

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GARMIN INTERNATIONAL, INC.,
Petitioner,

v.

WISCONSIN ARCHERY PRODUCTS, LLC,
Patent Owner.

Case IPR2018-01137
Patent 8,316,551 B2

Before: BARBARA A. PARVIS, STACEY G. WHITE, and
MONICA S. ULLAGADDI, *Administrative Patent Judges*.

PARVIS, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Garmin International, Inc., (“Petitioner”) filed a Petition pursuant to 35 U.S.C. §§ 311–319 to institute an *inter partes* review of claims 1, 2, 4, 5, 7–9, 12, 13, and 20–26 of U.S. Patent No. 8,316,551 B2 (“the ’551 Patent”). Paper 1 (“Pet.”). Wisconsin Archery Products, LLC (“Patent Owner”) filed a Preliminary Response. Paper 10 (“Prelim. Resp.”). Upon consideration of the parties’ contentions and supporting evidence, we instituted an *inter partes* review pursuant to 35 U.S.C. § 314, as to the challenged claims of the ’551 Patent. Paper 11 (“Inst. Dec.”).

After institution, Patent Owner filed a Patent Owner Response (Paper 21, “PO Resp.”); Petitioner filed a Reply (Paper 24, “Pet. Reply”); and Patent Owner filed a Sur-reply (Paper 25, “PO Sur-reply”). A transcript of the hearing held on September 6, 2019, has been entered into the record as Paper 30 (“Tr.”).

This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Petitioner has demonstrated by a preponderance of evidence that the challenged claims of the ’551 Patent are unpatentable.

II. BACKGROUND

A. *Real Parties-in-Interest*

Petitioner names Garmin International, Inc., Garmin USA, Inc., and Garmin Switzerland GmbH as the real parties-in-interest. Pet. 65. Patent Owner names Wisconsin Archery Products, LLC and Burriss Company, Inc. as the real parties-in-interest. Paper 4, 2.

B. Related Matters

As required by 37 C.F.R. § 42.8(b)(2), each party identifies a judicial matter that would affect, or be affected by, a decision in this proceeding. In particular, the parties inform us that the '551 Patent is asserted in *Burris Co. v. Garmin Int'l, Inc.*, Case No. 6:18-cv-00700 (D. Or.) (“the Related District Court Proceeding”). Pet. 65; Paper 4, 2.

C. The '551 Patent

The '551 Patent is directed to bow sighting devices for establishing aiming positions while using a bow. Ex. 1001, 1:15–17. Figure 1 of the '551 Patent is reproduced below.

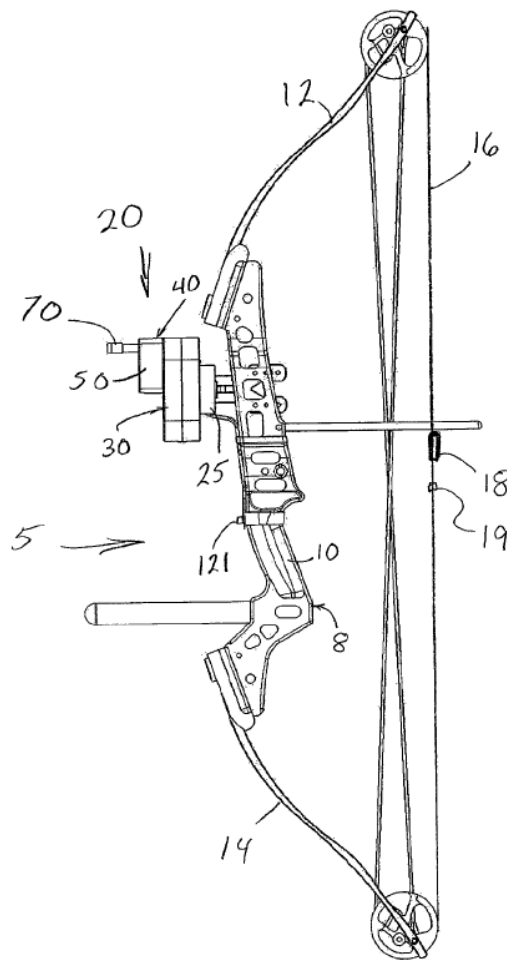


Figure 1 of the '551 Patent, above, illustrates automatically correcting bow sight 20 on bow 5. *Id.* at 6:2–3.

Bow 5 has riser 8 that serves as a main central body portion with integral handle 10 for holding bow 5. *Id.* at 6:13–15. Bow 5 also has upper and lower limbs 12 and 14 extending from upper and lower portions of riser 8, respectively. *Id.* at 6:16–18. Bow sight 20 includes base 25, sight array 30, and sensor system 40. *Id.* at 6:29–36.

Bow sight 20 is illustrated in more detail with respect to Figure 2 of the '551 Patent, reproduced below. *Id.* at 5:25–26.

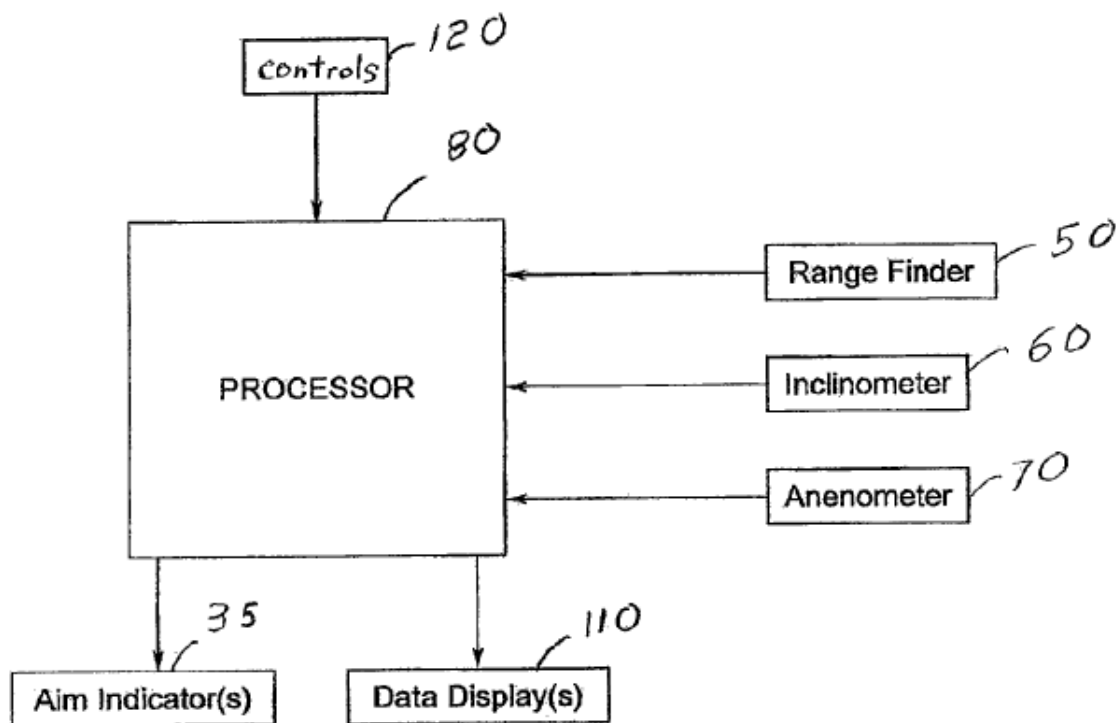


FIG. 1

Id. at Fig. 2. Figure 2 illustrates a schematic of electronic components of bow sight 20 including sensor system 40. *Id.* at 5:25–26, 6:29–30.

Sensor system 40 includes processor 80 connected to each of range finder 50, inclinometer 60, and anemometer 70. *Id.* at 8:66–9:2, Fig. 2. Processor 80 dynamically receives signals transmitted from range finder 50, inclinometer 60, and anemometer 70 and determines whether aim indicator 35 should be corrected. *Id.* at 9:49–51. Display 110 is connected to processor 80 and receives information to display data such as shooting distance, shooting angle, and wind speed and direction. *Id.* at 9:61–10:5, Fig. 2.

D. Illustrative Claim

Petitioner challenges claims 1, 2, 4, 5, 7–9, 12, 13, and 20–26 of the '551 Patent. Pet. 1. Claims 1, 13, and 23 are independent claims. Claims 2, 4, 5, 7–9, 12, 20–22, and 24–26 depend, directly or indirectly, from claim 1, 13, or 23. Independent claim 1, reproduced below, is illustrative of the claimed subject matter:

1. An auto-correcting bow sight, comprising:

- [a]¹ a range finder supported on a bow incorporating the auto-correcting bow sight, the range finder determining a range to a target;
- [b] an inclinometer supported on the bow and determining an angle of inclination of the bow;
- [c] a processor supported on the bow and receiving information from the range finder and the inclinometer relating to the range to target and the angle of inclination of the bow, respectively;

¹ Petitioner refers to the elements recited in claim 1 as “1a” (Pet. 13), “1b” (*id.* at 15), “1c” (*id.* at 17), “1d” (*id.* at 18, 21), and “1e” (*id.* at 23, 28). We use Petitioner’s designations to reference those elements herein.

- [d] multiple aim indicators being operably connected to the processor, wherein the processor controls which of the multiple aim indicators is displayed at a given time based on at least one of (i) the range to target, and (ii) the angle of inclination of the bow, information; and
- [e] a manually actuated input device that is operably connected to the processor and that can be actuated for beginning an evaluation by the processor that determines which of the multiple aim indicators to display based on the at least one of the range to target and the angle of inclination of the bow, and wherein the manually actuated input device is arranged upon the bow to allow actuation of the input device by an archer when the bow is in a fully drawn position.

Ex. 1001, 15:53–16:9.

E. Evidence Relied Upon

Petitioner relies on the following references:

U.S. Patent No. 5,914,775, filed May 23, 1997, issued June 22, 1999 (Ex. 1004, “Hargrove”);

U.S. Patent No. 6,079,111, filed November 19, 1996, issued June 27, 2000 (Ex. 1005, “Williams”); and

U.S. Patent No. 5,634,278, filed September 20, 1995, issued June 3, 1997 (Ex. 1006, “London”).

Additionally, Petitioner relies on the Declaration of John William Cross, Ph.D. (Ex. 1003) and the Supplemental Declaration of Dr. Cross (Ex. 1013). Patent Owner relies on the Declaration of James M. Zavislan, Ph.D. (Ex. 2002) and the Supplemental Declaration of Dr. Zavislan (Ex. 2009). Patent Owner further submits a Declaration of Dr. Zavislan filed in the Related District Court Proceeding in support of its contentions relating to secondary considerations. PO Resp. 55 (citing Ex. 2004 ¶¶ 65–87).

F. Grounds Asserted

Petitioner asserts the following grounds of unpatentability² (Pet. 6):

Claims Challenged	35 U.S.C.	References/Basis
1, 2, 7, 8, 12, 13, 20, 23–26	§ 103	Hargrove, Williams
4, 5, 9, 21, 22	§ 103	Hargrove, Williams, London

III. DISCUSSION

A. Principles of Law Relating to Obviousness

The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103. Because the ’551 Patent was filed before the effective date of the relevant amendment, the pre-AIA version of § 103 applies.

B. Level of Ordinary Skill

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). Petitioner relies on the testimony of Dr. Cross and contends that a person having ordinary skill in the art would have had an undergraduate degree or equivalent in physics, electrical engineering, computer engineering/science, or similar science or engineering degree and at least two years of industry experience (or, with a graduate degree, at least one year of experience) in optics technologies and projectile weapon sighting, including archery. Pet. 6–7 (citing Ex. 1003 ¶¶ 23–25). Petitioner further contends additional industry experience or technical training may offset less formal education, while advanced degrees or additional formal education may offset lesser levels of industry experience. *Id.*

Dr. Zavislan testifies that a person having ordinary skill in the art would have had “at least an undergraduate degree in optics or electrical engineering and at least two years of practical experience in the design of electro-optical systems and experience with archery.” Ex. 2002 ¶ 29. Patent Owner, however, does not provide meaningful contentions regarding level of skill in the Patent Owner Response. *See generally* PO Resp. For instance, Patent Owner does not explain how any differences in Dr. Zavislan’s level of the skilled artisan as compared to Dr. Cross’s level of the skilled artisan impact our determinations herein including, for example, that it would have been obvious to modify Hargrove to position its switch to allow an archer to

actuate at full draw. *Id.* Indeed, the levels of skill overlap in that both include a person having an undergraduate degree electrical engineering and at least two years of industry experience involving optics systems and, importantly, both skill levels include experience in archery. Ex. 1003 ¶¶ 23–25; Ex. 2002 ¶ 29.

On the record before us, we are persuaded to adopt Dr. Cross’s assessment of a person with ordinary skill in the art because it is consistent with the problems and solutions in the prior art of record. We further find that the prior art of record in the instant proceeding reflects the appropriate level of ordinary skill in the art. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art itself can reflect the appropriate level of skill in the art).³

C. Claim Construction

In this *inter partes* review, we construe claim terms according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b) (2017).⁴ Petitioner does not propose an express construction for any claim term in the Petition. Pet. 7. In the Decision to Institute, we discussed the term “incorporating” recited in the following limitation in claim 1 “a range finder supported on a bow

³ Our conclusions, however, do not turn on which definition is selected.

⁴ The claim construction standard to be employed in an *inter partes* review changed. See Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018). At the time of the filing of the Petition in this proceeding, however, the applicable claim construction standard was set forth in 37 C.F.R. § 42.100(b) (2017).

incorporating the auto-correcting bow sight.” Ex. 1001, 15:54–55 (emphasis added). We applied the ordinary and customary meaning, namely that the range finder is supported on the bow. No party challenges that determination in the Decision to Institute and, based on the full record, we discern no reason to modify it.

In the Patent Owner Response, Patent Owner contends two claim limitations require construction, i.e., “arranged upon the bow” and “targeting sight.” PO Resp. 19. Petitioner provides responsive contentions in its Reply. Pet. Reply 11–18. We discuss the parties’ contentions below.

1. “*arranged upon the bow*”—*Claim 1*

Patent Owner proposes that “arranged upon the bow” means “an input device that is mounted on the bow separately and independently from the remainder of the bow sight.” PO Resp. 19. Patent Owner asserts that its proposed construction is consistent with Figures 1 and 7 in the ’551 Patent Specification illustrating trigger button 121. *Id.* at 22–23 (citing Ex. 1001, Figs. 1, 7). Petitioner relies on the plain and ordinary meaning of the claim language. *See, e.g.*, Pet. Reply 13; Tr. 9:1–7.

“Arrange” means “to put in a defined order.” *See, e.g.*, THE NEW INTERNATIONAL WEBSTER’S STANDARD DICTIONARY 24 (Trident Reference Publishing 2006) (Ex. 3002). Looking to the claim language, claim 1 recites the arrangement or the defined order, i.e., “wherein the manually actuated input device is arranged upon the bow *to allow actuation of the input device by an archer when the bow is in a fully drawn position.*” Ex. 1001, 16:7–9 (emphasis added).

