

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TAYLOR MADE GOLF COMPANY, INC.,
Petitioner,

v.

PARSONS XTREME GOLF, LLC,
Patent Owner.

Case IPR2018-00675
US Patent No. 9,199,143 B1

Before NEIL T. POWELL, TIMOTHY J. GOODSON, and
SCOTT C. MOORE, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Taylor Made Golf Company, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–20 of U.S. Patent No. 9,199,143 B1 (Ex. 1001, “the ’143 Patent”). Parsons Xtreme Golf, LLC (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”) to the Petition. An *inter partes* review may not be instituted unless “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). If an *inter partes* review is instituted, the proceeding encompasses all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348 (2018).

Upon consideration of the Petition and Preliminary Response, we find that the information presented in the Petition demonstrates a reasonable likelihood that Petitioner will prevail in showing the unpatentability of at least one challenged claim. Accordingly, we institute an *inter partes* review as to claims 1–20 of the ’143 Patent on all grounds raised in the Petition.¹

Our factual findings and conclusions at this stage of the proceeding are preliminary and based on the record developed thus far (prior to Patent

¹ In at least some cases, the evidence cited in the Petition and Preliminary Response expands notably on the arguments presented in the briefs. The parties are reminded that each of their contentions and supporting arguments must be set forth completely in the briefs. Attempts to incorporate by reference evidence or arguments from other papers are improper and will result in such evidence or arguments not being considered. 37 C.F.R. § 42.6(a)(3). Attempts to incorporate materials by reference also may be treated as improper attempts to circumvent the Board’s type-volume limits. *See* 37 C.F.R. § 42.24(a)(1).

Owner's Response and Petitioner's Reply). This is not a final decision as to the patentability of any claim. Any final decision will be based on the complete record, as fully developed during the course of this trial.

A. *Related Proceedings*

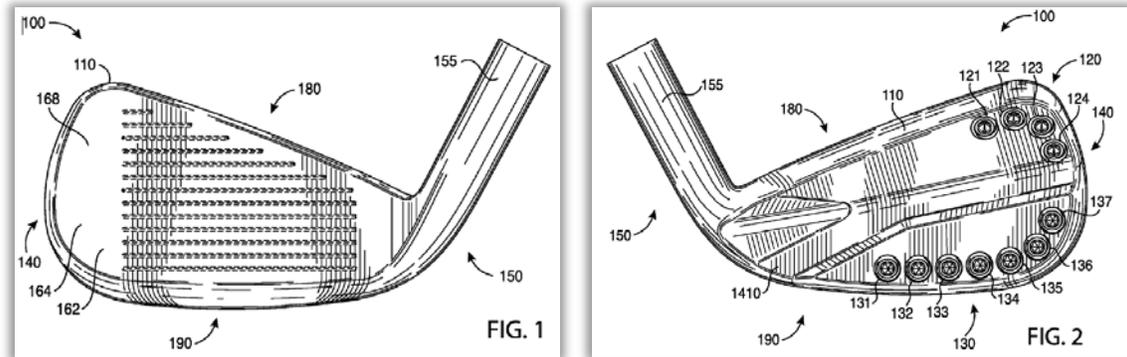
The parties indicate that the '143 Patent is the subject of the following district court cases: *Parsons Xtreme Golf, LLC v. Taylor Made Golf Company, Inc.*, No. 2:17-cv-03125-JJT (D. Ariz., filed Sept. 12, 2017, ongoing); *Parsons Xtreme Golf, LLC v. Worldwide Golf Enterprises, Inc.*, No. 8:17-cv-01602-JLS-DFM (C.D. Cal., filed Sept. 14, 2017, stayed); and *Parsons Xtreme Golf, LLC v. Golf & Tennis Pro Shop, Inc.*, No. 1:17-cv-06672 (N.D. Ill., filed Sept. 15, 2017, stayed). Pet. 1–2; Paper 4, 1.

Patent Owner also indicates that Petitioner is challenging related patents in three other proceedings before the Board: Case No. IPR2018-00702 (U.S. Patent 8,961,336), Case No. IPR2018-00768 (U.S. Patent 9,345,938), and Case No. IPR2018-00769 (U.S. Patent 9,346,203). Paper 4, 1.

B. *The '143 Patent*

The '143 Patent relates to golf club heads. Ex. 1001, 1:23–25. According to the Specification, multiple materials (e.g., steel-based, tungsten-based, and titanium-based materials) may be employed in order to optimize the center of gravity (“CG”) and/or moment of inertia (“MOI”) of golf club heads in order to impart a certain trajectory and spin rate to a golf ball. *Id.* at 1:29–35.

Figures 1 and 2 of the '143 Patent are reproduced below.



Figures 1 (above, left) and 2 (above, right) depict front and rear views, respectively, of one embodiment of golf club head 100. Ex. 1001, 1:39–43. Body portion 110 of the depicted club head includes toe portion 140, heel portion 150, top portion 180, sole portion 190, front portion 160, and back portion 170. *Id.* at 2:25–33. Figure 2 also depicts first set of weight portions 120 (i.e., weight portions 121–124), and second set of weight portions 130 (i.e., weight portions 131–137). *Id.* at 2:25–30. The Specification discloses that the weight portions may be made of a different material than the club head body (*id.* at 2:33–51), and that the two sets of weight portions may have different or similar physical properties (*id.* at 4:15–17).

