 1011, 3:63–4:8 and 4:50–54).

Therefore, even with any inconsistencies or inaccuracies in Cronin Figures 3A and 3B and Petitioner’s annotations of Figure 3B, as discussed above, we determine that Petitioner’s argument and evidence, including Cronin Figures 1, 2, and 4 and the above-quoted descriptions, show sufficiently that Cronin provides an enabling and operative disclosure of the adjustment limitations of challenged claims 3, 9, and 15. The above-quoted passages are sufficient to support Petitioner’s contention that manual rotation of adjusting screw 42 changes the distance between front ring 60 and rear ring 70, which holds rear lens 56, at the peripheral location of adjusting screw 42, thereby changing the focal distance (optical power) of the fluid filled lens. Pet. 30.⁴

⁴ Like Petitioner, we omit the reference numeral suffixes, L and R, which Cronin uses to designate similar structures of the left and right lens assemblies, respectively. Ex. 1011, 4:9–10.

We are persuaded that Cronin Figures 1, 2, and 4 and the above-quoted descriptions, all of which are cited and relied upon by Petitioner, explain sufficiently how this adjustment is accomplished. In particular, Cronin discloses that screw 42 engages rear ring 70 at a single point so that elastomeric membrane 54 can be either compressed or decompressed. Ex. 1011, 5:66–6:2. Cronin further discloses that a force is applied across elastomeric seal 54 at the point of contact of adjusting screw 42. *Id.* at 4:28–30. According to Cronin, that force can be applied in two ways: first, by moving slider 7 to activate actuator 4, and second, by adjusting calibration screw 42. *Id.* at 4:28–32, 5:17–22. In either case, the result is to compress or decompress elastomeric seal 54 by pressing or releasing the pressure on rear ring 70 at the point where screw 42 engages the ring, thereby changing the distance between rear ring 70 and front ring 60, both of which are positioned between screw 42 and frame 2. *Id.* at 5:25–36, 5:63–6:13, Figs. 1, 2, and 4.

Furthermore, we are not persuaded to deny review based upon Patent Owner's arguments that, in Cronin, screw 42 is remote from tab 28 and dowel block 40 and screw 42 extend into the wearer's field of vision. Prelim. Resp. 41–42. Cronin's teaching that screw 42 engages rear ring 70 at a point remote from tab 28 identifies an inaccuracy in Petitioner's annotations of Cronin Figure 3B, but on this record, it does not render Cronin's disclosure inoperable for the reasons just explained. Ex. 1011, Figs. 2, 4, 5:66–6:2. That same teaching undercuts Patent Owner's contention that dowel block 40 and screw 42 extend into the wearer's field of vision: screw 42 engages rear ring 70, which frames, rather than extends into, the wearer's field of vision. *Id.* On this record, although Petitioner's

identification of tab 28 as part of Cronin's adjustment structure may not be accurate, we are nevertheless persuaded that Petitioner's arguments and evidence show sufficiently that Cronin discloses the "adjustable element" of claim 3 and the corresponding elements of claims 9 and 15. Pet. 29–30, 35–36, 40–41; Ex. 1011, Figs. 1, 2, and 4, 4:22–43, 5:8–36, 5:53–6:13.

2. *"Transparent Membrane Attached to the Membrane Support Structure Across the Opening"*

With respect to this limitation of independent claims 3, 9, and 15, Petitioner contends that Cronin discloses transparent elastomeric membrane 55L attached to and across the opening of "membrane support (i.e., a front ring) 60L." Pet. 28 (quoting Ex. 1011, 4:24–25 and citing *id.* at 4:21–27, Figs. 2, 3A, and 3B).

Patent Owner contends that this claim limitation is not disclosed by Cronin. According to Patent Owner, Cronin Figure 7 shows that membrane 55L is attached to membrane mount 66L between membrane mount 66L and seal 54L and does not extend across an opening of front ring 60L. Prelim Resp. 43–45 (citing and quoting Ex. 1011, 6:40–43).