During the hearing, Patent Owner argued that “arranged upon” suggests “customized ability” and differs from “supported on.” Tr. 32:13–23. However, Patent Owner asserts that although claim 26 “uses different terminology, claim 26 claims a configuration similar [to] the configuration of the input device of claim 1.” PO Resp. 35. Claim 26 recites “wherein the input device comprises a triggering button that is *supported* by the bow . . . so as to allow actuation . . . when the bow is in a fully drawn position.” Ex. 1001, 18:43–48 (emphasis added). Claim 1 recites “a processor *supported* on the bow” (*id.* at 15:59–62 (emphasis added)) and processor (element 80 in Figure 3 of the ’551 Patent) is not mounted separately and independently from the remainder of the bow sight. *Id.* at 8:66–9:2, Fig. 3. Also, Patent Owner acknowledges that the same claim terms should have the same meaning. Tr. 31:14–17.

In applying a broadest reasonable construction, claim terms generally are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Additionally, we must be careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993). Claim 1 recites expressly the manually actuated input device is arranged upon the bow. We are not persuaded to limit claim 1 to the preferred embodiment illustrated in Figures 1 and 7 of the ’551 Patent based on the description in the ’551 Patent Specification.

Patent Owner also asserts that “[b]ased on the prosecution history of claim 1, the limitation requiring an input device ‘arranged upon the bow’

cannot be construed to include configurations such as Roberts or Perkins, which discloses an input device incorporated into a rangefinder (or other device) that is then mounted to the bow.” PO Resp. 24 (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005)). Patent Owner, however, acknowledges that “[a]s originally filed” claim 1 also did not include “the functional component (‘to allow actuation of the input device by an archer when the bow is in a fully drawn position’).” *Id.* at 20; Tr. 34:1–35:8 (acknowledging that claims not reciting “arranged upon the bow” were allowed over the same prior art). Also, consistent with Petitioner’s contention (Pet. Reply 12), Perkins describes a range finder that is “off-bow” or not mounted to a bow. Ex. 1002, 43; Tr. 29:8–30:9.

Accordingly, we are not persuaded to limit “arranged upon the bow” recited in claim 1 (Ex. 1001, 16:7) to a preferred embodiment as Patent Owner proposes. Instead, we apply the ordinary and customary meaning, namely that “wherein the manually actuated input device is *arranged upon the bow* to allow actuation of the input device by an archer when the bow is in a fully drawn position” (Ex. 1001, 16:6–9 (emphasis added)) means “wherein the manually actuated input device is mounted on the bow so as to allow actuation of the input device by an archer when the bow is in a fully drawn position.”

2. “targeting sight”—*Claims 5 and 21*

Patent Owner proposes that “targeting sight” means “a discrete mark or indicator that allows an archer to aim the laser of a range finder at an intended target.” PO Resp. 19. Patent Owner states “[t]he most typical targeting site is the center of a set of cross-hairs.” *Id.* at 25. Patent Owner

asserts its proposed construction is supported by the '551 Patent Specification. *Id.* at 24–27 (citing Ex. 1001, 7:9–13, 10:50–11:29, Figs. 9, 10).

Petitioner asserts a targeting sight is an alignment and aiming tool. Pet. Reply 17; Tr. 25:22–23:4. Petitioner, more specifically, takes the position that “[t]he targeting sight is not *just the cross-hairs*” (Tr. 26:10–11 (emphasis added)) and “[t]he ‘targeting sight’ described in the '551 Patent encompasses, at the least, the crown 32 *and* the fixed cross hairs, both of which are provided on the sight array 30 included in the bow sight 20.” Pet. Reply 14–16 (citing, *e.g.*, Ex. 1001, 6:29–31, 7:4–19, 11:7–14, 12:48–53).

The portions of the '551 Patent Specification relied upon by Patent Owner support Petitioner’s position. For instance, Patent Owner relies on the following portion of the '551 Patent Specification: “[t]argeting sight 31 preferably has a cross-hair type configuration *and further includes a crown 32 that extends in an arc across the top of the targeting sight 31.*” Ex. 1001, 7:10–13 (emphasis added) (cited at PO Resp. 27). Regarding that description in the '551 Patent Specification, during oral argument, Patent Owner argued as follows:

JUDGE PARVIS: For example, the top of column 7 of the patent says targeting sight 31 preferably has a cross-hair configuration and further includes a crown 32. So is the crown 32, is that part of the targeting sight 31 or is it separate?

MR. GRIGGS: I believe it’s -- I'm getting to that language here, it would be separate and that could just be some inartful wording. I think what we're looking at is every embodiment disclosed in the 551 patent has a cross-hair or a targeting sight. You know, the crown can be a supplemental aspect of that but our proposed construction of targeting sight, I know there’s an argument that it’s excluding preferred embodiments. First of all,

the claims don't have to cover every preferred embodiment, but our construction is completely consistent with all of the different embodiments, and that they all have a discreet marker indicator, in this instance a cross-hair, that represents the default sighted in position at which the laser is trained.

Tr. 51:15–52:6.

The aforementioned portion of the '551 Patent Specification relied upon by Patent Owner clearly states that “[t]argeting sight 31 . . . *includes a crown 32.*” Ex. 1001, 7:10–13 (emphasis added) (cited at PO Resp. 27). That portion supports Petitioner's position, not Patent Owner's proposed construction.

The remaining portion relied upon by Patent Owner similarly refers to the targeting sight 31 as having crosshairs, but not being limited to just those crosshairs. Ex. 1001, 11:9 (describing “targeting sight 31 (or its crosshairs)”), 11:27–28 (describing “the crosshairs of the targeting sight 31”). Patent Owner does not point to description in the '551 Patent Specification of a targeting sight limited to only fixed crosshairs. *See generally* PO Resp.

Another portion of the '551 Patent Specification further supports Petitioner's position. In particular, the '551 Patent Specification describes “the archer aligns *the crown 32 of the targeting sight 31* with the top edge of the peep sight opening [and] centers the crosshairs of the targeting sight 31 within the peep sight 18.” Ex. 1001, 12:48–53 (emphasis added). We agree with Petitioner that in light of the '551 Patent Specification “targeting sight” is not *just the crosshairs*.

Patent Owner asserts Dr. Cross, Petitioner's Declarant, agrees with Patent Owner's proposed construction. PO Resp. 24–27 (citing Ex. 2007, 54:4–11). Based on the complete record before us, we are not persuaded that Dr. Cross's deposition testimony that the targeting sight is the crosshairs

(Ex. 2007, 54:4–55:18) contradicts his declaration testimony. Dr. Cross testifies that he disagrees with Patent Owner that the targeting sight is only the crosshairs. Ex. 1013 ¶¶ 25–26; *see also* Ex. 1003 ¶ 93 (testifying that “the ’551 Patent describes the targeting sight as essentially the whole of the viewable sight seen by the archer”).

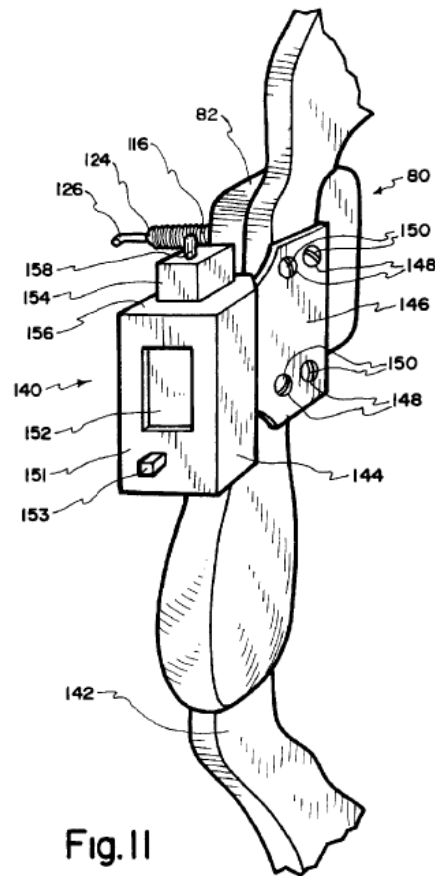
In light of the ’551 Patent Specification, we agree with Petitioner regarding the construction of “targeting sight” and determine that “targeting sight” means “an alignment and aiming tool.”

D. Obviousness over Hargrove and Williams

Petitioner contends each of claims 1, 2, 7, 8, 12, 13, 20, and 23–26 of the ’551 Patent are unpatentable, under 35 U.S.C. § 103, as obvious over Hargrove and Williams. Pet. 6, 12–53. Patent Owner opposes. *See generally* PO Resp. In our discussion below, we first provide a brief overview of the prior art, and then we address the parties’ contentions in turn.

3. Hargrove

Hargrove is directed to archery and properly positioning a sighting device. Ex. 1004, 1:5–9. Figure 11 of Hargrove is reproduced below.



Id. at Fig. 11. Figure 11 illustrates range finder 140 mounted to archery bow 142. *Id.* at 13:9–10. Range finder 140 includes housing 144 rigidly connected with mounting plate 146. *Id.* at 13:14–16. Range finder 140 also includes display 152 comprising a conventional liquid crystal display (LCD). *Id.* at 13:25–26. Range finder 140 employs point-to-point measuring device 154 affixed to housing top surface 156. *Id.* at 13:8–9, 29–31.

Range finder 140 includes internal circuitry and components, which are shown in more detail in Figure 12 reproduced below. *Id.* at 4:53–55.

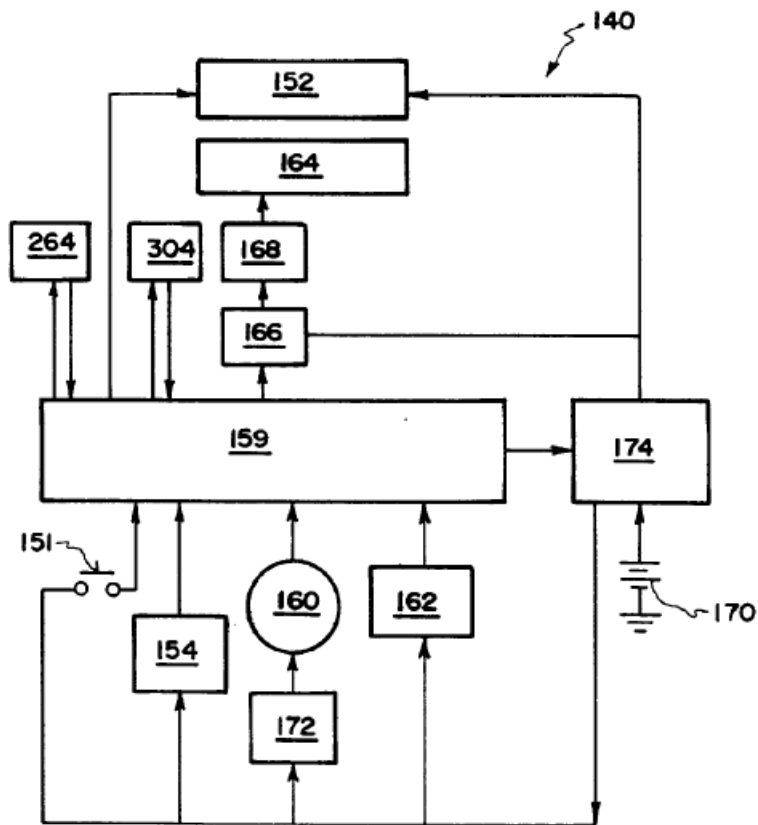
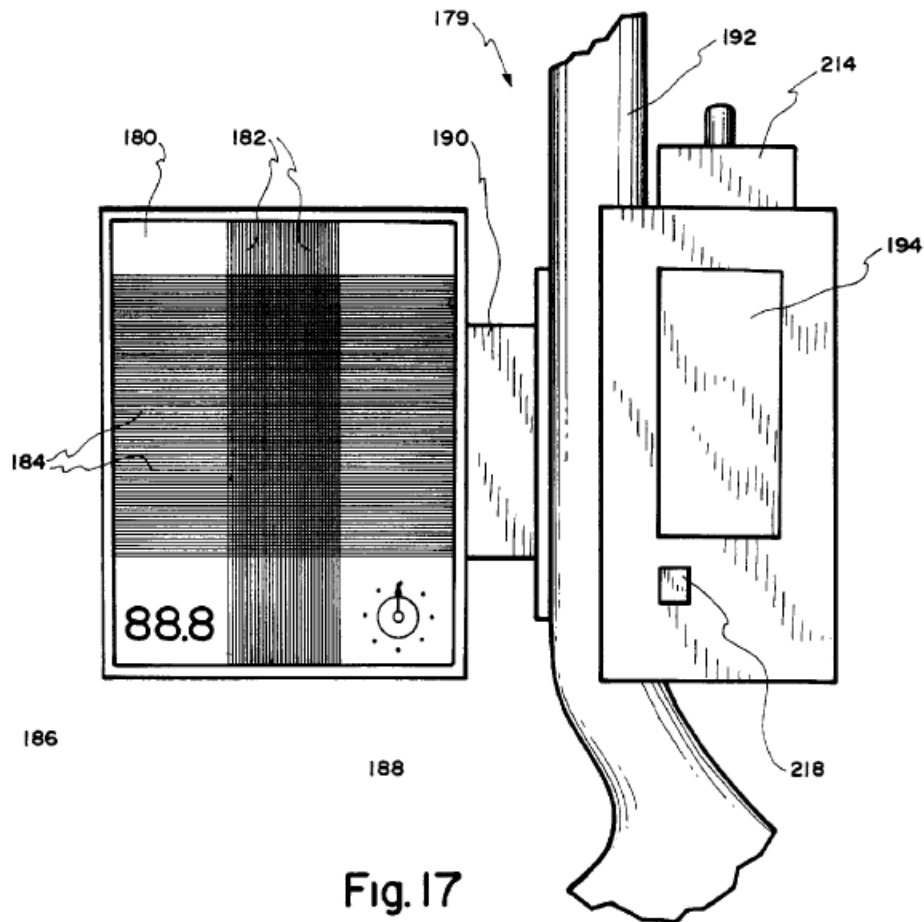


Fig. 12

Id. at Fig. 12. Figure 12 of Hargrove, above, illustrates internal circuitry and components of range finder 140 including programmed data processor 159.

Id. at 4:53–55, 13:39–41. Programmed data processor 159 is coupled to and receives signals from angle sensitive transducer 160 and point-to-point measuring device 154 and performs calculations based on the received signals. *Id.* at 13:39–48.

An additional embodiment similar to the previously described embodiment is described with respect to Figure 17 of Hargrove, reproduced below. *Id.* at 15:24–27.⁵



Id. at Fig. 17. Figure 17 of Hargrove, above, illustrates range finder 179 using LCD display 180. *Id.* at 15:24–29. Display 180 makes visible one of a plurality of vertical lines 182 and one of a plurality of horizontal lines 184 to produce a movable cross hair sight. *Id.* at 15:29–32.

⁵ Herein, we refer to these two embodiments with respect to the Figure numbers, *e.g.*, the embodiment shown in Figures 11 through 13 and the embodiment shown in Figures 17 and 18, respectively.