As depicted in Figures 13 and 14, the weight portions may be cylindrical in shape, and may be mounted in cylindrical ports located on back portion 170 of golf club head 100.

Figure 13 of the '143 Patent is reproduced below.

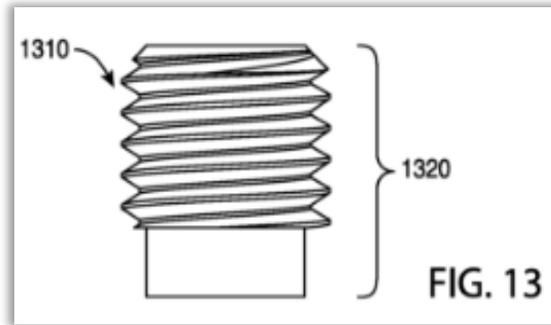


Figure 13 depicts cylindrical weight portion 130 with threads 1310 that may secure the weight portion in a weight port located in back portion 170 of the disclosed golf club head. Ex. 1001, 1:64–65, 4:23–35, 4:52–56.

Figure 14 of the '143 Patent is reproduced below.

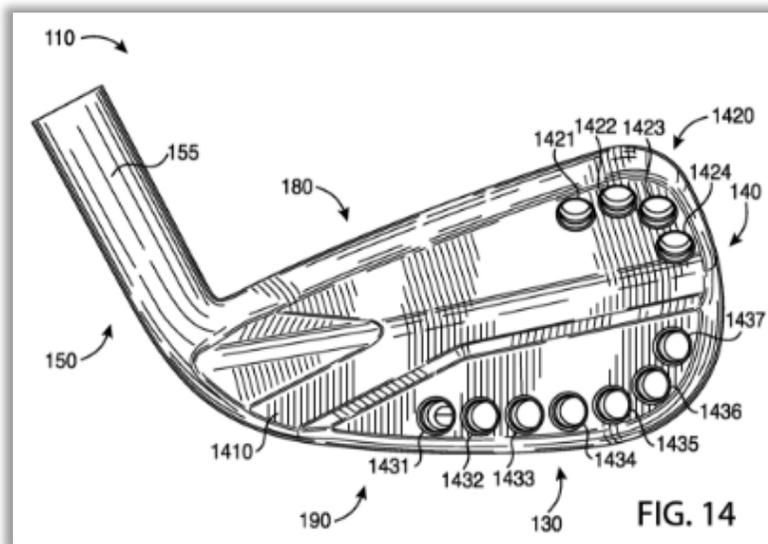


Figure 14 depicts threaded weight ports 1421–24 and 1431–37, located in the back portion 170 of body portion 110. *Id.* at 1:66–67, 5:46–55.

and configured to receive at least one weight portion of the plurality of weight portions,
wherein the first set of cylindrical weight ports is located at or proximate to at least one of the top portion or the toe portion, and the second set of cylindrical weight ports is located at or proximate to at least one of the sole portion or the toe portion,
wherein any two adjacent cylindrical weight ports of the first set of cylindrical weight ports are separated by less than the port diameter, and any two adjacent cylindrical weight ports of the second set of cylindrical weight ports are separated by less than the port diameter, and
wherein the interior cavity is filled with an elastic polymer material.

Ex. 1001, 12:18–43.

D. *Evidence of Record*

Petitioner submits the following references and declaration (Pet. 3–4):

Reference or Declaration	Exhibit No.
U.S. Patent No. 8,088,025 B2 (Iss. Jan. 3, 2012) (“Wahl”)	Ex. 1004
U.S. Patent No. 6,811,496 B2 (Iss. Nov. 2, 2004) (“Wahl ’496”) ²	Ex. 1005
Japanese Published Patent Application No. H10-277187 (Pub. Oct. 20, 1998) (“Takahashi”)	Ex. 1006
Japanese Published Patent Application No. H10-127832 (Pub. May 19, 1998) (“Oku”)	Ex. 1007

² As discussed below, Petitioner alleges that Wahl incorporates by reference the entire content of Wahl ’496, and that the disclosure of Wahl ’496 is thus part of the disclosure of Wahl. Pet. 16. Petitioner does not cite Wahl ’496 as a separate prior art reference.

Reference or Declaration	Exhibit No.
Japanese Published Patent Application No. 2004-313777 (Pub. Nov. 11, 2004) (“Mizuno”)	Ex. 1008
U.S. Patent No. 7,744,486 B2 (Iss. June 29, 2010) (“Hou”)	Ex. 1009
U.S. Patent Application Publication No. 2010/0304887 A1 (Pub. Dec. 2, 2010) (“Bennett”)	Ex. 1010
Declaration of George Thomas Mase, Ph.D. In Support of Petition for <i>Inter Partes</i> Review of U.S. Patent 9,199,143 (“Mase Decl.”)	Ex. 1003

Patent Owner submits the Declaration of Steven M. Nesbit, Ph.D. in Support of Patent Owner PXG’s Preliminary Response to Petition for Inter Partes Review of U.S. Patent 9,199,143 (Ex. 2001).