Cronin discloses that each lens assembly includes "a membrane support" and "a transparent elastomeric membrane sealed around its periphery to the membrane support." Ex. 1011, 2:50–55 (Summary of the Invention). With reference to Figure 3A, Cronin discloses that "elastomeric membrane **55L** [is] connected to a left membrane support (i.e. a front ring) **60L**." *Id.* at 4:23–25.

On this record, we are persuaded that Petitioner's argument and evidence, including Cronin Figures Figs. 2, 3A, and 3B, and column 4, lines 21–27, shows sufficiently that Cronin discloses a "transparent

membrane attached to the membrane support structure across the opening,” as recited in the challenged claims of the ’797 patent.

Patent Owner does not dispute that Cronin Figures 3A and 3B show transparent elastomeric membrane 55L attached to membrane support front ring 60L from one side of the opening to the other. Prelim. Resp. 44–45. Instead, Patent Owner characterizes these figures as “simplified” compared with Cronin Figure 7, which Patent Owner contends shows that membrane 55L is not attached to front ring 60L and does not extend from one side of the opening to the other. *Id.* at 44–46 (citing Ex. 1011, 6:40–43).

On this record, we are not persuaded that Cronin Figure 7 or the description of that figure contradict the Summary of the Invention, Figures 3A and 3B, or the description of those figures, which we determine are sufficient, at this stage, to support Petitioner’s contention that the disputed claim limitation is disclosed by Cronin.

3. *Dependent Claims*

Petitioner identifies disclosures in Cronin corresponding to the limitations of dependent claims 4–8, 10–14, 16, and 17. Pet. 31–34, 37–39, 41–42. At this stage of the proceeding, Patent Owner presents no argument regarding dependent claims 4–8, 10–14, 16, and 17 separate from its arguments regarding independent claims 3, 9, and 15.

On this record, although Petitioner’s identification of tab 28 as part of Cronin’s adjustment structure may not be accurate, *id.* at 31–32, 34, 37–38, 41, we are nevertheless persuaded that Petitioner’s arguments and evidence show sufficiently that Cronin discloses the limitations of dependent claims 4–6, 8, 11, 12, and 16. We rely, in particular, on Petitioner’s assertion that tab 28 is part of rear ring 70, *id.* at 31, 34, 38, 41, which

Cronin discloses is engaged by adjusting screw 42, Ex. 1011, 5:66–6:2. We are also persuaded that Petitioner’s arguments and evidence show sufficiently that Cronin discloses the limitations of dependent claims 7, 10, 14, and 17. Pet. 32–33, 37, 39, 42.

Regarding claim 13, Petitioner contends that the claim “is fatally confusing as written.” Pet. 38. Petitioner’s anticipation contention is based upon replacing the words “second part” (last two words of claim 13) with “third part.” *Id.* Petitioner’s contention amounts to a substantive re-drafting of the claim, which decline to do on this record. *Rembrandt Data Techs., LP v. AOL, LLC*, 641 F.3d 1331, 1339 (Fed. Cir. 2011) (declining patentee’s request to substantively re-draft its claims); *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1357 (Fed. Cir. 2003) (correction of patent is appropriate “only if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims.”). We, therefore, decline to institute review of claim 13.

Accordingly, on this record, we are persuaded that Petitioner demonstrates a reasonable likelihood of prevailing on its assertion that Cronin anticipates each of claims 3–12 and 14–17 of the ’797 patent.

E. Obviousness

Petitioner asserts that the subject matter of claims 1–17 would have been obvious to one of ordinary skill in the art based upon the disclosures of Kurtin ’532 (Ex. 1004) and Kurtin ’629 (Ex. 1012) in view of Gordon (Ex. 1013) and/or Cronin (Ex. 1011). Pet. 42–59.