4. *Williams*

Williams is directed to sighting devices for use with an archery bow. Ex. 1005, 1:17–18. Williams describes sight apparatus 10*a* attached to archery bow 11. *Id.* at 7:12–14. Sight apparatus 10*a* comprises housing 92, bracket pins 94, pendulum arm 95 supporting pendulous sight 16*a*, and trigger plate 96. *Id.* at 7:14–17. Trigger plate 96 has upper end 144, lower end 146, trigger handle 148, pin slot 150 and elevator disc opening 152. *Id.* at 8:22–24. Trigger plate 96 can be moved by applying a force to the trigger handle 148. *Id.* at 8:32–36. An archer is able to move the trigger handle 148 without removing the bow-gripping hand from the bow 11 to adjust the position of the trigger plate 96 while maintaining the bow 11 at full draw. *Id.* at 8:36–44.

5. *Claim 1*

We begin our analysis with independent claim 1. Petitioner asserts that claim 1 is obvious over Hargrove and Williams. Pet. 6, 12–35. Patent Owner counters (PO Resp. 29–33, 34–35, 37–48) that the asserted prior art combination does not teach “wherein the manually actuated input device is arranged upon the bow to allow actuation of the input device by an archer when the bow is in a fully drawn position.” Ex. 1001, 16:6–9. Patent Owner also challenges Petitioner’s reasoning to combine. PO Resp. 30–33, 48–50, 55–56.

Upon review of the evidence in the entire record now before us, we find that Petitioner has shown how the combination of Hargrove and Williams teach each limitation of claim 1, and we determine that Patent Owner’s arguments do not undermine Petitioner’s showing.

a. Preamble

We start with the preamble of claim 1, which recites “[a]n auto-correcting bow sight.” Ex. 1001, 15:53. Petitioner contends although Hargrove “does not use the term ‘bow sight’ to identify its device, instead using the terms ‘rangefinder’ or ‘rangefinding device’ or ‘rangefinding apparatus,’” Hargrove “describe[s] an auto correcting bow sight.” Pet. 12–13 (citing, *e.g.*, Ex. 1004, 4:22–25, 5:13–15, 6:23–29, 6:65–7:2, 10:13–21, 15:24–35, 15:65–16:3, 16:13–17, Figs. 11, 17). Petitioner also cites Dr. Cross’s Declaration as support. *Id.* (citing, *e.g.*, Ex. 1003 ¶¶ 50, 54). Dr. Cross testifies “it is common in the industry that the entire apparatus, such as the range finder 179 shown in Fig. 17 of Hargrove, is referred to as a ‘bow sight.’” Ex. 1003 ¶ 50. Dr. Cross further testifies “Hargrove’s rangefinder 179 includes electronic components conventional to a bow sight.” *Id.*

Hargrove describes range finding device 20 (Ex. 1004, 5:13–15) that displays the distance and includes programmed data processor 34 (*id.* at 6:65–7:2), as well as range finder 140 comprising display 152 and programmed data processor 159 (*id.* at 13:23–43) and range finder 179 comprising display 180 and programmed data processor 202 (*id.* at 15:24–45).⁶ Petitioner makes the requisite showing that Hargrove teaches the subject matter recited in the preamble and Patent Owner does not dispute Petitioner’s showing.

⁶ Range finder 140 comprising display 152 and programmed data processor 159 is described in the embodiment shown in Figures 11 through 13 (*id.* at 13:7–9, 13:23–43) and range finder 179 comprising display 180 and programmed data processor 202 is described in the embodiment shown in Figures 17 and 18 (*id.* at 15:24–45).

b. Element 1(a)

Element 1(a) is “a range finder supported on a bow incorporating the auto-correcting bow sight, the range finder determining a range to a target.”

Ex. 1001, 15:54–56. Petitioner contends as follows:

The rangefinder 179 of Figs. 17–18 further includes a “point-to-point measuring device 214, which may comprise a laser point-to-point measuring device” that is “operatively coupled with the programmed data processor 202 to provide point-to-point distance information. . . .” (Ex. 1004, 15:55–60, Fig. 18, Claim 17). Dr. Cross opines that a POSITA would understand the laser point-to-point measuring device 214 as being the claimed range finder. (Ex. 1003, ¶¶ 58–59). Hargrove therefore teaches the claimed “range finder determining a range to a target.”

Hargrove’s rangefinder 179 (i.e., the bow sight) includes the disclosed point-to-point measuring device 214 and processor 202 (*see* Ex. 1004, Fig. 18, 15:42–45, 55–60), and as discussed above, Hargrove’s rangefinder 179 with included measuring device 214 and processor 202 are mounted to the bow. (Ex. 1003, ¶¶ 55–56). Hargrove also teaches that the point-to-point measuring device 154 of the Fig. 11 embodiment is mounted to a housing top surface 156. *Id.* at 13:29–35. Similarly, Hargrove illustrates the point-to-point measuring device 214 of the Fig. 17 embodiment mounted to the top of the housing of the display 194. *See id.* at Fig. 17, RN 214; Ex. 1003, ¶ 62. Therefore, Hargrove teaches that the claimed “rangefinder” is supported on a bow.

Pet. 14.

We agree with Petitioner’s contentions, and we credit and give significant weight to the testimony of Dr. Cross as Dr. Cross’s testimony and Petitioner’s contentions are consistent with the evidence cited therein. For example, Hargrove’s range finder 140 includes programmed data processor 159 comprising a microprocessor coupled with point-to-point measuring

device 154. Ex. 1004, 13:39–43. Programmed data processor 159 is programmed to perform calculations based on angle dependent signals from angle sensitive transducer 160 and distance dependent signals from point-to-point measuring device 154. *Id.* at 13:43–48, 14:10–29.

Dr. Cross’s testimony and Petitioner’s contentions regarding Hargrove’s range finder 179 also are consistent with the evidence cited therein. For instance, Hargrove describes “[i]n operation, in a manner identical to the manner of operation of the range finder 140 discussed above, the programmed data processor 202 calculates the horizontal distance to the target based upon a point-to-point distance measurement and the angle detected by the angle sensitive transducer 210.” *Id.* at 15:65–16:3. Range finder 179’s programmed data processor 202 is coupled to point-to-point measuring device 214 to receive distance information. *Id.* at 15:55–60. Hargrove describes that point-to-point measuring device 214 “may comprise a laser point-to-point measuring device.” *Id.* at 15:55–57.⁷

Patent Owner does not dispute Petitioner’s showing. *See generally* PO Resp. For the reasons given, we determine that Petitioner’s arguments and evidence support a finding that Hargrove teaches claim element 1(a), i.e., “a range finder supported on a bow incorporating the auto-correcting

⁷ Patent Owner’s dispute regarding element 1(a) in the Preliminary Response was premised on its implicit construction for “a range finder supported on a bow incorporating the auto-correcting bow sight,” which we did not adopt. Inst. Dec. 8–11. As we discussed above with respect to claim construction, we maintain our claim construction determination in the Decision to Institute. *See supra* § III.C. After consideration of the complete record before us, we are persuaded by Petitioner’s contentions and evidence for the reasons given in this Decision, as well as the reasons given in our Decision to Institute (*see* Inst. Dec. 17–19).

bow sight, the range finder determining a range to a target.” Ex. 1001, 15:54–56.

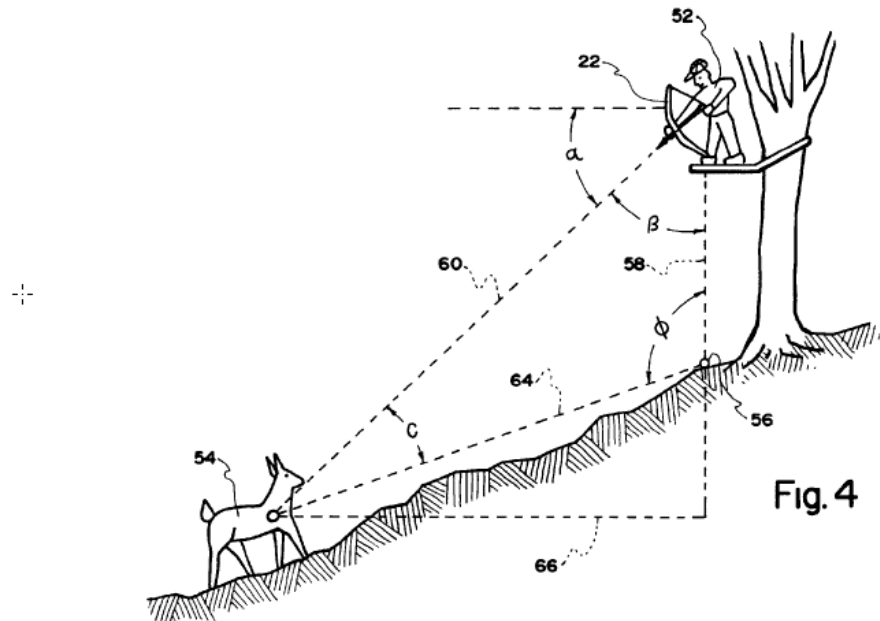
c. Element 1(b)

Claim element 1(b) is “an inclinometer supported on the bow and determining an angle of inclination of the bow.” Ex. 1001, 15:57–58. Relying on the testimony of Dr. Cross, Petitioner asserts that “a POSITA would understand the inclination angle measured by the inclinometer as the angle of the bow from horizontal.” Pet. 15 (citing Ex. 1001, 9:20–27; Ex. 1003 ¶ 63). Petitioner points to Hargrove’s transducer 36 shown in Figure 2, transducer 160 shown in Figure 12,⁸ and angle sensitive transducer 210, shown in Figure 18. *Id.* (citing, *e.g.*, Ex. 1004, 6:29–32, 7:23–28, 13:61–66, 14:24–29, 15:49–55, Figs. 2–4, 11, 18). Dr. Cross testifies that Hargrove discloses the processor performing trigonometric functions to determine the angle measurement needed. Ex. 1003 ¶ 65 (citing, *e.g.*, Ex. 1004, 6:29–32, 6:39–42, 9:14–25, 10:16–21, 13:43–48, 14:24–29, 15:65–67, Figs. 3, 11, 17).

We agree with Petitioner’s contentions, and we credit and give significant weight to the testimony of Dr. Cross, as Dr. Cross’s testimony and Petitioner’s contentions are consistent with the evidence cited therein. For example, Hargrove describes that transducer 36 measures angle β (Ex. 1004, 7:23–28), which is the complement to inclination angle α (*id.* at 6:29–

⁸ Petitioner points to Figure 11, but range finder 140 is described in the embodiment shown in both Figures 11 and 12 and transducer 160 is shown in Figure 12. *Id.* at 13:7–9, Fig. 12.

32). Both angle β and inclination angle α are shown in Figure 4 of Hargrove, reproduced below.



Id. at Fig. 4. Figure 4 illustrates archer 52 shooting at target 54 from an elevated position above sloped ground (*id.* at 4:31–32) and a triangle formed between archer 52, target 54, and base point 56 (*id.* at 7:6–7).

Hargrove describes:

As the archer 52 aims the bow 22 at the target 54, an angle β is formed between the vertical line 58 which extends from the archer 52 to base point 56 and a line of sight 60 which extends from the archer 52 to the target 54. The complement angle to the angle β which is designated in FIG. 3 as inclination angle α is formed between the line of sight 60 and horizontal line 61 intersecting line 60 at the archer 52.

Id. at 6:25–33.

Similarly, Dr. Cross’s testimony and Petitioner’s contentions regarding Figure 11 (range finder 140) (*id.* at 13:7–8) and Figure 17 (range finder 179) (*id.* at 15:24–25) are consistent with the evidence cited therein. For instance, Hargrove describes transducer 160 in range finder 140 shown

in Figure 11 as “identical” to transducer 36 shown in Figure 2. *Id.* at 13:61–66. Angle sensitive transducer 160 is coupled with programmed data processor 159, which is programmed to perform calculations based on angle dependent signals from angle sensitive transducer 160, as well as distance dependent signals from point-to-point measuring device 154. *Id.* at 13:39–48. Regarding Hargrove’s range finder 179, Hargrove describes “[i]n operation, in a manner identical to the manner of operation of the range finder 140 discussed above, the programmed data processor 202 calculates the horizontal distance to the target based upon a point-to-point distance measurement and the angle detected by the angle sensitive transducer 210.” *Id.* at 15:65–16:3.

Patent Owner does not dispute Petitioner’s showing. *See generally* PO Resp. For the reasons given, we determine that Petitioner’s arguments and evidence support a finding that Hargrove teaches claim element 1(b), i.e., “an inclinometer supported on the bow and determining an angle of inclination of the bow.” Ex. 1001, 15:57–58.

d. Element 1(c)

Element 1(c) is “a processor supported on the bow and receiving information from the range finder and the inclinometer relating to the range to target and the angle of inclination of the bow, respectively.” Ex. 1001, 15:59–62. Petitioner points to processor 159 shown in Figure 11 and processor 202 shown in Figure 17. Pet. 17–18 (citing Ex. 1004, 13:39–52, 15:39–45, 15:49–60, 15:66–16:3, Figs. 11, 17, 18; Ex. 1003 ¶¶ 52, 67–70).

We agree with Petitioner’s contentions, and we credit and give significant weight to the testimony of Dr. Cross, as Dr. Cross’s testimony

and Petitioner’s contentions are consistent with the evidence cited therein. For example, with respect to the embodiment shown in Figures 11 through 13 (range finder 140), Hargrove describes that point-to-point measuring device 154 returns the horizontal distance to programmed data processor 159 and programmed data processor 159 “acquires elevation angle information from the angle sensor 160.” Ex. 1004, 14:19–26. Then, “[w]ith the point-to-point distance and the elevation angle information,” the programmed data processor “computes the horizontal distance to the target using trigonometric relationships.” *Id.* at 14:26–29. With respect to the embodiment shown in Figures 17 and 18 (range finder 179), Hargrove describes “[i]n operation, in a manner identical to the manner of operation of the rangefinder 140 discussed above, the programmed data processor 202 calculates the horizontal distance to the target based upon a point-to-point distance measurement and the angle detected by the angle sensitive transducer.” *Id.* at 15:66–16:3.

Patent Owner does not dispute Petitioner’s showing. *See generally* PO Resp. For the reasons given, we determine that Petitioner’s arguments and evidence support a finding that Hargrove teaches claim element 1(c), i.e., “a processor supported on the bow and receiving information from the range finder and the inclinometer relating to the range to target and the angle of inclination of the bow, respectively.” Ex. 1001, 15:59–62.

e. Element 1(d)

Element 1(d) is “multiple aim indicators being operably connected to the processor, wherein the processor controls which of the multiple aim indicators is displayed at a given time based on at least one of (i) the range

to target, and (ii) the angle of inclination of the bow, information.”