E. *Asserted Grounds of Unpatentability*

Petitioner asserts that the challenged claims are unpatentable on the following grounds (Pet. 4):

Ground	Claim(s)	Basis	References
1	1–7, 9–13, 15–19	35 USC § 103	Wahl, Takahashi
2	8, 14, 20	35 USC § 103	Wahl, Takahashi, Hou
3	15, 17–19	35 USC § 103	Mizuno, Oku
4	16	35 USC § 103	Mizuno, Oku, Bennett
5	20	35 USC § 103	Mizuno, Oku, Hou

II. ANALYSIS

A. *Principles of Law*

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are “such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which such subject matter pertains.” 35 U.S.C. § 103(a). The question of obviousness under 35 U.S.C. § 103 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. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). “While the sequence of these questions might be reordered in any particular case, the factors continue to define the inquiry that controls.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 404, 407 (2007).

B. *Level of Ordinary Skill in the Art*

Petitioner asserts that a person having ordinary skill in the art to which the ’143 Patent pertains would have had “(1) at least a bachelor’s degree in mechanical engineering, materials science engineering, physics, or equivalent coursework, and (2) at least one year of experience researching or developing golf-club heads, and/or methods of their manufacture.” Pet. 6–7. Patent Owner does not dispute Petitioner’s proposed definition of one having ordinary skill in the art. Prelim. Resp. 4.

On this record, and based on our review of the ’143 Patent, we adopt and apply Petitioner’s formulation regarding the level of ordinary skill in the art. The cited prior art references also reflect the appropriate level of skill at

the time of the claimed invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). On this record, we find that the level of appropriate skill reflected in these references is consistent with Petitioner’s formulation regarding the level of ordinary skill in the art.

C. *Claim Construction*

The claims of an unexpired patent are interpreted using the broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–45 (2016).

Petitioner proposes constructions for the following claim terms: “weight portions” (independent claims 1, 9, 15), “set of cylindrical weight portions” (independent claim 15); “set of cylindrical weight ports” (independent claims 1, 9); “top portion,” “toe portion,” “sole portion” (independent claims 1, 9, 15); “heel portion” (independent claim 9); “top-and-toe transition region,” “sole-and-toe portions region” (independent claim 15). Pet. 7–12.

Patent Owner disputes Petitioner’s proposed constructions of “weight portions” and “set of cylindrical weight [portions/ports],” but does not dispute Petitioner’s other claim construction positions at this stage of the proceeding.

We determine that it is unnecessary to provide explicit constructions of any of the disputed claim terms in order to resolve the issues in dispute at this stage of the proceeding. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (claim terms need to be construed “only to the extent necessary to resolve the controversy” (quoting

Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. *Objective Indicia of Nonobviousness*

Patent Owner argues that “extensive secondary indicia” contradict Petitioner’s arguments regarding obviousness, and faults Petitioner for failing to preemptively address this evidence in its Petition. Prelim. Resp. 48–49. Patent Owner does not provide a persuasive explanation of why Petitioner was required to address in its Petition arguments that Patent Owner did not raise until after the Petition was filed.

At the institution stage, we merely ascertain, based on a limited record, whether there is a reasonable likelihood of that Petitioner will prevail in showing unpatentability. *See* 35 U.S.C. § 314(a). At this stage, the record regarding secondary considerations is particularly limited because Petitioner has not yet had an opportunity to respond to Patent Owner’s arguments and evidence regarding secondary considerations. We nevertheless reviewed and considered Patent Owner’s evidence of secondary considerations. Whenever this Decision indicates that Petitioner has demonstrated a reasonable likelihood of prevailing as to a claim or ground, that statement should be understood to indicate that Petitioner’s evidence is sufficient to meet the lower evidentiary burden that applies at the institution stage notwithstanding Patent Owner’s secondary consideration evidence.

E. *Asserted Grounds of Unpatentability*

1. *Alleged Obviousness of Claims 1–7, 9–13, and 15–19 over Wahl and Takahashi*

For the reasons discussed below, Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claims 1–7, 9–13, and 15–19, would have been obvious over Wahl and Takahashi.

a. *Wahl*

Wahl discloses “a hollow iron-type golf club head . . . including a heel portion, a sole portion, a toe portion, a topline portion, a front portion, a rear portion, and a striking face.” Ex. 1004, 1:40–42. Within the club is an “enclosed cavity” that encloses “filler material.” *Id.* at 1:43–48.

Figure 1B of Wahl is reproduced below.

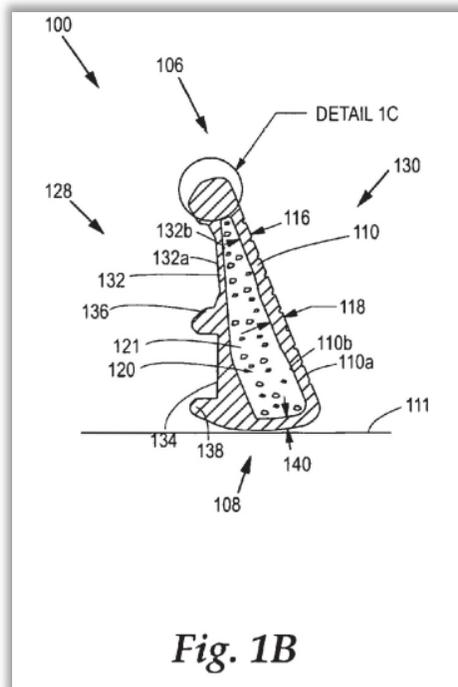


Figure 1B depicts a cross sectional side view of hollow iron golf club head 100. Ex. 1004, 3:49:50. The depicted golf club head includes striking face 110, back wall 132, and cavity 120 filled with filler material 121. *Id.* at

4:1–17. Wahl discloses that the filler material may be a “viscoelastic elastomer” or “styrene/isoprene block copolymer.” *Id.* at 4:51–58.