The disclosure of Kurtin ’532 is discussed in Section II.A. *See* pages 3–5, *supra*. As discussed above, the ’797 patent acknowledges that

the invention is a modification of Kurtin '532 consisting of replacing the disclosed leaf hinge "by a hinge means with controllable axial length ('H/CAL') which can be manually set by the wearer." Ex. 1001, 2:31–33; *see also* 1:59–61, 3:52–55. The '797 patent further acknowledges that Kurtin '532 discloses all elements of the invention, except for the H/CAL adjustment mechanism, also referred to as a "fluctuating vision compensation mechanism." *Id.* at 2:13–40, 3:36–49.

Kurtin '629 discloses spectacles having variable focal length lenses including frame 10, rigid lens 12, membrane 15 attached at its periphery to membrane support 14, flexible seal 13 between the rigid lens and membrane support, and liquid 21 between the rigid lens and membrane. Ex. 1012, Abstract, Figs. 1–3, 3:10–33, 3:40–45. The optical power of the lenses is varied by turning nut 20, which is threaded on screw 21 and engages actuating tabs 19 of membrane supports 14, causing them to pivot relative to frame 10 via hinges 16 and pins 17 and causing membranes 15 to bulge or recede. *Id.* at Abstract, Figs. 2–3, 3:50–4:9.

Gordon discloses spectacles having adjustable focus lenses. Ex. 1013, Figs. I–IV, 1:9–23, 1:41–42. Gordon discloses a first embodiment shown in Figure I and a second embodiment shown in Figures II–IV. *Id.* at 1:30–52, 2:5–6. In both embodiments, the focus of each lens 7 can be adjusted by turning screw 5, which changes the diameter and circumference of the lens and causes lens side portions 8 to move toward or away from each other with the help of transparent liquid 11 that fills a pocket between side portions 8. *Id.* at Figs. I–IV, 1:67–80, 1:87–100, 2:5–22. In the Figure I embodiment, screw 5 connects ears 4 of lens frames 3 to bridge seats 4, and

in the Figure II embodiment, screw 5 connects ears 12 of lens frames 3 to each other. *Id.* Figs. I, II, and IV, 1:45–52, 2:5–19.

The disclosure of Cronin is discussed in Section II.D. *See* pages 8–9 and 12–15, *supra*. For purposes of obviousness, it is important that Cronin’s disclosed embodiment includes lens actuators 4L and 4R having calibration screws 42L and 42R, respectively. Ex. 1011, 5:63–66. The purpose of these screws is to allow independent calibration (i.e., adjustment) of the focal length of the left and right lenses, respectively. *Id.* at 4:27–32, 5:17–22, 5:66–6:2, Figs. 2 and 4.

1. *Independent Claims*

Petitioner contends that Kurtin ’532 teaches all limitations of independent claims 1, 3, 9, and 15, except for the adjustment limitations.⁵ Pet. 42–44, 51, 53, 57–58. Citing the Savidis Declaration, Petitioner contends that it would have been obvious to modify Kurtin ’532 to provide independent adjustability of each lens, as taught by Gordon or Cronin, by replacing Kurtin ’532’s non-adjustable connector (leaf hinge 23) with an adjustable connector, such as the screw, nut, and tab arrangement of Kurtin ’629 or that arrangement modified by the screw and tabs taught by Gordon. Pet. 44–50; Ex. 1003 ¶¶ 101–107. Petitioner contends that the proposed modification of Kurtin ’532 would have resulted in variable focus spectacles satisfying the adjustment limitations of independent claims 1, 3, 9, and 15. Pet. 44–50, 51, 53–55, 57–59.

⁵ The adjustment limitations are recited in paragraphs [f]–[h] of claim 3 and the corresponding paragraphs of claims 1, 9 and 15. *See* Ex. 1009.