Ex. 1001, 15:63–67. Petitioner, for example, points to Hargrove’s movable cross hair sight produced by making visible one of the vertical lines and one of the horizontal lines illustrated in Figure 17. Pet. 18–23 (citing, *e.g.*, Ex. 1004, 15:24–32, Figs. 17, 18; Ex. 1003 ¶¶ 71–73). Petitioner also points to Hargrove’s description of determining which of the horizontal and vertical lines to make visible based on information received or determined by that processor relating to the discussion above regarding element 1(c). *Id.* (citing, *e.g.*, Ex. 1004, 1:60–2:2, 3:25–28, 15:25–32, 15:61–16:23; Ex. 1003 ¶¶ 60–61, 72–75).

We agree with Petitioner’s contentions, and we credit and give significant weight to the testimony of Dr. Cross as Dr. Cross’s testimony and Petitioner’s contentions are consistent with the evidence cited therein. For example, Hargrove describes “a rangefinder which determines the horizontal distance to a target based on inputs from a point-to-point measuring device and an angle sensitive transducer.” Ex. 1004, 3:25–28. Hargrove further describes:

While the display 180 is illustrated as having a number of horizontal and vertical lines visible, this is for illustrative purposes only. At any given time, only one set of horizontal 184 and vertical 182 lines are visible. Specifically, the horizontal line visible would be determined by the programmed data processor 202 according to the horizontal distance to the target calculated by the programmed data processor 202. The vertical line visible would be determined by the programmed data processor based on the readings of the windage sensor 216 which are received by the programmed data processor 202. By selectively making visible a set of horizontal and vertical lines on the display 180, a movable set of cross hairs is provided which move according to

the horizontal distance to the target, current wind conditions or both.

Ex. 1004, 16:3–16:17.

Patent Owner does not dispute Petitioner’s showing. *See generally* PO Resp. For the reasons given, we determine that Petitioner’s arguments and evidence support a finding that Hargrove teaches claim element 1(d), i.e., “multiple aim indicators being operably connected to the processor, wherein the processor controls which of the multiple aim indicators is displayed at a given time based on at least one of (i) the range to target, and (ii) the angle of inclination of the bow, information.” Ex. 1001, 15:63–67.

f. Element 1(e)

Element 1(e) is set forth below with Petitioner’s further sub-reference numerals (Pet. 23, 28):

- (i) a manually actuated input device that is operably connected to the processor and that can be actuated for beginning an evaluation by the processor that determines which of the multiple aim indicators to display based on the at least one of the range to target and the angle of inclination of the bow, and (ii) wherein the manually actuated input device is arranged upon the bow to allow actuation of the input device by an archer when the bow is in a fully drawn position.

Ex. 1001, 16:1–9.

For element 1(e)(i), Petitioner points to Hargrove’s switch 153 shown in Figure 11 and switch 218 shown in Figure 17. *See, e.g.*, Pet. 23. Petitioner also points to Figure 13 of Hargrove and related discussion for showing that actuating switch 153 “commences a rangefinding operation,” as well as Hargrove’s description that switch 218 “operates identically to switch 153.” *Id.* at 23–25 (citing, *e.g.*, Ex. 1004, 13:23–29, 14:10–29,

14:48–56, 15:25–27, 15:46–47, 15:51–52, 15:61, 15:65–67, 16:3–10, Figs. 11–13, 17; Ex. 1003 ¶¶ 61, 76–82).

Regarding element 1(e)(i), we agree with Petitioner’s contentions, and we credit and give significant weight to the testimony of Dr. Cross, as Dr. Cross’s testimony and Petitioner’s contentions are consistent with the evidence cited therein. For example, Hargrove describes “switch 153 is shown as protruding from the front surface 151” and switch 153 is illustrated in Figure 11 as protruding from front surface 151 of range finder 140. Ex. 1004, 13:27–28, Fig. 11. Hargrove further describes “to commence the rangefinding operation, switch [153] is actuated by the user, which actuation is received by the programmed data processor 159.” *Id.* at 14:12–14; *see also id.* at Fig. 13 (describing the first step as “Receive Initiation Actuation Signal”). Regarding Hargrove’s range finder 179, Hargrove describes that switching circuit 200 is identical to and configured identically, as switching circuit 166 and switching circuit 204 is identical to and configured identically as switching circuit 174. *Id.* at 15:46–47, 15:51–52. Additionally, switch 218 is shown in Figure 17 as protruding from the front surface of range finder 179. *Id.* at Fig. 17.

For element 1(e)(ii), Petitioner points to description in Hargrove relating to the act of shooting. Pet. 28–29 (citing, *e.g.*, Ex. 1004, 1:5–34, 2:37–40, 2:64–67, 6:18–22, Figs. 1, 4, 5, 14–17; Ex. 1003 ¶¶ 83–87). Petitioner also points to Williams’s sight apparatus 10a including trigger plate 96 and trigger handle 148. *Id.* at 29–31 (citing, *e.g.*, Ex. 1005, at code (57), 8:22–45, 15:23–26, 16:39–42, Figs. 5, 6; Ex. 1003 ¶¶ 95, 98–110). Relying on the testimony of Dr. Cross, Petitioner contends a person having ordinary skill in the art would have understood that the sighting device of

Hargrove “would be advantageously used when in the fully drawn position.” *Id.* at 32–33 (citing, *e.g.*, Ex. 1003 ¶¶ 102–104). Petitioner characterizes the modification as the use of a known technique to improve a similar device in the same way and “simple and not overly burdensome.” *Id.* at 32–34 (citing, *e.g.*, Ex. 1003 ¶¶ 84, 100, 102–106).

Patent Owner asserts (1) the combination of Hargrove and Williams does not teach “arranged upon the bow” (PO Resp. 34–35); (2) the combination of Hargrove and Williams does not teach “actuation of the input device by an archer when the bow is in a fully drawn position” (*id.* at 29–30, 37–48); and (3) “even assuming *arguendo* that Williams is interpreted as disclosing initiating an evaluation process at full draw . . . there is no basis or motivation to operate Hargrove in this manner” (*id.* at 30–33).

Regarding element 1(e)(ii), we agree with Petitioner’s contentions, and we credit and give significant weight to the testimony of Dr. Cross as Dr. Cross’s testimony and Petitioner’s contentions are consistent with the evidence cited therein. We further determine that Patent Owner’s contentions and evidence do not undermine Petitioner’s showing. We discuss in more detail the parties’ contentions regarding each of Patent Owner’s disputes below.

i. “arranged upon the bow”

Patent Owner contentions are premised on its construction for “arranged upon the bow.” PO Resp. 34–35. For the reasons given with respect to claim construction, we declined to adopt Patent Owner’s

construction. *See supra* § III.C.1. We, therefore, determine that Patent Owner’s contentions do not undermine Petitioner’s showing.

ii. “*wherein the manually actuated input device is arranged . . . to allow actuation of the input device by an archer when the bow is in a fully drawn position*”

As explained above (*see supra* III.D.3.f), Patent Owner does not dispute that in Hargrove, switch 153 is shown as protruding from front surface 151 of range finder 140 and switch 218 is shown as protruding from front surface of range finder 179. Ex. 1004, 13:27–28, Fig. 11, Fig. 17. Also, Patent Owner does not dispute that Hargrove describes commencing a range finding operation by actuating switch 153 or switch 218. *Id.* at 14:12–14; 15:46–47, 15:51–52; Fig. 13. The dispute between the parties is only whether the asserted prior art teaches the position of the manually actuated input device.

Patent Owner’s dispute centers on asserted deficiencies of Hargrove. PO Resp. 29, 37–48. For instance, Patent Owner asserts that “Hargrove discloses a dynamic evaluation process” (*id.* at 29) that “need not be actuated at full draw to operate in the disclosed manner” (*id.* at 39). Patent Owner asserts, therefore, “[t]he mere fact that the figures show the bow at full draw does not result in an express or implicit disclosure of *the initiation* of those calculations at full draw.” *Id.* at 38. Patent Owner argues that Hargrove’s drawings do not disclose the disputed limitation because the drawings are not drawn to scale. *Id.* at 40. Patent Owner further relies on the testimony of Dr. Zavislan and asserts that “Dr. Zavislan mounted a 3-D printed replica of the Hargrove rangerfinder 140” and “was unable to reach any potential switch at full draw.” *Id.* at 42–45; *see also* PO Sur-reply 15–

16 (“Patent Owner’s model merely confirms that Hargrove’s design cannot physically be actuated at full draw.”). Patent Owner additionally relies on the testimony of Dr. Cross agreeing that “Hargrove does not **disclose pushing the button** while at full draw.” *Id.* at 29 (emphasis added) (quoting Ex. 2007, 75:9–12).

Petitioner, however, asserts that claim 1 is obvious and relies on the combination of Hargrove and Williams for the disputed recitation. Pet. 28–31 (citing, *e.g.*, Ex. 1004, 1:5–34, 2:37–40, 2:64–67, 6:18–22, Figs. 1, 4, 5, 14–17; Ex. 1005, at code (57), 8:22–45, 15:23–26, 16:39–42, Figs. 5, 6; Ex. 1003 ¶¶ 83–87, 95, 98–110). Williams’s descriptions are as follows:

The trigger plate 96 can be moved by applying a force to the trigger handle 148 directly or by use of a trigger mechanism (not shown) connected to the trigger handle 148 via a mounting hole 154 provided in the trigger handle 148. Suitable trigger mechanisms are known in the art and may be used to provide a linkage between the trigger handle 148 and a finger or the thumb of an archer’s bow-gripping hand. *Using one of such trigger mechanisms, an archer is able to move the trigger handle 148 without removing the bow-gripping hand from the bow 11. In this manner, an archer may adjust the position of the trigger plate 96 while maintaining the bow 11 at full draw.*

Ex. 1005, 8:33–45 (emphasis added).

Patent Owner’s dispute regarding Williams is that it “discloses a mechanical sighting apparatus,” which “contains no electronic components” and, therefore, Williams does not disclose beginning an evaluation by a processor. PO Resp. 29–30; *see also* PO Sur-reply 14–15 (describing Williams as “a purely mechanical system” that does not involve a processor or evaluation process). Petitioner, however, relies on Hargrove’s teachings regarding operations performed by programmed data processor 159 and programmed data processor 202 for teaching beginning an evaluation by a

processor. *See supra* §§ III.D.3.d, III.D.3.e, III.D.3.f. We are persuaded by Petitioner’s arguments and find that Williams’s disclosure of adjusting the position of the trigger while at full draw in combination with Hargrove’s teaching of the processor’s operations teaches the disputed limitation. Thus, it is the combination of the references that must be overcome and not just the teaching of each reference in isolation. One cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986); *In re Keller*, 642 F.2d 413, 426 (CCPA 1981).

We need not make a determination of whether Hargrove teaches the disputed recitation because we agree with Petitioner’s contentions and credit and give significant weight to Dr. Cross’s testimony that Williams teaches “wherein the manually actuated input device is arranged . . . to allow actuation of the input device by an archer when the bow is in a fully drawn position” recited in claim 1.

iii. Conclusion— Element 1(e)

For the reasons given, we determine that Petitioner’s arguments and evidence support a finding that the combination of Hargrove and Williams teaches claim element 1(e). We also determine that Patent Owner’s arguments and evidence do not overcome Petitioner’s showing.

g. Reasoning to Combine

We turn to the parties’ contentions regarding reasoning to combine the teachings of Hargrove and Williams. For the reasons given below, we agree with Petitioner’s contentions and credit and give significant weight to Dr.

Cross's testimony over that of Dr. Zavislan because Petitioner's contentions and Dr. Cross's testimony are consistent with the evidence of record.

Petitioner asserts that modifying Hargrove would have been "expected and useful" because a person having ordinary skill in the art would have understood and expected "that the sighting device of Hargrove would be advantageously used when in the fully drawn position." Pet. 32–33 (citing, *e.g.*, Ex. 1003 ¶¶ 102–104). Relying on the testimony of Dr. Cross, Petitioner provides more details and evidence explaining why a person having ordinary skill in the art would have combined Williams's teachings of actuating at full draw with Hargrove's range finder and further why the skilled artisan would have readily understood how to position the switch of Hargrove's range finder so that it could have been easily actuated by the archer in a fully-drawn position. *Id.* at 31–35 (citing, *e.g.*, Ex. 1003 ¶¶ 84, 95, 100–110).

For instance, Dr. Cross testifies as follows:

102. In my opinion, a POSITA would have recognized the significant benefits of adding to Hargrove the ability to more easily actuate the input device, i.e., the switch 218, from the fully drawn position. (Note that Hargrove refers to its switches as "input devices." (Ex. 1004, 11:48-50)). As discussed above, aiming at full draw is a well-recognized principle of archery. A POSITA would be motivated to arrange the switch 218 on the bow to more easily allow the archer to commence the automatic positioning of the cross hair sight (which is performed by the processor 202) from a well-known shooting position, i.e., a full draw of the bow.

103. Additionally, Hargrove teaches that actuating the switch commences the rangefinding operation, i.e., the processor determining where to make visible the movable cross hair sight. (Ex. 1004, 14:12–14, 15:25–32, 15:65–16:17). Therefore, a POSITA would already know from Hargrove that the steps of

obtaining distance information and obtaining angle information are performed by the processor responsive to actuating the switch, with the result being the display of the cross hair sight. A POSITA would have found it desirable to be able to instruct the bow sight to perform these steps while the archer is at full draw. This is because the result of performing the steps in Hargrove is the subsequent display of the cross hair sight. That is, a POSITA would understand and expect that the sighting device of Hargrove would be advantageously used when in the fully drawn position for the subsequent act of shooting the target with the assistance of the displayed movable cross hair sight. It is not unusual for an archer to desire to sight the bow when in a fully drawn position. Hargrove even supports this by noting that “[o]ften the shot opportunity lasts only a second or two” and further discussing that there is a need for an improved rangefinder “when shooting” on certain types of surfaces. (Ex. 1004, 1:51–52, 2:64–67). Therefore, it would be obvious for the switch in Hargrove to be positioned on the bow so that it can be actuated while at full draw. Actuating the switch commences the automatic sight positioning that makes visible the movable cross hair, at which point the archer then shoots at the target.

Ex. 1003 ¶¶ 102–103.

Consistent with Dr. Cross’s testimony (Ex. 1003 ¶ 103), Hargrove describes a problem to be solved is “to increase accuracy of bowhunters and/or 3-D archers *when shooting*.” Ex. 1004, 2:64-67 (emphasis added). Hargrove describes that programmed data processor 202 calculates “the horizontal distance *to the target*.” *Id.* at 15:66–16:1 (emphasis added); *see also id.* at 14:21–24 (describing programmed data processor 159 obtaining “the point-to-point distance *to the target*” (emphasis added)). Hargrove also describes that the operation must be performed quickly, i.e., “[o]ften the shot opportunity lasts only a second or two.” Ex. 1004, 1:51–52. Importantly, calculating by programmed data processor 159 is “commence[d]” when “switch [153] *is actuated by the user*.” *Id.* at 14:12–14 (emphasis added);

see also id. at 15:65–16:3 (describing that programmed data processor 202 operates in the same manner, i.e., calculating begins when switch 218 is actuated by the user). We, therefore, credit and give significant weight to Dr. Cross’s testimony (*see, e.g.*, Ex. 1003 ¶¶ 99–104) that a person having ordinary skill in the art would have been motivated to apply Williams’s teaching of an archer adjusting the position of trigger plate 96 while maintaining bow 11 at full draw (Ex. 1005, 8:33–45) to more easily actuate Hargrove’s input device to commence the operation performed by each of Hargrove’s programmed data processor 159 and programmed data processor 202 (Ex. 1004, 14:12–14, 14:21–24, 15:25–32, 15:65–16:17) while maintaining Hargrove’s bow at full draw.