Petitioner, citing language in Wahl that incorporates Wahl ’496 “in its entirety,” contends that the Wahl reference should be construed as including the entire disclosure of Wahl ’496. Pet. 16 (citing Ex. 1004, 9:51–57).

Wahl ’496 discloses a golf club head that includes “weighting elements,” such as “mass altering pins.”

Figure 5B of Wahl ’496 is reproduced below.

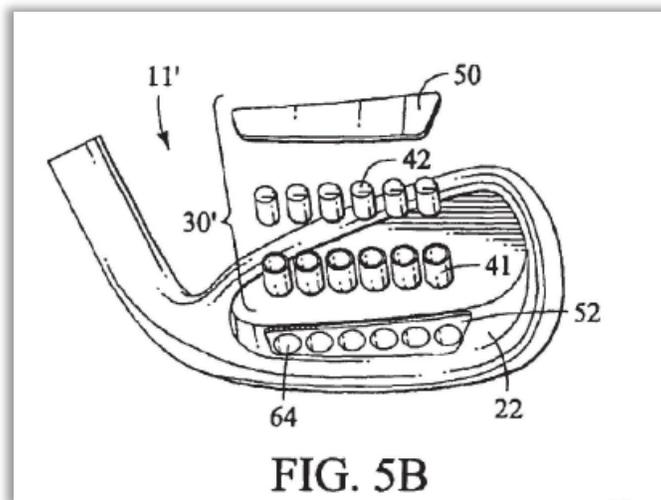


Figure 5B is an exploded view of a golf club head. Ex. 1005, 4:6–7. The depicted golf club head includes insert assembly 30’, which includes badge 50, pins 42, and sleeves 41. *See* Ex. 1005, 5:21–24, 6:29–32, 7:18–19. The golf club head also includes apertures 64, which are configured to receive the pins 42 and sleeves 41 of insert assembly 30’. *See id.* at 6:24–28.

b. *Takahashi*

Takahashi discloses a golf club head in which the weight distribution can be fine-tuned by inserting or removing threaded weights from screw holes. Ex. 1006 ¶ 1.

Figure 3 of Takahashi is reproduced below.

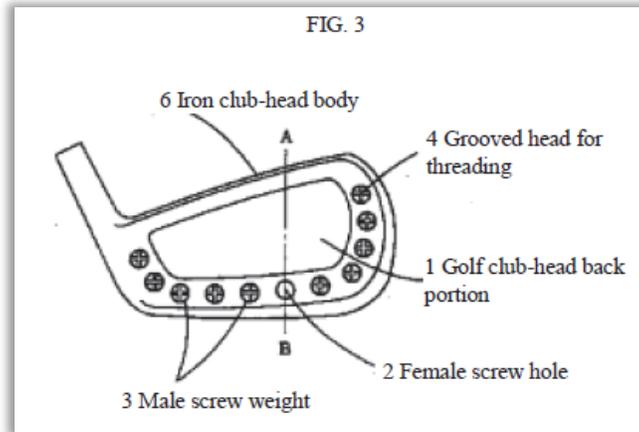


Figure 3 depicts a rear elevation of an iron golf club head. Ex. 1006 ¶ 8. Female screw holes 2 and male screw weights 3 are located along the periphery of the rear side of the depicted golf club head. *See Id.*, Fig. 2.

c. *Independent Claims 1 and 9*

Petitioner asserts that Wahl discloses a “golf club head,” “body portion,” and “interior cavity” filled with an “elastic polymer material” of the types recited in claims 1 and 9. *See* Pet. 35–37, 43–46. Petitioner also provides declaration testimony supporting its contentions. *See* Ex. 1003 ¶¶ 100, 106–108, 119.

With respect to the recited “weight portions” and “weight ports,” Petitioner points to a disclosure in Wahl that “weighting elements, cartridges, and/or inserts” such as the “mass altering pins or cartridge weighting elements” of Wahl ’496 may be used for “CG placement, vibration control or damping, or acoustic control or damping.” Pet. 32 (citing Ex. 1004, 9:51–57; Ex. 1003 ¶¶ 101–105, 108–118); 43–44 (applying same analysis to claim 9). Petitioner asserts that one of ordinary skill in the art would have found it “obvious to rearrange Wahl’s weights in the

configuration shown in Takahashi, or replace Wahl’s weights with the weights and configuration of Takahashi,” and that doing either of these things would have resulted in an arrangement of weight portions and weight ports that satisfied the remaining limitations of claims 1 and 9. Pet. 32–35, 37–42 (citing Ex. 1003 ¶¶ 96–99), 44–46 (applying same analysis to claim 9). Petitioner asserts that a skilled artisan would have been motivated to modify Wahl’s pin weights into the configuration of Takahashi because Wahl teaches the desirability of optimizing center of gravity (“CG”) and moment of inertia (“MOI”), and because Takahashi’s arrangement of weights along the perimeter of the club head was a known way of obtaining an optimal weight distribution. Pet. 30–31. Petitioner asserts that one of ordinary skill would have been motivated to combine Takahashi’s arrangement of removable screw weights with Wahl’s club because doing so would advantageously have “allowed for quicker, ‘fine-tune weight adjustment.’” *Id.* at 31 (citing Ex. 1006 ¶¶ 4–5).