Patent Owner does not challenge Petitioner's contention that Kurtin '532 teaches all limitations of independent claims 1, 3, 9, and 15, except for the adjustment limitations. Regarding the adjustment limitations, Patent Owner challenges the sufficiency of Petitioner's rationale for combining Kurtin '532 with Kurtin '629 as motivated by Gordon or Cronin and for further modification of that combination in view of Gordon. Prelim. Resp. 46–58.

Patent Owner contends that Gordon would not have motivated the combination of Kurtin '532 and Kurtin '629 and that these three references are not combinable because Gordon's method of adjusting the optical power of a liquid-filled lens is different from and incompatible with the adjustment method of Kurtin '532 and Kurtin '629. Prelim. Resp. 47–52, 55. According to Patent Owner, Kurtin '532 and Kurtin '629 teach adjusting both lenses simultaneously by changing the distance between a membrane support and a rigid lens, while Gordon teaches adjusting each lens by reducing the circumference of the lens frame causing the lens to bulge. *Id.* at 49–52, 55.

We agree with Patent Owner that Gordon's method for adjusting the optical power of a liquid-filled lens is different from the method disclosed in each of Kurtin '532 and Kurtin '629. Petitioner, however, relies upon Gordon to teach the concept of independent adjustment of each lens, not the specific method of adjustment. The fact that Gordon's adjustment method differs in some respects from that taught by Kurtin '532 and Kurtin '629 does not detract from Gordon's teaching of independent adjustment of each lens and does not make it less obvious to modify Kurtin '532 to make each lens independently adjustable. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)

("[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art."); *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) ("Combining the teachings of references does not involve an ability to combine their specific structures.").

Patent Owner further contends that Petitioner's proposed substitution would render Kurtin '532 unsuitable for its intended use and change its principle of operation by vitiating "a critical function of the leaf hinge." Prelim. Resp. 53–54. On this record, we are not persuaded that the liquid-filling function of Kurtin '532's leaf hinge is "critical," as argued by Patent Owner. *Id.* at 53. The evidence demonstrates that, while hole 25 in leaf hinge 23 permits insertion of a hypodermic syringe for filling the lens with liquid, Ex. 1004 ¶ 41, the same function could be performed without the leaf hinge, simply by inserting a needle through the rubber of bellows 21 at an appropriate location, as described in the preceding paragraph of Kurtin '532, *id.* ¶ 40.

Patent Owner further contends that it would not have been obvious to modify the actuator of Kurtin '629 with Gordon's screw because, whereas Kurtin '629's actuator comprising nut 20 and screw 21 is oriented perpendicular to the lens surface, Gordon's screw 5 is oriented parallel to the lens surface and therefore could not have performed the intended function of Kurtin '629's actuator. Prelim. Resp. 54–57. We are not persuaded by Patent Owner's argument, which misstates the substitution proposed by Petitioner. The Petition asserts:

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.

Pet. 49.

Petitioner's proposed modification adopts the perpendicular orientation of Kurtin '629's nut and screw combination, but uses the screw and threaded hole taught by Gordon in the orientation taught by Kurtin '629 to adjustably connect the membrane support and lens holding ring taught by Kurtin '532. *Id.* On this record, the evidence shows sufficiently that Petitioner's proposed modification involves the substitution of one known type of adjustable screw connection for another, that both types of connections were known in the art for performing the same function (adjusting the distance between two tabs connected to eyeglass lens frames), and that the substitution would have yielded predictable results. Pet. 49; Ex. 1004 (Kurtin '532 Fig. 5 showing front ring 19 non-adjustably connected to rear ring 20); Ex. 1012 (Kurtin '629 Fig. 3 showing and tab 19 of front rim 14 adjustably connected to rear frame 10 by screw 21 and nut 20); Ex. 1013 (Gordon Fig. IV showing tabs 12 adjustably connected by screw 5 via threaded hole in one tab and unthreaded hole in other tab). Accordingly, on this record, we are persuaded that the evidence is sufficient to support the obviousness of Petitioner's proposed modification. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 416 (2007) ("when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result").