Relying on the testimony of Dr. Cross, Petitioner also asserts the following:

Modifying Hargrove so that switch 218 is arranged on the housing for actuation in the fully drawn position would be use of a known technique (i.e., arranging the trigger mechanism of Williams in a location that can be actuated by the archer when in the fully drawn position) to improve a similar device (i.e., the bow sight of Hargrove) in the same way (i.e., the switch is arranged to allow actuation at full draw to commence an automatic sight positioning system as taught by Hargrove).

Pet. 32 (citing, *e.g.*, Ex. 1003 ¶¶ 100, 103–106). Petitioner further characterizes its proposed modification as “simple and not overly burdensome” and asserts a person having ordinary skill in the art “would also readily understand how to position the switch on the rangefinder so that it is more easily actuatable by the archer in a fully-drawn position.” *Id.* at 33–34 (citing, *e.g.*, Ex. 1003 ¶¶ 84, 102, 104–106).

Petitioner’s contentions and Dr. Cross’s testimony that a person having ordinary skill in the art would have known how to combine the teachings of Hargrove and Williams in the manner proposed and that such person would have had a reasonable expectation of success in doing so are consistent with the evidence of record. For instance, Hargrove describes “[t]he present invention relates in general to archery and rangefinding” (Ex. 1004, 1:5–6) and Williams, similarly, describes “[t]he present invention relates generally to sighting devices for use with an archery bow” (Ex. 1005, 1:18–20). Also both devices pertain to determining the distance from an archer to an intended target under different aiming conditions, including from an elevated position. Ex. 1004, 6:65–67 (“Upon reaching the point of elevation, the archer then aims the rangefinding device 20 . . .”), Figs. 4, 5 (illustrating aiming from a point of elevation); Ex. 1005, 1:18–23 (describing that Williams’s “improved sight apparatus for an archery bow” compensates “for elevational differences between the bow and the target”).

Relying on the testimony of Dr. Zavislan, Patent Owner disputes that Petitioner shows that a person of ordinary skill in the art would have been led to combine the teachings of Hargrove and Williams in the proposed manner. PO Resp. 29–33, 48–50. In particular, relying on the testimony of Dr. Zavislan, Patent Owner contends “Hargrove discloses a dynamic evaluation process, using a range finder that is continuously ranging” so “there is no basis or motivation to operate Hargrove” to initiate an evaluation process at full draw. PO Resp. 29–30 (citing Ex. 2009 ¶ 2); *see also id.* at 48–50 (Petitioner’s contentions are deficient because “Hargrove implements a dynamic range finding system.”). Dr. Zavislan’s testimony,

however, is conclusory, inconsistent with the evidence of record, and lacks supporting citations.

Dr. Zavislan testifies as follows:

2. Hargrove discloses a dynamic system (i.e., a system that is constantly sensing conditions and displaying a real-time cross hair), whereas the '551 patent discloses a user-actuated system that ranges only when a target is specifically selected (i.e., analogous to taking a photograph of the current conditions at the time.) Using the parlance of range finding, Hargrove operates in scan or continuous mode because calculations are continuously updated regardless of the operational or positional state of the bow, whereas the claimed invention operates in user-actuated mode because the calculations are not performed until the input device is actuated at full draw when the archer has selected a target and the geometry of the bow relative to the target has been established for taking the shot.

Ex. 2009 ¶ 2.

Dr. Zavislan's testimony (*id.*) is not consistent with Hargrove's teachings because Hargrove discloses a user-actuated system. Ex. 1004, 14:12–14, 14:21–24, 15:25–32, 15:65–16:17, Fig. 13. For example, regarding range finder 140, Hargrove describes “to commence the rangefinding operation, switch [153] is actuated by the user.” *Id.* at 14:12–14; *see also id.* at Fig. 13 (describing the first step as “Receive Initiation Actuation Signal”). Hargrove describes that calculations are performed *after* that switch is actuated. *Id.* at 14:14–29, Fig. 13. Hargrove describes that the operation range finder 179 is the same. *Id.* at 15:46–47, 15:51–52.

Relying on additional testimony of Dr. Zavislan, Patent Owner asserts that Hargrove's “constantly ranging” or “continuously updating” operation differs from the claims in the '551 Patent because using Hargrove's system in certain shooting conditions if the target moves a short distance “[t]he user

does not need to initiate the system a second time.” PO Resp. 12–17, 30 (citing, *e.g.*, Ex. 2009 ¶¶ 2–5). Dr. Zavislan further testifies as follows:

3. Hargrove explains that “[b]y selectively making visible a set of horizontal and vertical lines on the display 180, a movable set of cross hairs is provided *which move according to the horizontal distance to the target, current wind conditions, or both.*” Hargrove, 16:13-17. Thus, Hargrove discloses a dynamic system that is continuously updating the targeting after the range finder is turned on. Since, as stated in my September 11, 2018 declaration, Hargrove’s switches cannot be actuated at full draw, the archer would turn on the range finder prior to drawing the bow, and the system would then continuously update the targeting during and after drawing the bow and would subsequently continue to update the targeting until an unspecified event, such as a time out situation, occurs. The movable cross-hairs of Hargrove are analogous to the precise aim indicators of the ‘551 patent.

Ex. 2009 ¶ 3.

Dr. Zavislan’s testimony acknowledges that Hargrove’s movable cross hairs “are analogous” to aim indicators in the ‘551 Patent. *Id.* Consistent with Petitioner’s contentions and Dr. Cross’s testimony, the ‘551 Patent Specification describes an embodiment with aim indicator 35, which is a movable set of cross hairs. *See* Ex. 1001, 7:35–47 (describing that during a situation specific procedure, only one aim indicator 35 is illuminated), 13:20–28 (describing “movement of the aim indicator 35 on the LCD screen”), 14:54–15:3 (describing situation specific aim correction), Figs. 3, 5.⁹

⁹ Also we agree with Petitioner that Hargrove’s teaching does not distinguish claim 1, which does not require that cross hairs do not move. Pet. Reply 2–3. Also, Patent Owner does not dispute Petitioner’s showing relying on Hargrove’s cross hairs for element 1(d). *See supra* § III.D.3e.

Additionally, Dr. Zavislan's testimony that "Hargrove's switches cannot be actuated at full draw" (Ex. 2009 ¶ 3) is misplaced. Dr. Zavislan testifies that he relies on his first Declaration (*id.*) in which he testifies that "none of the figures in Hargrove *disclose* a device capable of actuation at full draw." Ex. 2002 ¶ 93 (emphasis added). In that first Declaration, Dr. Zavislan testifies regarding various disclosures in Hargrove and further that he "mounted a 3-D printed replica of the rangefinder 140" and he was "unable to reach any switch, including switch 153 and switch 158." Ex. 2002 ¶¶ 93–102.¹⁰ Patent Owner arguments and Dr. Zavislan's testimony do not take into account that Petitioner relies on Williams for teaching actuation at full draw, and relies on Hargrove for teaching the remaining recitations in claim 1. Pet. 12–35.

Patent Owner acknowledges that "the sighting device of Hargrove **is used** when in the fully drawn position," but asserts that "[t]here is no need to reconfigure Hargrove to **actuate** the sight at full draw and to **initiate calculations** at full draw." PO Resp. 31. Dr. Zavislan testifies that Hargrove "operates in a fundamentally different way" and that the "feature is critical." Ex. 2009 ¶ 5. That "feature" is the user initiating the ranging processor by manually actuating the input device. *Id.*

Importantly, Patent Owner's contentions and Dr. Zavislan's testimony are based on an asserted difference that is not supported by the evidence of record, i.e., that Hargrove does not start ranging by manually actuating the

¹⁰ Patent Owner acknowledges that the drawings are not technical engineering drawings. *See, e.g.*, Tr. 41:3–42:2. We agree with Petitioner regarding deficiencies in the replica of the Hargrove range finder. Pet. Reply 8–10.

input device. PO Resp. 15–17, 30–33; Ex. 2009 ¶¶ 2–5. However, as discussed throughout (*see, e.g.*, § III.D.3.f), like the claims of the ’551 Patent, in Hargrove, the manual actuation of the input device begins the evaluation by each of programmed data processor 159 and programmed data processor 202. *See, e.g.*, Ex. 1004, 14:12–14, 14:21–24, 15:25–32, 15:65–16:17, Fig. 13. That cross hairs are movable does not change that ranging begins when the switch is actuated by the user. *See, e.g., id.* at 13:39–41, 14:11–15 (describing the operation of rangefinder 140 as follows: “[f]irst, to commence the rangefinding operation, switch [153] is actuated by the user”), 15:65–67 (describing the operation of rangefinder 179 as “identical” to the aforementioned operation of rangefinder 140), Fig. 13 (illustrating “Switch” and “Receive Initiation Actuation Signal” as the first step of the process); *see also* Pet. Reply 3 (providing annotations to Figure 13 of Hargrove).

In its Sur-reply, Patent Owner does not dispute that the operation of rangefinder 140 shown in Figure 13 begins with receipt of the actuation signal (Ex. 1004, Fig. 13) but, instead, asserts that Petitioner relies on only a different embodiment. PO Sur-reply 10–13. Patent Owner’s characterization of Petitioner’s contentions and evidence does not take into account that Petitioner relies on multiple teachings and embodiments described in Hargrove, including Hargrove’s disclosure of range finder 140 and the operation described with respect to Figure 13. *See, e.g.*, Pet. 12–13, 23–25 (citing, *e.g.*, Ex. 1004, 4:22–25, 5:13–15, 6:23–29, 6:65–7:2, 10:13–21, 13:23–29, 14:10–29, 14:48–56, 15:24–35, 15:46–47, 15:51–52, 15:61, 15:65–16:10, 16:13–17, Figs. 11–13, 17). Furthermore, contrary to Patent Owner’s assertion, Hargrove describes the operation of the embodiments as

the *same*. In particular, Hargrove describes that the operation performed by range finder 179 and range finder 140 for calculating the horizontal distance is “identical.” Ex. 1004, 15:65–16:3 (describing the operation of range finder 179 (Figures 17 and 18) as identical to range finder 140 (Figures 11 through 13) in calculating the horizontal distance to target using the point-to-point distance measurement and the elevation angle), 14:10–29 (describing the operation of computing the horizontal distance to target using the point-to-point distance measurement and the elevation angle with respect to Figure 13 as commencing by actuation of the switch), 13:7–8 (describing that Figures 11 through 13 illustrate rangefinder 140 and its operation), 15:24–24 (describing that Figures 17 and 18 illustrate range finder 179).

For the first time in its Sur-reply, Patent Owner relies on a description in Hargrove (PO Sur-reply 12 (citing Ex. 1004, 9:26–31)) relating to minimizing fluctuation of the display reading. Ex. 1004, 9:26–31. This portion immediately follows Hargrove’s description of calibration routines discussed with respect to Figures 4 and 5 and is not tied specifically to range finder 179. Nevertheless, processing performed to improve readability of the display does not negate Hargrove’s disclosure that ranging by both range finder 140 and range finder 179 begins when the switch is actuated by the user.

Patent Owner additionally asserts that Dr. Cross “admits” that Hargrove “does not expressly disclose a snap-shot mode of operation” and that dynamic mode is beneficial. PO Resp. 32, 49 (citing Ex. 2007, 94:04–95:15).

Q. (BY MR. GRIGGS): Dr. Cross, I know we had some conversations regarding a rangefinder that operates in a continuous mode, so I would like to revisit that briefly. I believe

you mentioned that there were some *commercial* rangefinders that do include a continuous mode; is that correct?

A. Yes.

Q. And do you have any examples of what type of applications the continuous mode might be used in, *not necessarily with archery*, but *any type of rangefinder*?

A. In general, yes. Bushnell, for example, has rangefinders. I can't tell you about the current products, I haven't been there in a year, but the product I worked on had a continuous mode.

For example, let's say you are out hunting, and you have some trees here and then some vacant area, you know, field and more trees and more trees in the distance. You could easily go bing, bing, bing to get each one by pushing the button. If you go in continuous motion as you go down, you get a continuous reading as you go across. And that could be useful if you're hunting, if you want to basically survey the area.

Some people, *especially with rifles*, will sit there and shoot, use the laser for ranging different places, so if a deer walks in front of this tree, you know it's 320 yards or this one is 450 yards, something like that because if you're in a tree stand or on the ground and you move, the deer might see you and bolt. But if you're in there, ready to shoot, whether a bow or rifle or even handgun, for that matter, and you know the range for here or for here and here, you can correct for it.

So golf is the same way. Golf, surprisingly, some *rangefinders have a continuous mode*. You have to make sure when you're playing golf, you want to get the range to the flag. How do you know you've gotten a range to the flag or not the trees behind it? Well, if you're ranging across this way, you'll see 200 yards, 200 yards, 75 yards, 200 yards. Otherwise, you have to sit there and keep pushing the button each time. So it's a matter of convenience.

Ex. 2007, 93:22–95:15 (emphases added).

Dr. Cross’s testimony relates to commercial products for hunting, “especially with rifles” and for playing “golf,” and does not refer to Hargrove expressly. *Id.* We do not find an admission by Dr. Cross regarding Hargrove, as asserted by Patent Owner. *Id.*

Patent Owner also asserts that Hargrove “teaches away from actuation at full draw because the Hargrove system is not designed to lock in on the target, but instead is designed to continuously update its calculations, which would be beneficial in tracking a moving target.” PO Resp. 32. “A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). We find nothing in Hargrove that supports that a person of ordinary skill would have been discouraged or led in a direction divergent from modifying Hargrove in the manner proposed by Petitioner.¹¹

In its Sur-reply, relying on the testimony of Dr. Zavislan, Patent Owner further asserts that Petitioner’s proposed modification “would render

¹¹ Additionally, although not necessary for our determination, we agree with Petitioner’s contentions and evidence in its Reply that a person having ordinary skill in the art would have been motivated to modify Hargrove’s system in view of Williams even if Hargrove operates in continuous or scan mode. Pet. Reply 10–11; Ex. 1013 ¶¶ 22–24. Furthermore, Dr. Cross’s testimony is proper rebuttal evidence, not needed for a prima facie case of obviousness. *See Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1365 (Fed. Cir. 2015); *Belden Inc., v. Berk-Tek LLC*, 805 F.3d 1064, 1078–80 (Fed. Cir. 2015) (holding that the Board may rely on new evidence submitted with a reply because the evidence was legitimately responsive to patent owner’s arguments and not needed for a prima facie case of obviousness).