Patent Owner does not dispute that Wahl and Takahashi would have taught or suggested many of the limitations of claims 1 and 9 (*see* Prelim. Resp. 24–25), and we find Petitioner has made adequate showings regarding the undisputed limitations. Patent Owner’s arguments that one of ordinary skill in the art would not have combined the teachings of Wahl and Takahashi, and that such a combination would not have taught or suggested certain disputed claim limitations, are addressed below.

Patent Owner argues that there are four reasons why a skilled artisan would not have combined Wahl and Takahashi in the manner proposed by Petitioner: (1) that Petitioner’s rationale is too vague and does not account for the “infinite number of possible combinations” of port locations, weight

portion masses, etc. (Prelim. Resp. 9–14); (2) that Wahl’s club was not “ready for improvement” and that the proposed modifications would not have yielded predictable results or improvements (*id.* at 14–16); (3) that one of ordinary skill would not have combined Takahashi’s cavity-back club design with Wahl’s hollow body design (*id.* at 16–19); and (4) that Wahl and Wahl ’496 should not be considered a single reference (*id.* at 19–24). These arguments are not persuasive.

On this record, it appears that alleged complexities of golf club design would have motivated one of ordinary skill in the art to look to *known* ways of improving CG and MOI—such as those disclosed in Takahashi—rather than starting from scratch. We are not persuaded that the alleged complexities identified by Patent Owner would have *dissuaded* a skilled artisan from attempting to combine the teachings of Wahl and Takahashi. Moreover, we find that one of ordinary skill in the art would have had the knowledge, experience, and tools necessary to balance the numerous competing considerations and variables relevant to golf club design. Indeed, Patent Owner concedes that such a person would have had access to computer-aided design (“CAD”) software, finite element analysis (“FEA”) software, and computer-controlled manufacturing (“CNC”) tools that would have allowed designing the properties of a golf club head to precise specifications. *See* Prelim. Resp. 13. Also, Patent Owner has not offered a persuasive explanation of why the existence of other mass-related variables would have dissuaded an ordinarily skilled artisan from seeking to improve CG and MOI.

We also are not persuaded by Patent Owner’s argument that Wahl’s club was not ready for improvement and that the proposed modifications

would not have yielded predictable results or improvements. Patent Owner does not provide any persuasive explanation of its contention that there would have been “no need for improvement” because Wahl and Takahashi somehow disclose optimized designs. *See* Prelim. Resp. 15 (citing Ex. 2001 ¶ 77). We also are not persuaded that the proposed modification would have required undue experimentation. As discussed above, Patent Owner concedes that a skilled artisan would have had access to computerized tools that would have allowed precisely calculating the characteristics of a new golf club design. Patent Owner additionally does not address Petitioner’s contention that incorporating Takahashi’s adjustable weights advantageously would have “allowed for quicker, ‘fine-tune weight adjustment.’” *Id.* at 31 (citing Ex. 1006 ¶¶ 4–5).

Patent Owner’s argument that a person of ordinary skill in the art would not have combined Takahashi’s cavity-back design with Wahl’s hollow body design is not persuasive because it misconstrues Petitioner’s contentions. Petitioner does not propose modifying Wahl’s club head design to incorporate Takahashi’s cavity-back design. We also note that Wahl ’496 discloses a golf club head that includes *both* an internal cavity and a cavity-back design. *See* Ex. 1005, Fig. 5A.

Patent Owner further fails to demonstrate persuasively that Wahl and Wahl ’496 should not be treated as a single reference. Wahl discloses that the disclosed club head may employ “weighting elements, cartridges, and/or inserts . . . used for CG placement, vibration control or damping, or acoustic control or damping.” Ex. 1004 9:51–54. Wahl incorporates the entire disclosure of Wahl ’496 using clear and unambiguous language: “For example, U.S. Pat. No. 6,811,496, *incorporated herein by reference in its*

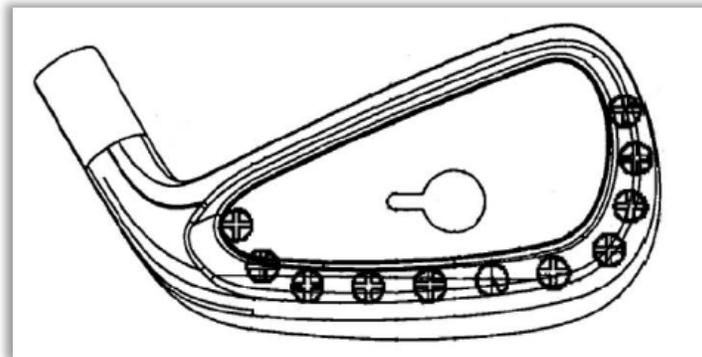
entirety, discloses the attachment of mass altering pins or cartridge weighting elements.” *Id.* at 9:54–57 (emphasis added). Our reviewing court has held that similar language was sufficient to incorporate by reference the disclosure of a separate patents. *See, e.g., Harari v. Lee*, 656 F.3d 1331, 1335 (Fed. Cir. 2011) (statement in specification that “[t]he disclosures of the two patent applications are hereby incorporate[d] by reference” was “broad and unequivocal” language sufficient to incorporate by reference the entire disclosures of the previously-specified applications). Patent Owner has not provided a persuasive explanation in support of its contention that this language is somehow ambiguous. *See Prelim. Resp.* 19–24.