Patent Owner further contends that the Kurtin references cannot be combined with Cronin because Cronin does not disclose independently adjusting each eye's lens or adjusting the distance between a transparent member and membrane support structure of each lens. Prelim. Resp. 57–58. According to Patent Owner, “since Cronin does not enable a [person of ordinary skill in the art] to make the claimed invention without undue experimentation, . . . it cannot be used in an obviousness analysis.” *Id.*

For the reasons discussed above, on this record, we are persuaded that Cronin discloses independently adjusting each eye's lens by using a calibration screw to adjust the distance between a transparent member and membrane support. Ex. 1011, 2:48–64, 4:27–32, 5:17–22, 5:66–6:2, Figs. 2 and 4. For purposes of determining whether to institute review based on obviousness, we do not need to decide whether Cronin's disclosure is sufficient to enable one of ordinary skill in the art to make and use an independent adjustment mechanism. Petitioner's reliance on Cronin to provide a reason or motivation to combine and modify Kurtin '532 and Kurtin '629, optionally modified by Gordon, Pet. 45, 46, does not require an enabling or operative disclosure because the concept and desirability of independently adjusting each eye's lens are undisputedly taught by Cronin, Ex. 1011, 4:27–32, 5:9–22, and Petitioner relies on Kurtin '532, Kurtin '629, and Gordon to teach the details of how to implement that concept, Pet. 44–50. *ABT Sys., LLC v. Emerson Elec. Co.*, 797 F.3d 1350, 1360 n.2 (Fed. Cir. 2015) (“suggestion that [prior art references] are non-enabled is misplaced, since even ‘[a] non-enabling reference may qualify as prior art for the purpose of determining obviousness,’ . . . and even ‘an inoperative device . . . is prior art for all that it teaches’”) (quoting *Symbol Tech., Inc. v. Opticon*,

Inc., 935 F.2d 1569, 1578 (Fed. Cir. 1991) and *Beckman Instruments, Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989)). The case law relied upon by Patent Owner⁶ does not support a different result because, in contrast to those cases, at this stage of the proceeding, Patent Owner does not dispute sufficiently that Petitioner's cited prior art as a whole is sufficient to enable one of ordinary skill in the art to design and build an operative mechanism for adjusting each lens independently.

On this record, we are persuaded that the information submitted by Petitioner, including Kurtin '532 (Ex. 1004), Kurtin '629 (Ex. 1012), Gordon (Ex. 1013), Cronin (Ex. 1011), and the Savidis Declaration (Ex. 1003 ¶¶ 95–127), shows sufficiently that it would have been obvious to one of ordinary skill in the art to provide variable focus spectacles in which each eye's lens is manually adjustable independently of the other eye's lens by changing a distance between a membrane support and a transparent member, as recited in each of independent claims 1, 3, 9, and 15.

2. *Dependent Claims*

Petitioner contends that its proposed modification of Kurtin '532 would have resulted in variable focus spectacles satisfying the limitations of dependent claims 2, 4–8, 10–14, 16, and 17. Pet. 50, 52–53, 55–57, 59. At this stage, Patent Owner presents no argument regarding dependent claims 2, 4–8, 10–14, 16, and 17 separate from its argument regarding independent claims 1, 3, 9, and 15.

⁶ *Proctor & Gamble Co. v. Teva Pharms. USA, Inc.*, 566 F.3d 989, 997 (Fed. Cir. 2009); *In re Kumar*, 418 F.3d 1361, 1368 (Fed. Cir. 2005). See Prelim. Resp. 58.

On this record, we are persuaded that Petitioner's argument and evidence show sufficiently that replacing Kurtin '532's non-adjustable connector (leaf hinge 23) with an adjustable connector, such as the screw, nut, and tab arrangement of Kurtin '629 or that arrangement modified by the screw and tabs taught by Gordon would have resulted in variable focus spectacles satisfying the limitations of dependent claims 2, 4–8, 10–12, 14, 16, and 17. *Id.* at 50, 52–53, 55–56, 59.