Hargrove inoperable.” PO Sur-reply 14–15 (*see* Ex. 2002 ¶ 64). Dr. Zavislan testifies that in contrast to Hargrove, Williams is “a completely mechanical device.” Ex. 2002 ¶ 64. Patent Owner’s argument and Dr. Zavislan’s testimony are premised on the notion that Williams’s mechanical trigger mechanism must be physically incorporated into Hargrove’s processor-based range finder. “It is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements.” *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012); *Keller*, 642 F.2d at 425 (Obviousness does not require that all of the features of the secondary reference be bodily incorporated into the primary reference). We credit the testimony of Dr. Cross that “the proposed modification of Hargrove does not require that the specific trigger mechanism of Williams be incorporated into the Hargrove bow sight” (Ex. 1003 ¶ 101) over the testimony of Dr. Zavislan because Dr. Cross’s testimony is consistent with Petitioner’s proposed modification and the teachings of Hargrove and Williams. More specifically, Petitioner proposes modifying Hargrove so the switch is arranged to allow for actuation in the fully drawn position. *See, e.g.*, Pet. 32; Ex. 1003 ¶¶ 101–103.; Pet. Reply 10.¹²

Upon consideration of Dr. Zavislan’s testimony in his first and second declarations (*see, e.g.*, Ex. 2002 ¶¶ 93–102; Ex. 2009 ¶¶ 2–5, 15), we credit and give significant weight to Dr. Cross’s testimony (*see, e.g.*, Ex. 1003 ¶¶ 84, 95, 100–110) over the testimony of Dr. Zavislan that a

¹² Furthermore, Patent Owner characterizes “inclination compensation” taking place “at full draw” as an “unremarkable proposition.” PO Resp. 30.

person having ordinary skill in the art would have recognized the benefits of combining Williams's teachings of actuating at full draw with Hargrove's range finder because Dr. Cross's testimony is consistent with the evidence of record. Also, we agree with Petitioner's contentions and credit and give significant weight to Dr. Cross's testimony that a person having ordinary skill in the art would have known how to combine the teachings of Hargrove and Williams in the manner proposed and that such person would have had a reasonable expectation of success in doing so because Petitioner's contentions and Dr. Cross's testimony are consistent with the evidence of record.

h. Secondary Considerations

We turn to Patent Owner's evidence and arguments relating to secondary considerations of non-obviousness. Factual inquiries for an obviousness determination include secondary considerations based on evaluation and crediting of objective evidence of nonobviousness. *Graham*, 383 at 17. Notwithstanding what the teachings of the prior art would have suggested to one with ordinary skill in the art at the time of the invention, the totality of the evidence submitted, including objective evidence of nonobviousness, may lead to a conclusion that the claimed invention would not have been obvious to one with ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–1472 (Fed. Cir. 1984). Secondary considerations may include any of the following: commercial success, long-felt but unsolved needs, failure of others, and praise. *See Graham*, 383 U.S. at 17; *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

Patent Owner asserts that it has “evidence of commercial success and industry praise resulting from the infringing features of Garmin’s¹³ Xero™ bow sight.” PO Resp. 55. More specifically, Patent Owner relies on statements made in documents and videos regarding the Xero™ bow sight. *Id.* at 56.

Patent Owner’s evidence pertains to industry praise in the form of Petitioner’s own product literature, for example, but not to sales data demonstrating commercial success. PO Resp. 56. That Petitioner’s product literature “advertises” or “touts” its own product accused of infringing (PO Resp. 56), however, does not itself establish commercial success. Instead, Petitioner’s advertising shows only that Petitioner promoted its own product. Additionally, Patent Owner relies on a hyperlink to a video that has not been submitted in the instant proceeding. PO Resp. 56. “All evidence must be filed in the form of an exhibit.” 37 C.F.R. § 42.63(a). We weigh actual evidence in our analysis of secondary considerations. Material available at the hyperlink in the absence of being submitted could change over time. Accordingly, videos provided by only hyperlink are not evidence in the instant proceeding and will not be considered.

Regarding Patent Owner’s assertion that Petitioner’s product received praise in the industry, Patent Owner submits as support only hyperlinks to videos that have not been submitted as exhibits. PO Resp. 56. Patent Owner’s assertion, therefore, is only attorney argument without supporting evidence. Also, Patent Owner points to generalized statements, i.e., that

¹³ Petitioner names Garmin International, Inc., Garmin USA, Inc., and Garmin Switzerland GmbH as the real parties-in-interest. Pet. 65.

Petitioner’s bow is “revolutionary” and is the “best new product of the year.” *Id.* Patent Owner has not presented argument or evidence that any of the asserted praise in the industry resulted from the unique characteristics of the claimed subject matter, as opposed to other factors unrelated to the quality of the claimed subject matter. *Cf. In re Applied Materials, Inc.*, 692 F.3d 1289, 1299–1300 (Fed. Cir. 2012) (“There must be ‘proof that the sales were a direct result of the unique characteristics of the claimed invention—as opposed to other economic and commercial factors unrelated to the quality of the patented subject matter.’” (citation omitted)).

Additionally, “[f]or objective evidence of secondary considerations to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention.” *ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1220, (Fed. Cir. 2016) (citations omitted). “A nexus may not exist where, for example, the merits of the claimed invention were ‘readily available in the prior art.’” *Id.* (quoting *Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1580 (Fed. Cir. 1983)). A presumption of a nexus applies for objective indicia when the patentee shows that the asserted objective evidence is tied to a specific product and that product embodies the claimed features, and is coextensive with them. *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882, F. 3d 1056, 1072–73 (Fed. Cir. 2018).

Patent Owner points to Petitioner’s product documentation and, in particular, a statement that a “silent, single-button trigger mounted on the bow’s grip lets the archer range targets at rest or at full draw.” PO Resp. 56 (quoting Ex. 2005, 1–2); PO Sur-reply 16 (citing Ex. 2005, 1–2). Also

Patent Owner asserts that the Xero™ bow sight is an accused product in the Related District Court Proceeding. PO Resp. 55.¹⁴

Regarding Petitioner’s product documentation describing a button trigger mounted on the bow’s grip that lets the archer range targets at full draw (Ex. 2005, 1–2), Patent Owner characterizes sighting (e.g., inclination compensation) taking place “at *full draw*” as an “*unremarkable* proposition.” PO Resp. 30 (emphases added). Additionally, Williams teaches actuating at full draw. Ex. 1005, 8:33–45. Furthermore, each of the challenged claims recite more details than simply ranging at full draw and Patent Owner’s analysis of only one “unremarkable” feature does not take into consideration any other recitation of the challenged claims. We are not persuaded that Petitioner’s own product literature (Ex. 2005) establishes a nexus between the challenged claims and industry praise.¹⁵

We turn to Patent Owner’s assertion that the Xero™ bow sight is an accused product in the Related District Court Proceeding infringing the challenged claims. PO Resp. 55. As support, Patent Owner includes a citation to paragraphs 65 through 87 of the Declaration of Dr. Zavislan filed

¹⁴ As discussed above (*see supra* § II.C), in accordance with 37 C.F.R. § 42.8(b)(2) requiring identification of related judicial proceedings, the parties inform us that the ’551 Patent is asserted in *Burris Co. v. Garmin Int’l, Inc.*, Case No. 6:18-cv-00700 (D. Or.) (i.e., the Related District Court Proceeding). Pet. 65; Paper 4, 2.

¹⁵ We further note that Petitioner’s product literature (Ex. 2005) describes beneficial characteristics of its device that do not appear to be related to the challenged claims such as “instantly” providing distance measurements, “[a] sunlight-readable display,” an “odometer,” a feature that estimates “the arrow’s point of impact” to begin recovery of the game, providing “arrow speed,” and being “water rated.” Ex. 2005.

in the Related District Court Proceeding, without explanation. *See generally* Ex. 2004. “Arguments must not be incorporated by reference from one document to another document.” 37 C.F.R. § 42.6 (a) (3). Patent Owner’s assertion is conclusory and Patent Owner may not rely on analysis in only Dr. Zavislan’s Declaration filed in the Related District Court Proceeding because its relevance to the instant proceeding has not been explained. Although Patent Owner need not put forth a limitation-by-limitation analysis in order to establish that its product is the invention recited in the challenged claims where the claimed subject matter is relatively simple, unlike the facts of *Polaris*, 882 F.3d at 1071–74 & n.7, the product at issue is not Patent Owner’s product and we agree with Petitioner that even after consideration of Dr. Zavislan’s Declaration filed in the Related District Court Proceeding having not proven infringement, Patent Owner has not shown that Petitioner’s products are coextensive with the independent claims because the manually actuated input device may be ranged at rest. *See* Pet. Reply 23–24 (citing Exs. 1016, 1017); Ex. 2004, 257 (describing that bow sights require “minimal movement, at *rest* or full draw” because “[y]ou mount the button” rather than the manually actuated input device being “arranged upon the bow” as recited in independent claim 1) (emphasis added).¹⁶

We have considered the secondary considerations of non-obviousness and accorded it/them appropriate weight along with all of the *Graham*

¹⁶ Nevertheless, our determination herein does not change even if Patent Owner has established a nexus, because we agree with Petitioner that the evidence of record shows any commercial success and industry praise is attributable to Petitioner’s reputation and marketing, as well as other features of Petitioner’s product. Pet. Reply 24–25.

factors, and we agree with the Petitioner that the claimed invention would have been obvious.

i. Conclusion—Claim 1

In summary, we agree with Petitioner's contentions, and we credit and give significant weight to the testimony of Dr. Cross over the testimony of Dr. Zavislan as Dr. Cross's testimony and Petitioner's contentions are consistent with the evidence cited therein. Upon consideration of the contentions and evidence presented by both parties, we find that Petitioner demonstrates that all recitations in claim 1 are taught by Hargrove and Williams. Additionally, we determine that Petitioner has offered articulated reasoning with a rational underpinning as to why one of ordinary skill in the art would have combined the teachings of Hargrove and Williams in the manner proposed by Petitioner. We also determine that Patent Owner's contentions and evidence do not undermine Petitioner's showing.¹⁷

Accordingly, upon consideration of the contentions and evidence presented by both parties, we find that Petitioner has demonstrated by a preponderance of the evidence that claim 1 is obvious over Hargrove and Williams.

¹⁷ Also in making our determination regarding claim 1, we considered in full all Patent Owner's contentions and evidence, including those regarding lack of enablement of Hargrove, discussed in more detail in a separate section below. *See infra* § III.F. This is true for all independent claims, and to avoid repetitiveness, we do not duplicate this statement in our discussion of the other independent claims.

6. *Dependent Claims 2, 7, and 8*

Claim 2 depends directly from claim 1 and recites “wherein some of the aim indicators are vertically aligned with each other.” Ex. 1001, 16:10–11. Petitioner contends “the plurality of horizontal lines 184 shown in Fig. 17 are arranged vertically on the LCD, such that they are positioned one atop another along a vertical axis.” Pet. 36 (citing, *e.g.*, Ex. 1004, 15:29–32, Fig. 17). Consistent with Petitioner’s contentions, Hargrove illustrates horizontal lines 184 in parallel across display 180. Ex. 1004, Fig. 17.

Claim 7 depends directly from claim 1 and recites “wherein at least one of the multiple aim indicators are selectively displayed in a see-through panel display.” Ex. 1001, 16:33–35. Petitioner points to Hargrove’s description of liquid crystal displays, such as display 180 and relies on the testimony of Dr. Cross. Pet. 36–37 (citing, *e.g.*, Ex. 1004, 15:24–32; Ex. 1003 ¶ 88). Consistent with Petitioner’s contentions, Hargrove describes that “liquid crystal display 180” produces “a movable cross hair sight.” Ex. 1004, 15:24–32.

Claim 8 depends from claim 7 and recites “wherein ones of the multiple aim indicators, a value indicative of a shooting angle of the bow, and a value of a distance to target that corresponds to the range to target is displayed on the see-through panel display.” Ex. 1001, 16:36–40. Petitioner points to Hargrove’s display of other information on display 180. Pet. 37–38 (citing, *e.g.*, Ex. 1004, 15:32–35, Fig. 17). Consistent with Petitioner’s contentions, Hargrove describes that “other information may also be displayed on liquid crystal display 180 such as distance to the target information 186 and wind direction information 188.” Ex. 1004, 15:32–35.

Patent Owner does not argue dependent claims 2, 7, and 8 separately. *See generally* PO Resp. We agree with Petitioner, and we credit and give significant weight to the testimony of Dr. Cross because Petitioner’s contentions and Dr. Cross’s testimony are consistent with the evidence of record, including the teachings of the asserted prior art discussed above. Upon consideration of the contentions and evidence in the complete record before us, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 2, 7, and 8 are obvious over Hargrove and Williams.

7. *Dependent Claim 12*

Claim 12 recites:

12. The auto-correcting bow sight of claim 1, wherein the processor can determine a precise aiming position based on both of (i) the range to target, and (ii) the angle of inclination of the bow and can display at least one of the multiple aim indicators at the precise aiming position in a manner that allows an archer to take dead aim at the target.

Ex. 1001, 16:59–64.

Petitioner points to Hargrove’s selection of the cross hair sight “based on *both* the distance to the target and the bow angle information.” Pet. 38–40 (citing, *e.g.*, Ex. 1004, 14:11–30, 15:55–60, 15:65–66, 16:1–3, 16:10–17, Fig. 17; Ex. 1003 ¶¶ 82, 89–91). With respect to “display at least one of the multiple aim indicators . . . in a manner that allows an archer to take dead aim at the target” recited in claim 12, Petitioner, for example, contends “Hargrove is concerned with improving shot accuracy and recognizes the problems for archers, particular[ly] bow hunters, of taking aim based on various factors” and “teaches that the displayed cross hair sight provides a

precise aiming position.” *Id.* at 40–41 (citing, *e.g.*, Ex. 1003 ¶ 89–91, Ex. 1004, 1:13–28, 2:56–67, 4:3–14, 14:49–62).

Consistent with Petitioner’s contentions, with respect to the embodiment shown in Figures 11 through 13, Hargrove describes that programmed data processor 159 “initiates the point-to-point distance measurement” and point-to-point measure device 154 returns that distance to programmed data processor 159. Ex. 1004, 14:19–23. Hargrove further describes programmed data processor 159 “next acquires elevation angle information from the angle sensor 160.” *Id.* at 14:24–26. Then, “[w]ith the point-to-point distance and the elevation angle information,” the programmed data processor “computes the horizontal distance to the target using trigonometric relationships.” *Id.* at 14:26–29. Also consistent with Petitioner’s contentions, regarding Hargrove’s range finder 179 in the embodiment shown in Figures 17 and 18, Hargrove describes “[i]n operation, in a manner identical to the manner of operation of the rangefinder 140 discussed above, the programmed data processor 202 calculates the horizontal distance to the target based upon a point-to-point distance measurement and the angle detected by the angle sensitive transducer 210.” *Id.* at 15:65–16:3.

With respect to “display at least one of the multiple aim indicators . . . in a manner that allows an archer to take dead aim at the target” recited in claim 12, consistent with Petitioner’s contentions, Hargrove describes that range finding involves “accurately” determining the distance to a target. Ex. 1004, 2:56–67. Hargrove also describes properly positioning the sight “for a given shot.” *Id.* at 14:49–62.