We find Petitioner has made a sufficient showing at this stage of the proceeding that one of ordinary skill in the art would have had reason to combine the teachings of Wahl and Takahashi in the manner set forth in the Petition. In particular, Petitioner has made a sufficient showing that rearranging Wahl’s pin weights into the configuration shown in Takahashi would have constituted the “use of a known technique to improve similar devices in a similar way” (*KSR*, 550 U.S. at 416) because Takahashi’s arrangement of weights along the perimeter of the club head was a known way to optimize the weight distribution of a club head (*see Pet.* 30). Petitioner also has made a sufficient showing that replacing Wahl’s pin weights with Takahashi’s screw weights would have been a simple substitution of one known prior art element for another that would have done no more than yield a predictable result. *KSR*, 550 U.S. at 416; *Pet.* 31.

Patent Owner additionally argues that Wahl and Takahashi, when combined in the manner proposed by Petitioner, would not have taught or suggested ports located “along a periphery of the back portion” as recited in

claim 1, “a back portion with . . . weight ports along a periphery of the hollow body portion” as recited in claim 9, or port diameters spaced as required by claims 1 and 9. *See* Prelim. Resp. 24–30. These arguments are unpersuasive.

As discussed above, Petitioner asserts that one of ordinary skill in the art would have found it “obvious to rearrange Wahl’s weights in the configuration shown in Takahashi, or replace Wahl’s weights with the weights and configuration of Takahashi.” Pet. 32–35, 44–46. The Petition includes an illustration, reproduced below, depicting where Wahl’s weights or Takahashi’s screw weights would have been located in such a combination (*see id.* at 31).



The above illustration depicts the screw weight and screw hole (i.e., “port”) arrangement of Takahashi (Ex. 1006 ¶ 8, Fig. 4) superimposed onto the “rear view of a golf club head” depicted in Figure 4 of Wahl (Ex. 1004, 3:1–2, Fig. 4). Pet. 31. It is readily apparent that in Petitioner’s proposed combination, the ports would be located along the periphery of the back portion of Wahl’s club head. We also find unpersuasive Patent Owner’s related assertion that the ports Petitioner identifies as constituting the recited “first set” and “second set” are not “grouped” as required by the claims. *See* Prelim. Resp. 26–28. The claims do not recite any particular grouping of

ports, and Patent Owner has not proposed any construction of the claims that would require a “set” of ports be grouped in any particular way. *See id.* at 7–8, 26–28.

Regarding the recited spacing of port diameters, Petitioner presents declaration testimony that the screw holes Petitioner identifies as corresponding to the first and second sets of weight ports would have been separated “by less than the port diameter,” as required by claims 1 and 9. Pet. 41–42 (citing Ex. 1003 ¶¶ 117–18); 46 (citing Ex. 1003 ¶¶ 139–40). Patent Owner’s declarant disagrees with these opinions; but at this stage of the proceeding, we view the disputed declarant testimony in the light most favorable to Petitioner. 37 C.F.R. § 42.108(c).

We acknowledge Patent Owner’s argument that undimensioned patent drawings cannot necessarily be relied on as disclosing specific dimensions or ratios. *See* Prelim. Resp. 28–29. However, our reviewing court also has held that experts may sometimes opine that undimensioned drawings would have disclosed certain proportions to those of skill in the art. *See, e.g., Paice LLC v. Ford Motor Co.*, 772 Fed. Appx. 1015, 1022 (Fed. Cir. 2018) (nonprecedential). In any event, Petitioner has provided testimony that a skilled artisan would have had reason to position the ports less than a port diameter apart even if this arrangement were not disclosed in Takahashi. *See* Ex. 1003 ¶ 118. We accept this testimony at this stage of the proceeding. 37 C.F.R. § 42.108(c). We find Petitioner has made a sufficiently persuasive showing at this stage of the proceeding that Wahl and Takahashi would have taught or suggested the disputed limitations of claims 1 and 9.

In sum, Petitioner has shown sufficiently at this stage of the proceeding that a skilled artisan would have had reason to combine the teachings of Wahl and Takahashi in the manner set forth in the Petition, and that the resulting combination would have taught or suggested each limitation of claims 1 and 9. Accordingly, Petitioner has shown a reasonable likelihood of prevailing in demonstrating that claims 1 and 9 would have been obvious over Wahl and Takahashi.

d. *Independent Claim 15*

Independent claim 15 is similar to claims 1 and 9, and Petitioner's contentions regarding claim 15 are substantively similar to its contentions regarding claims 1 and 9. *See* Pet. 49–53. Petitioner's contentions regarding claim 15 also are supported by declaration testimony. Ex. 1003 ¶¶ 141–153.

Patent Owner does not raise any additional arguments regarding Petitioner's rationale for combining the teachings of Wahl and Takahashi, and does not dispute that Wahl and Takahashi would have taught or suggested most limitations of claim 15. *See* Prelim. Resp. 8–35. For the same reasons discussed above, we find Petitioner has made a sufficient showing that one of ordinary skill in the art would have had reason to combine the teachings of Wahl and Takahashi in the manner set forth in the Petition. We also find that Petitioner has adequately shown that such a combination would have taught or suggested each of the *undisputed* limitations of claim 15. The disputed limitations are discussed below.