Regarding claim 13, Petitioner repeats its contention that the claim “is fatally confusing as written.” Pet. 57. Petitioner's obviousness contention is again based upon replacing the words “second part” (last two words of claim 13) with “third part.” *Id.* Petitioner's contention amounts to a substantive re-drafting of the claim which, as noted above, we decline to do on this record. *Rembrandt*, 641 F.3d at 1339; *Novo Indus.*, 350 F.3d at 1357. We, therefore, decline to institute review of claim 13.

Accordingly, on this record, we are persuaded that Petitioner's argument and evidence are sufficient to demonstrate a reasonable likelihood of prevailing on its assertion that the subject matter of claims 1–12 and 14–17 would have been obvious to one of ordinary skill in the art based upon the disclosures of Kurtin '532 and Kurtin '629 in view of Gordon and/or Cronin.

F. Procedural Matters Raised by Patent Owner

1. Savidis Declaration

Patent Owner argues that the Petition improperly incorporates by reference the Savidis Declaration, without presenting substantive arguments explaining the significance or relevance of the testimony. Prelim. Resp. 1–6. In the alternative, Patent Owner argues that the Savidis Declaration should

be given no weight because it repeats verbatim conclusory arguments from the Petition without providing any independent analysis. *Id.* at 6–10.

We are not persuaded that any portion of the Petition identified by Patent Owner improperly incorporates by reference testimony from the Savidis Declaration. We agree with Patent Owner that, for the most part, the Savidis Declaration repeats verbatim arguments from the Petition. We do not, however, agree that the Savidis Declaration is merely conclusory or that it fails to disclose the underlying facts or data upon which the opinions are based. Nor does verbatim repetition necessarily reflect a lack of independent analysis. Whether the Declaration reflects the independent analysis and opinions of Dr. Savidis can be explored through cross-examination.

2. *Prior Art Combinations*

We are not persuaded by Patent Owner's argument that the Petition lacks specificity in identifying the alternative combinations of prior art references on which Petitioner's obviousness ground is based. Prelim. Resp. 10–12. Our understanding of these alternatives is discussed in Section II.E. *See* pages 17–24, *supra*. Patent Owner provides a list of these alternatives, Prelim. Resp. 11, which is accurate with one exception: we understand Petitioner to rely on Cronin as a motivating reference, not just for the combination of Kurtin '532 and Kurtin '629, but also for the alternative combination of Kurtin '532, Kurtin '629, and Gordon. Pet. 44–50. The fact that Petitioner's claim chart does not include citations to Cronin is not determinative because the Petition itself identifies how that reference is relied upon to support Petitioner's obviousness ground. *Id.* at 45, 46.

III. CONCLUSION

For the reasons stated above, we institute an *inter partes* review as set forth in the Order. At this stage of the proceeding, the Board has not made a final determination with respect to the patentability of the challenged claims or any underlying factual or legal issues.

IV. ORDER

It is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of the '797 patent is instituted on the following grounds of unpatentability asserted in the Petition:

Claims 3–12 and 14–17 under 35 U.S.C. § 102 as anticipated by Cronin; and

Claims 1–12 and 14–17 under 35 U.S.C. § 103 as obvious over Kurtin '532 and Kurtin '629 in view of Gordon and/or Cronin.

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), *inter partes* review of the '797 patent is hereby instituted commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of trial; and

FURTHER ORDERED that the trial is limited to the grounds identified above and no other ground of unpatentability is authorized.

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PETITIONER:

John A. Bauer
Boris Matvenko
Mintz, Levin, Cohn, Ferris, Glovsky & Popeo, P.C.
jabauer@mintz.com
bmatvenko@mintz.com

PATENT OWNER:

Dion M. Bregman
Jason E. Gettleman
MORGAN, LEWIS & BOCKIUS LLP
dbregman@morganlewis.com
jgettleman@morganlewis.com