Patent Owner does not argue dependent claim 12 separately. *See generally* PO Resp. We agree with Petitioner, and we credit and give significant weight to the testimony of Dr. Cross because Petitioner's contentions and Dr. Cross's testimony are consistent with the evidence of record, including the teachings of the asserted prior art discussed above. Upon consideration of the contentions and evidence in the complete record before us, we find that Petitioner has demonstrated by a preponderance of the evidence that claim 12 is obvious over Hargrove and Williams.

8. *Independent Claims 13 and 23*

Independent claims 13 and 23 are similar to claim 1. Claim 13 recites "a method of displaying" that comprises steps that correspond to the recitations of the auto-correcting bow sight in claim 1. *Compare* Ex. 1001, 16:65–17:15 *with id.* at 15:53–16:9. Like claim 1, independent claim 23 is directed to an auto-correcting bow sight, which includes many of the same limitations recited in claim 1, except claim 23 recites a sensor system rather than a range finder and inclinometer. *Compare* Ex. 1001, 18:16–34 *with id.* at 15:53–16:9.

Petitioner's showing with respect to claims 13 and 23 is similar to its showing with respect to claim 1, and indeed, Petitioner references its contentions for claim 1 and relies on the same reasons for combining the asserted prior art as for claim 1. *See, e.g.,* Pet. 42–45, 50–51. Petitioner accounts sufficiently for all differences in the claims. For instance, like dependent claim 12, independent claim 13 recites "determining a precise aiming position based on the shooting distance and the vertical shooting angle of the bow." Ex. 1001, 17:4–5. For that recitation, Petitioner points to

its contentions for dependent claim 12. Pet. 42–45. Regarding independent claim 23 and the recitation of “a sensor system that is mounted to a bow and that is configured to determine both of a range to a target and an angle of inclination of the bow,” Petitioner points to its contentions for claim 1 and relies on the testimony of Dr. Cross that one having ordinary skill in the art would have understood that the sensor system is taught by Hargrove’s programmed data processor 202, point-to-point measuring device 214, and angle sensitive transducer 210, for example. *Id.* at 50 (citing, *e.g.*, Ex. 1004, 15:36–64; Ex. 1003 ¶ 57).

For independent claims 13 and 23, Patent Owner relies on its contentions for independent claim 1. *See generally* PO Resp. For the reasons given above with respect to claim 1, we agree with Petitioner’s contentions and credit and give significant weight to Dr. Cross’s testimony over that of Dr. Zavislan because Petitioner’s contentions and Dr. Cross’s testimony are consistent with the evidence of record. *See supra* III.D.3. Upon consideration of the contentions and evidence in the complete record before us, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 13 and 23 are obvious over Hargrove and Williams.

9. *Dependent Claim 20*

Claim 20 depends from claim 13 and recites:

wherein the input device comprises a triggering button, and wherein actuating the triggering button a first time begins a first determining of a precise aiming position and displaying of a first aim indicator at the first precise aiming position while the bow is fully drawn and wherein the method further comprises actuating the triggering button a second time and beginning a second determining of a second precise aiming position and displaying of a second aim indicator at the second precise aiming position

while the bow remains fully drawn so as to correct for situation-specific changes in a shooting situation while the bow remains fully drawn.

Ex. 1001, 17:38–49.

Petitioner contends “[a]s discussed above for the mapping of claim 1(e) and incorporated herein, the switch 218 is an input device, and actuating switch commences the processor 202 to begin receiving distance and angle information and displaying the cross hair on the LCD.” Pet. 46 (citing, *e.g.*, Ex. 15:65–16:17). Petitioner also points to its contentions for element 1(e) pertaining to the combined teachings of Hargrove and Williams for displaying while the bow is fully drawn. *Id.* at 46–48. Petitioner additionally asserts “[i]t would have been obvious to modify Hargrove’s electronic bow sight with Williams’s trigger mechanism that allows for varying the aiming position while the bow is fully drawn” and points to teachings in Hargrove and Williams as support. *Id.* at 48–49 (citing, *e.g.*, Ex. 1004, 6:65–7:2, 7:28–29, 10:29–32, 14:12–16; Ex. 1005, 8:22–10:7; Ex. 1003 ¶¶ 111–115).

Patent Owner asserts that the combination of Hargrove and Williams does not teach initiating a triggering button a first time and a second time to display first and second aim indicators. PO Resp. 28. Patent Owner also asserts that “Hargrove does not disclose initiating an evaluation process while at full draw.” *Id.* at 33.

We agree with Petitioner’s contentions and credit and give significant weight to Dr. Cross’s testimony that a person having ordinary skill in the art would find it beneficial and simple to modify the Hargrove and Williams combination to allow the archer to depress the switch a second time at full draw due to changes in various factors (Ex. 1003 ¶¶ 113–115) because

Petitioner's contentions and Dr. Cross's testimony are consistent with the evidence of record. For example, Williams describes that its improved apparatus allows the archer to adjust quickly and easily (Ex. 1005, 2:43–50) and to adjust at full draw (*id.* at 8:39–45). Hargrove teaches depressing the switch to change a reading on the display or input information. *See, e.g.*, Ex. 1004, 6:57–60 (describing actuation of switch 33 by an archer to input elevation height), 6:65–7:2 (describing actuating switch 33 or turning knob 31 to change a reading on a display), 7:28–29 (describing actuating switch 33 to complete calibration). Hargrove also teaches that conditions change quickly. *Id.* at 1:51–52 (“Often the shot opportunity lasts only a second or two.”). Additionally, regarding Patent Owner's assertion that Hargrove lacks disclosure, for the reasons discussed with respect to claims 1 and 13, we agree with Petitioner's contentions and credit and give significant weight to Dr. Cross's testimony over that of Dr. Zavislan because Petitioner's contentions and Dr. Cross's testimony are consistent with the evidence of record. *See supra* §§ III.D.3, III.D.6. We also find that Patent Owner's arguments do not undermine Petitioner's showing.

Patent Owner also asserts “since Hargrove is a dynamic system, there is no need to initiate the Hargrove system a second time.” PO Resp. 34 (citing Ex. 2009 ¶ 4). For the reasons discussed (*see supra* §§ III.D.3, III.D.6), we find that Patent Owner's contentions and Dr. Zavislan's testimony regarding the asserted continuous scan mode of operation of Hargrove do not undermine Petitioner's showing. Also, we agree with Petitioner's contentions and credit and give significant weight to Dr. Cross's testimony that even if Hargrove operates in continuous scan mode, modifying Hargrove to require initiation of the switch a second time is

beneficial for power conservation because Petitioner's contentions and Dr. Cross's testimony are consistent with the evidence of record. Pet. Reply 25; Ex. 1013 ¶ 24.

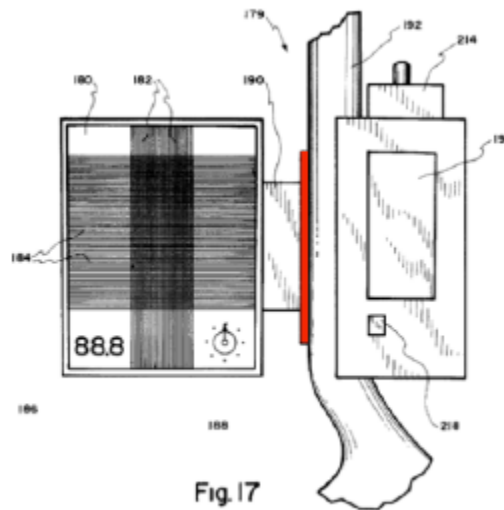
We find that Petitioner shows that all recitations in claim 20 are taught by Hargrove and Williams. Additionally, we determine that Petitioner has offered articulated reasoning with a rational underpinning as to why one of ordinary skill in the art would have combined the teachings of Hargrove and Williams in the manner proposed by Petitioner.

Upon consideration of the contentions and evidence in the complete record before us, we find that Petitioner has demonstrated by a preponderance of the evidence that claim 20 is obvious over Hargrove and Williams.

10. Dependent Claims 24 and 25

Claim 24 depends from claim 23 and recites "wherein the sensor system comprises a range finder and an inclinometer that are both integrated into the auto-correcting bow sight." Ex. 1001, 18:35–37. Petitioner points to its contentions for claim 1 relating to the range finder and inclinometer, discussed above in Section III.D.3.

Claim 25 depends from claim 24 and recites "a base that is attached to the bow for supporting the auto-correcting bow sight such that each of the range finder and the inclinometer are supported on the bow by way of the base of the auto-correcting bow sight." Ex. 1001, 18:38–42. Petitioner points to Hargrove's mounting and provides an annotated Figure 17, reproduced below. Pet. 52–53.



Id. at 52 (citing Ex. 1004, Fig. 17). Figure 17 of Hargrove, above, illustrates a front elevation view of range finder 179 employing liquid crystal display 180, which displays a movable sight (Ex. 1004, 4:62–64, 15:25–29), and Figure 17, above, includes Petitioner’s red annotation of rigid extension member 190 (Pet. 52). Consistent with Petitioner’s contentions, Hargrove describes “[a]s illustrated in FIG. 17, the display 180 is shown as being rectangular and comprising a rigid extension member 190 which permits the display 180 to be rigidly mounted on archery bow 192.” Ex. 1004, 15:36–39.

Patent Owner does not argue dependent claims 24 and 25 separately. *See generally* PO Resp. We agree with Petitioner, and we credit and give significant weight to the testimony of Dr. Cross because Petitioner’s contentions and Dr. Cross’s testimony are consistent with the evidence of record, including the teachings of the asserted prior art discussed above. Upon consideration of the contentions and evidence in the complete record

before us, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 24 and 25 are obvious over Hargrove and Williams.

11. Dependent Claim 26

Claim 26 recites:

26. The auto-correcting bow sight of claim 25, wherein the input device comprises a triggering button that is supported by the bow at a location that is spaced from the base of the auto-correcting bow sight so as to allow actuation of the triggering button by an archer when the bow is in a fully drawn position.

Ex. 1001, 18:42–48.

For claim 26, Petitioner states “[s]ee mapping for claims 1(e), 20, and 25.” Pet. 53. Patent Owner asserts that although claim 26 “uses different terminology, claim 26 claims a configuration similar to the configuration of the input device of claim 1.” PO Resp. 35. Patent Owner’s contention is premised on its construction for claim 1, which we decline to adopt. *See supra* § III.C.1.

Also, that claim 26 recites that the triggering button is “at a location that is spaced from the base” of the sight does not preclude incorporating the triggering button in the sight. As shown in Figures 13 and 17 of Hargrove, switches 153 and 218 are spaced from, i.e., slightly above the base.

Ex. 1004, Figs. 13, 18. Nevertheless, as discussed with respect to claim 1, Petitioner relies on the combination of Hargrove and Williams for teaching a location that allows actuation of the triggering button by an archer when the bow is in a fully drawn position. *See supra* § III.D.3f. For the same reasons discussed above (*id.*), we are persuaded by Petitioner’s contentions and credit and give significant weight to the testimony of Dr. Cross regarding

claim 26. We determine Petitioner's showing is not undermined by Patent Owner's arguments or evidence.

Accordingly, upon consideration of the contentions and evidence in the complete record before us, we find that Petitioner has demonstrated by a preponderance of the evidence that claim 26 is obvious over Hargrove and Williams.

E. Obviousness over Hargrove, Williams, and London

Petitioner asserts that claims 4, 5, 9, 21, and 22 are unpatentable, under 35 U.S.C. § 103(a), as obvious over Hargrove, Williams, and London. Pet. 6, 54–63.

1. London

London is directed to an archery bow sight having light emitting elements, including some programmed to correspond to respective target distances and others programmed to indicate sidewise tilt of the bow. Ex. 1006, 1:4–9. Figure 1 of London is reproduced below.

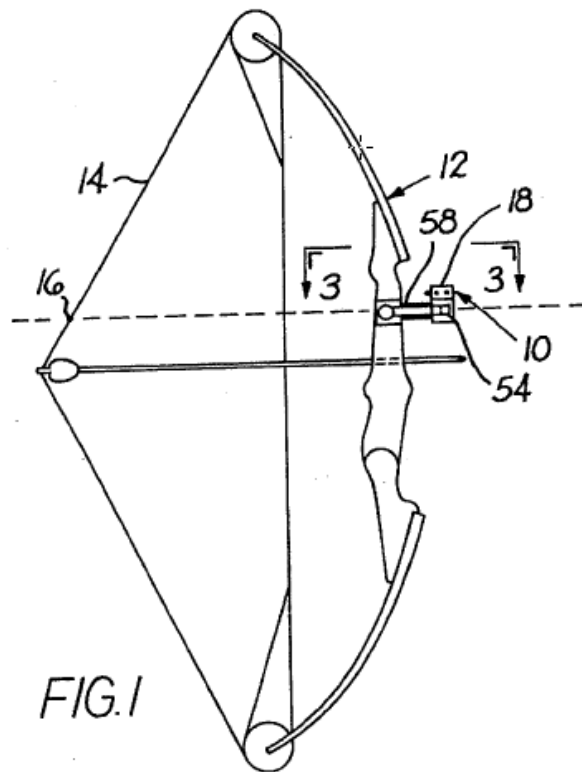


Figure 1 of London, above, illustrates a side elevational view of conventional bow 12 having bow sight 10. *Id.* at 2:42–44, 2:59–61. Bow 12 includes bow string 14 and peep sight 16 mounted thereon. *Id.* at 2:61–62. Bow sight 10 includes housing 18, which is of a rectangular box-like configuration (*id.* at 2:64–66), and circuit board 34, which carries the electrical components of bow sight 10. *Id.* at 3:9–11.

Figure 3 of London, reproduced below, is a view of bow sight 10 taken substantially along line 3—3 of Figure 1. *Id.* at 2:47–48.

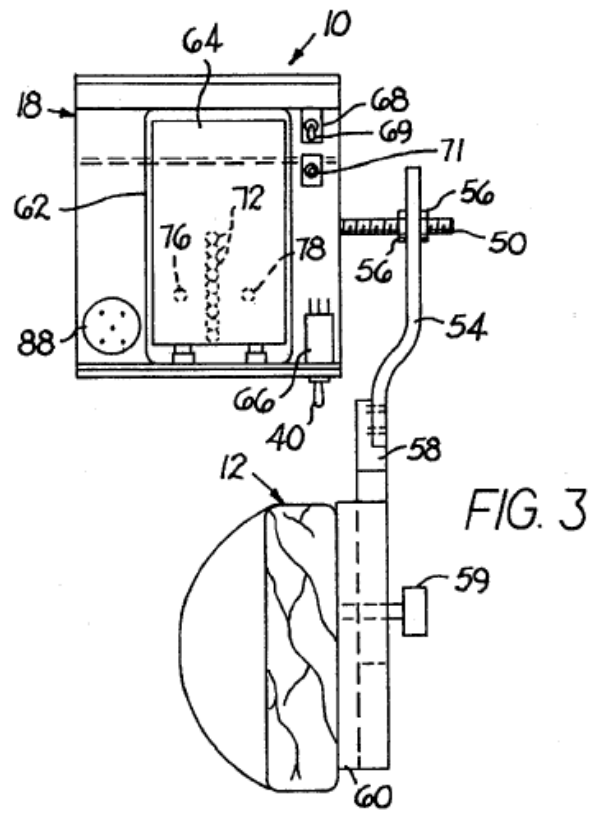


Figure 3 of London, above, illustrates a view of bow sight 10 illustrating a series of light emitting diodes (LEDs) 72 disposed on circuit board 34 in a row. *Id.* at 3:45–50. LEDs 76 and 78 are respectively disposed on circuit board 34 at opposite ends of the row of LEDs 72. *Id.*

2. Claims 4 and 9

Each of claims 4 and 9 depends directly from claim 1. Claim 4 recites “the multiple aim indicators comprising at least one of (i) light emitting diodes, and (ii) portions of fiber optic strands conveying light from a bank of diodes mounted remotely with respect to the multiple aim indicators.”