Patent Owner argues that Wahl and Takahashi would not have taught or suggested two “sets” of weight portions “coupled to the hollow body portion” of the recited golf club head. Prelim Resp. 30–34. This argument is not persuasive. As discussed above, Wahl discloses a golf club head with

an enclosed cavity (i.e., a hollow body). *See, e.g.*, Ex. 1004, Fig. 5. The Petition argues that a skilled artisan would have found it “obvious to rearrange Wahl’s weights in the configuration shown in Takahashi, or replace Wahl’s weights with the weights and configuration of Takahashi.” Pet. 44. The Petition also includes an illustration (reproduced above) depicting the weights and weight ports located along the periphery of the back portion of Wahl’s hollow golf club head. *See* Pet. 31. This evidence is adequate at the institution stage to demonstrate that Wahl and Takahashi would have taught or suggested weight portions “coupled to the hollow body portion” of a golf club head. Patent Owner’s argument that these weight portions would not have satisfied the “first set” and “second set” limitations is not persuasive because, as discussed above, Patent Owner has not offered any construction of the claim language that would exclude the allegedly arbitrary sets of weights identified by Petitioner.

Patent Owner also argues that Wahl and Takahashi would not have taught or suggested a first set of weight portions having a “total mass [that] is less than” the total mass of the second set of weight portions, “wherein the second set of . . . weight portions is located below a horizontal midplane of the golf club head,” as recited in claim 15. Prelim. Resp. 34–36. Petitioner contends that a skilled artisan would have had reason to make the total mass of the first set of weight portions (the weight portions located at the recited “top-and-toe” transition region and above the HMP) less than that of the second set of weight portions (located at the recited “sole-and-toe” portions region and below the HMP) because doing so advantageously would have lowered the CG of the club. Pet. 51 (citing Ex. 1003 ¶¶ 28–30, 38–49, 152). Petitioner also contends that there are only three possibilities for the total

masses of the two sets of weight portions: (1) they have the same total mass, (2) the first set of weight portions has less total mass, or (3) the second set of weight portions has less total mass. Pet. 51 (citing Ex. 1003 ¶ 163).

According to Petitioner, each of this “finite number of . . . predictable solutions” would have been obvious to one of ordinary skill in the art. Pet. 51 (quoting *KSR*, 550 U.S. at 421).

We acknowledge that Patent Owner’s declarant disagrees with these opinions; but at this stage of the proceeding, we view the disputed the disputed testimony in the light most favorable to Petitioner. 37 C.F.R. § 42.108(c). Accordingly, Petitioner has made a sufficient showing at this stage in the proceeding that Wahl and Takahashi would have taught or suggested a first set of weight portions (located above the HMP) having a “total mass [that] is less than” the total mass of the second set of weight portions located below the HMP.

For the foregoing reasons, Petitioner has shown a reasonable likelihood of prevailing in demonstrating that claim 15 would have been obvious over Wahl and Takahashi.

e. *Dependent Claims 2–7, 10–13, and 16–19*

The Petition contains detailed explanations, supported by declaration testimony, of why Wahl and Takahashi would have taught or suggested each additional limitation recited in dependent claims 2–7, 10–13, and 16–19. *See* Pet. 53–63; Ex. 1003 ¶¶ 154–70. Patent Owner does not raise any additional disputes regarding these claims. *See* Prelim. Resp. 24–25.

On this record, we find Petitioner’s arguments and evidence sufficient to show a reasonable likelihood that Petitioner will prevail in demonstrating

that claims 2–7, 10–13, and 16–19 would have been obvious over Wahl and Takahashi.

2. *Alleged Obviousness of Claims 8, 14, and 20 over Wahl, Takahashi, and Hou*

a. *Hou*

Hou discloses a golf club head wherein “the thickness of the striking plate is substantially between 0.76 mm and 2.25 mm.” Ex. 1009, 1:55–59.

b. *Claims 8, 14, and 20*

Petitioner contends that the striking plate (i.e., “face portion”) of Hou’s golf club head satisfies the thickness limitation recited in dependent claims 9, 14, and 20, and that one of ordinary skill in the art would have had reason to design Wahl’s golf club head to include a face plate at least as thin as that disclosed in Hou. Pet. 64–65. Petitioner supports its contentions with declaration testimony. *See* Ex. 1003 ¶¶ 171–75. Patent Owner does not raise any additional disputes regarding claims 8, 14, or 20. *See* Prelim. Resp. 36.

On this record, we find Petitioner’s arguments and evidence sufficient to show a reasonable likelihood that Petitioner will prevail in demonstrating that claims 8, 14, and 20 would have been obvious over Wahl, Takahashi, and Hou.

3. *Alleged Obviousness of Claims 15 and 17–19 over Mizuno and Oku*

a. *Mizuno*

Mizuno discloses an iron golf club head having a hollow portion that may be filled with a polyurethane resin foam. Ex. 1008, Abstract.

Figure 3 of Mizuno is reproduced below.

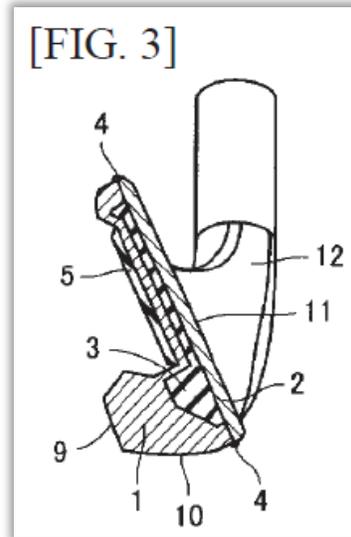


Figure 3 is a cross-sectional view of an iron golf club head. *Id.* ¶ 162. The depicted golf club head includes body portion 1, face part 2, and hollow portion 3, and back portion 9. *Id.* Mizuno discloses that hollow portion 3 is filled with an “elastic body” formed from “polyurethane resin.” *Id.* ¶ 109.