Ex. 1001, 16:16–20. Claim 9 recites “wherein the multiple aim indicators define discrete dots.” *Id.* at 16:41–42.

For claim 4, Petitioner points to London's "series of LEDs" that can be programmed to be lit based on sensor information obtained by the London sight. Pet. 56 (citing Ex. 1006, 2:30–33, Ex. 1006, 4:44–62, 6:20–50, 56:43–50). For claim 9, Petitioner points to London's teaching that "[e]ach LED of the series of LEDs 72 reflects a discrete dot." *Id.* at 61 (citing Ex. 1006, 2:32–34, 3:52–60, 4:44–63, 5:44–50, 6:41–50).

Additionally, relying on the testimony of Dr. Cross, Petitioner has offered articulated reasoning with a rational underpinning as to why one of ordinary skill in the art would have combined the teachings of Hargrove, Williams, and London in the manner recited in each of claims 4 and 9. *Id.* at 56–58, 61 (citing, *e.g.*, Ex. 1003 ¶¶ 118–121, 128). Dr. Cross testifies that a person having ordinary skill in the art would have substituted London's LED array for the LCD of Hargrove (Ex. 1003 ¶ 119) to save power and reduce weight (*id.* ¶ 120). Dr. Cross testifies that in the proposed modification, the LED array would be mounted "in the *same* general location" as in Hargrove, and the processor "would perform its *same* derivations" and determine the horizontal distance "*as described in Hargrove*," and, therefore, would have been applying a "known technique" to "yield a predictable result." *Id.* ¶ 119 (emphases added). Dr. Cross also testifies how saving power and weight would have improved the archer's hunting experience and that color LEDs provide the added benefit of conveying information to the archer without the archer having to look away from the target. *Id.* ¶¶ 120–121.

Patent Owner does not argue claims 4 and 9 separately. *See generally* PO Resp. In summary, we agree with Petitioner, and we credit and give significant weight to the testimony of Dr. Cross because Petitioner's

contentions and Dr. Cross's testimony are consistent with the evidence of record, including the teachings of the asserted prior art discussed above.

Upon consideration of the contentions and evidence in the complete record before us, we find that Petitioner shows that all recitations in claims 4 and 9 are taught by Hargrove, Williams, and London. Additionally, we determine that Petitioner has offered articulated reasoning with a rational underpinning as to why one of ordinary skill in the art would have combined the teachings of Hargrove, Williams, and London in the manner proposed by Petitioner. Accordingly, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 4 and 9 are obvious over Hargrove, Williams, and London.

3. *Claims 5, 21, and 22*

Claim 5 recites

wherein the input device comprises a triggering button, and wherein a peep sight is mounted to a bow string of the bow and a targeting sight is positioned with respect to the peep sight and the range finder so that a user can align the targeting sight and target as viewed through the peep sight while actuating the triggering button to begin the evaluation.

Ex. 1001, 16:21–27.

Relying on the testimony of Dr. Cross, Petitioner points to the combined teachings of Hargrove and London for claim 5. Pet. 58–61 (citing, *e.g.*, Ex. 1003 ¶¶ 62, 93–94, 123–124). For instance, Petitioner asserts “[t]he claimed ‘targeting sight’ is met by Hargrove’s display 180, which is a sight window presenting a crosshair and which is viewable by the archer.” Pet. 58 (citing, *e.g.*, Ex. 1004, 15:29–35, Fig. 17). For the “peep

sight” recited in claim 5, Petitioner points to London’s peep sight 16. *Id.* at 59 (citing, *e.g.*, Ex. 1006, 2:61–64, 6:29–30, 6:43–47, Fig. 1).

Additionally, relying on the testimony of Dr. Cross, Petitioner has offered articulated reasoning with a rational underpinning as to why one of ordinary skill in the art would have combined the teachings of Hargrove, Williams, and London in the manner recited in claim 5. *Id.* at 58–61 (citing, *e.g.*, Ex. 1003 ¶¶ 62, 93–94, 123–124). Dr. Cross testifies that adding London’s peep sight is using a known technique (i.e., use of London’s conventional peep sight) to improve (by assisting the archer in aiming at the target) a similar device (i.e., Hargrove’s bow) in a similar way. Ex. 1003 ¶ 123.

Claim 21 depends directly from claim 13 and further recites:

further comprising viewing a targeting sight through a peep sight that is mounted in a string of the bow and aligning the target with the targeting sight and peep sight while the bow is in the fully drawn position during the initiation of the at least one of the evaluating the shooting distance, the evaluating the vertical shooting angle, and the determining the precise aiming position steps.

Ex. 1001, 18:1–8. Petitioner asserts that claim 21 “recites steps and structure similar to claim 5” and Petitioner “incorporates by reference the mappings” for claims 5 and 13. Pet. 62 (citing, *e.g.*, Ex. 1003 ¶¶ 123–124).

Claim 22 depends from claim 21 and further recites:

wherein the targeting sight is integrated into the auto-correcting bow sight and fixed with respect to the bow and the peep sight when the bow is fully drawn so that during multiple initiations of the at least one of the evaluating the shooting distance, the evaluating the vertical shooting angle, and the determining the precise aiming position steps, the targeting sight, the bow, and

the peep sight are in constant relative positions with respect to each other.

Ex. 1001, 18:9–15.

For claim 22, Petitioner also “incorporates by reference the mappings” for claims 5, 13, and 25. Pet. 63. Petitioner further asserts that because display 180 is mounted rigidly on the box and the peep sight is fixed on the bow string, the display and the peep sight are in constant relative positions to each other. *Id.* (citing, *e.g.*, Ex. 1003 ¶¶ 125–126).

Regarding claims 5, 21, and 22, Patent Owner asserts that the combination of Hargrove, Williams, and London do not teach the “targeting sight.” PO Resp. 28, 36–37 (citing Ex. 2002 ¶ 67; Ex. 2009 ¶ 3). Patent Owner’s arguments are premised on its proposed construction for “targeting sight,” which we decline to adopt for the reasons given above. *See supra* III.C.2. Instead for the reasons given, we determine that “targeting sight” means “an alignment and aiming tool,” which encompasses more than cross hairs. *Id.* Hargrove’s display 180 teaches an alignment and aiming tool. Also, even under Patent Owner’s proposed construction, Hargrove teaches cross hairs and, therefore, teaches the disputed recitation. Ex. 1004, 14:53–56; 15:25–32, 16:13–16; Fig. 17.

In summary, we agree with Petitioner’s contentions and credit and give significant weight to Dr. Cross’s testimony over that of Dr. Zavislan because Petitioner’s contentions and Dr. Cross’s testimony are consistent with the evidence of record. We also find that Patent Owner’s arguments do not undermine Petitioner’s showing.

Upon consideration of the contentions and evidence in the complete record before us, we find that Petitioner shows that all recitations in claims 5, 21, and 22 are taught by Hargrove, Williams, and London. Additionally,

we determine that Petitioner has offered articulated reasoning with a rational underpinning as to why one of ordinary skill in the art would have combined the teachings of Hargrove, Williams, and London in the manner proposed by Petitioner. Accordingly, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 5, 21, and 22 are obvious over Hargrove, Williams, and London.

F. Hargrove and Enablement

Patent Owner asserts that “[e]ach of the independent claims includes various limitations relating [to] determining the distance to an intended target and displaying an appropriate aim indicator that *are not enabled by Hargrove*.” PO Resp. at 53 (emphasis added). Patent Owner, more specifically, points to the following limitations: “a ‘range finder’ that determines ‘a range to target,’” “‘determining a precise aiming position based on the shooting distance,’” “‘displaying an aim indicator . . . that allows an archer to take dead aim at the target,’” “a sensor system that is configured to determine ‘a range to target’ and ‘multiple aim indicators’ that can be ‘selectively displayed’ based on ‘the range to target.’” *Id.* at 53–54. Regarding dependent claims, Patent Owner also asserts “[l]ack of *enablement* is especially evident with respect to claims 5 and 21, which both expressly recite a targeting device and the alignment of that targeting sight with a peep sight while the bow is at full draw.” *Id.* at 54 (emphasis added).

Patent Owner bases its lack of enablement argument on an assertion that Hargrove does not disclose adequately “a default targeting sight.” *Id.* at 51. Patent Owner, more specifically, points to description in the ’551 Patent Specification of a set up procedure. *Id.* (citing Ex. 1001, 10:58–11:14).

In its Reply, Petitioner again points to Hargrove’s disclosure of calibration procedures, as well as teachings in the asserted art of the recitations in the claims relating to aligning. Pet. Reply 19–22; Ex. 1013 ¶¶ 32–37. Petitioner also points to deposition testimony of both Dr. Cross and Dr. Zavislan testifying that one having ordinary skill in the art would have known how to align Hargrove’s laser with the target. Pet. Reply 20–21 (Ex. 2007, 63:23–64:19, 66:9–22, 71:7–19; Ex. 1014, 71:9–10, 71:17–73:6).

In its Sur-reply, Patent Owner asserts that Petitioner “misapprehends Patent Owner’s enablement argument” and that Patent Owner’s argument is consistent with well-settled law that “a reference is prior art for all that it teaches.” PO Sur-reply 5. We, however, agree with Petitioner that Patent Owner’s enablement argument is based on Hargrove not being enabled with respect to range finding and aiming a range finder, but contrary to Patent Owner’s arguments, Hargrove discloses range finder 140 and 179, as well as details regarding the components and operation of those range finders, including operation by an archer involving precise aiming under various shooting conditions. *See supra* §§ III.D.3, III.D.6. Hargrove also discloses a “targeting sight” as recited in claims 5, 21, and 22. *See supra* § III.E.

Patent Owner also asserts that Petitioner “wrongly attempts to shift the burden of proof to the Patent Owner” and that “Patent Owner has satisfied its burden of production.” PO Sur-reply 5–6. We disagree that Patent Owner has satisfied its burden of production because Hargrove discloses range finder 140 and 179, as well as details regarding the components and operation of those range finders, including operation by an archer involving precise aiming under various shooting conditions (*see*

supra §§ III.D.3, III.D.6) and, further, Petitioner has demonstrated unpatentability. To the extent Patent Owner asserts that the asserted art does not teach the aforementioned claim recitations, such as “targeting sight,” we discuss why we find that Patent Owner’s assertions and evidence do not undermine Petitioner’s showing above. *See, e.g., supra* § III.E.

Additionally, prior art publications and patents are presumed to be enabled. *In re Antor Media Corp.*, 689 F.3d 1282, 1287–88 (Fed. Cir. 2012); *Impax Labs., Inc. v. Aventis Pharm., Inc.*, 545 F.3d 1312, 1316 (Fed. Cir. 2008); *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1354–55 (Fed. Cir. 2003).

Although not necessary for our determination because the set-up procedure in the ’551 Patent is not recited in the challenged claims, regarding Hargrove’s description of a set up procedure that is similar to that described in the ’551 Patent, we agree with Petitioner and credit and give significant weight to the testimony of Dr. Cross because Petitioner’s contentions and Dr. Cross’s testimony are consistent with the evidence of record. For instance, Hargrove describes calibrating its range finder. Ex. 1004, 7:12–29 (describing a subroutine for calibrating the rangefinder for non-level ground operation), 10:41–47 (describing a positioning mechanism used to locate a sight indicator to a predefined point), 14:19–30 (describing acquiring the point-to-point distance and elevation angle), 16:2–27 (describing acquiring the point-to-point distance and elevation angle). Also, the deposition testimony of Dr. Cross is consistent with Petitioner’s contentions. Ex. 2007, 63:23–64:19 (testifying in Hargrove’s LCD, an initial cross hair would light up to give the initial aiming point so the archer

could aim at the target, and then it would be corrected), 66:9–22 (testifying that Hargrove discloses an initial aiming point and then correction).¹⁸

For the reasons given, we agree with Petitioner’s contentions that Hargrove is enabling, and we credit and give significant weight to the testimony of Dr. Cross (*see, e.g.*, Pet Reply 19–22; Ex. 1013 ¶¶ 32–37) over the declaration testimony of Dr. Zavislan (*see, e.g.*, Ex. 2009 ¶¶ 11–19) because Petitioner’s contentions and Dr. Cross’s testimony are consistent with the evidence of record. Also, we find that Patent Owner’s arguments regarding lack of enablement do not undermine Petitioner’s showing with respect to the challenged claims.

IV. CONCLUSION¹⁹

For the reasons given, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 2, 4, 5, 7–9, 12, 13, and 20–26 of the ’551 Patent are unpatentable.

In summary:

¹⁸ Furthermore, that Hargrove discloses alternative embodiments does not negate Hargrove’s disclosure of mounting the range finder to the bow. *See, e.g.*, Ex. 1004, 13:29–38.

¹⁹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

Claims Challenged	35 U.S.C.	References/ Basis	Claims Shown Unpatent- able	Claims Not shown Unpatent- able
1, 2, 7, 8, 12, 13, 20, 23–26	§ 103	Hargrove, Williams	1, 2, 7, 8, 12, 13, 20, 23–26	
4, 5, 9, 21, 22	§ 103	Hargrove, Williams, London	4, 5, 9, 21, 22	
Overall Outcome			1, 2, 4, 5, 7– 9, 12, 13, 20– 26	

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1, 2, 4, 5, 7–9, 12, 13, and 20–26 of the '551 Patent have been proven to be unpatentable; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2018-01137
Patent 8,316,551 B2

PETITIONER:

Jennifer C. Bailey
Adam P. Seitz
Jonathan L. Hines
ERISE IP, P.A.
jennifer.bailey@eriseip.com
adam.seitz@eriseip.com
jonathan.hines@eriseip.com

PATENT OWNER:

Michael T. Griggs
Timothy Newholm
BOYLE FREDRICKSON S.C.
mtg@boylefred.com
ten@boylefred.com

Andrew L. Jagenow
Ryan James Fletcher
George C. Lewis
MERCHANT & GOULD P.C.
ajagenow@merchantgould.com
rfletcher@merchantgould.com
glewis@merchantgould.com