Mizuno also discloses that the back portion of the golf club head may include “mass body 6 [that] is made of a tungsten alloy” located along the sole portion of the golf club head. *See* Ex. 1008 ¶ 97, Fig. 4.

b. *Oku*

Oku discloses an iron golf club set that is designed to provide improved aim. Ex. 1007, Abstract.

Figure 8 of Oku is reproduced below.

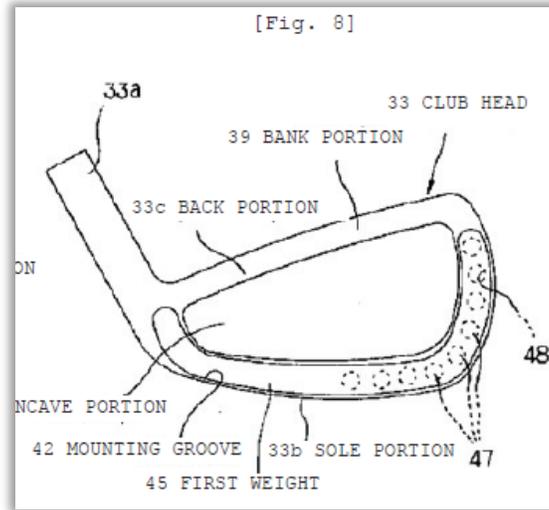


Figure 8 depicts the back portion 33c of golf club head 33, Ex. 1007 ¶ 26. Cylindrical weights 47 and insertion holes 38 are depicted along the sole and toe portions of the golf club head. *See id.* ¶ 28, Fig. 8.

c. *Independent Claim 15*

Petitioner contends that Mizuno teaches or suggests a “golf club head,” “hollow body portion,” “interior cavity,” and “elastic polymer material” of the type recited in Claim 15, and supports its contentions with declaration testimony. Pet. 68–69 (citing Ex. 1003 ¶¶ 180–83).

Petitioner relies on Oku with respect to the recited sets of cylindrical weight portions, and also supports these contentions with declaration testimony. *See* Pet. 69–74 (citing Ex. 1003 ¶¶ 184–189). Petitioner contends that one of ordinary skill in the art would have understood that Mizuno was concerned with maintaining a wide “sweet area,” i.e., “large MOI,” and a low CG. Pet. 66 (citing Ex. 1008 ¶¶ 10, 13, 46; Ex. 1003 ¶ 177). Petitioner argues that a skilled artisan would have understood that adding weight near the toe portion of a golf club head would have increased

MOI, and that such a person thus, would have been led to Oku, which teaches that MOI may be increased by dispersing cylindrical weights 47 disposed in insertion holes 48 about the peripheral edge of the club head. Pet. 66–67 (citing Ex. 1007 ¶¶ 5, 9, 10, 15, 27–30; Ex. 1003 ¶¶ 177, 178). According to Petitioner, these considerations would have led one of ordinary skill in the art to incorporate Oku’s cylindrical weights and insertion holes into Mizuno’s golf club head. Pet. 67–68; *see also* Ex. 1003 ¶ 180 (depicting Oku’s cylindrical weights superimposed onto the back of Mizuno’s golf club head).

Patent Owner does not dispute that Mizuno and Oku would have taught or suggested many limitations of claims 1 and 9 (*see* Prelim. Resp. 43–48), and we find Petitioner has made adequate showings regarding the undisputed limitations. Patent Owner’s arguments that one of ordinary skill in the art would not have combined the teachings of Mizuno and Oku, and that such a combination would not have taught or suggested certain disputed claim limitations, are addressed below.

Patent Owner argues that one of ordinary skill in the art would not have combined Mizuno and Oku because: (1) Oku and Mizuno recite “expressly different purposes” (Prelim. Resp. 36–38); (2) Mizuno’s club design already was optimized and thus not ready for improvement (*id.* at 38–40); and (3) one of ordinary skill would not have combined the cavity-back design of Oku with the hollow body design of Mizuno (*id.* at 40–43). These arguments are not persuasive.

Even if Oku and Mizuno recite “expressly different purposes,” this does not demonstrate that a skilled artisan would not have had reason to combine teachings from these two references. A rationale to combine prior

art references may come from “interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art.” *KSR*, 550 U.S. at 418. For similar reasons, we are not persuaded by Patent Owner’s argument that Mizuno’s club design was already optimized and not ready for improvement. Even if Mizuno’s design were “sufficient for producing the desired, lower CG location described by Mizuno” (Prelim. Resp. 39), one of ordinary skill in the art still would have had reason to try and optimize other characteristics of Mizuno’s design, such as MOI. Patent Owner’s argument that a skilled artisan would not have been motivated to combine Oku’s cavity-back design with Mizuno’s hollow body design misses the mark because it misconstrues the nature of Petitioner’s contentions. Petitioner never asserts that it would have been obvious to incorporate Oku’s cavity-back design into Mizuno’s golf club head. Petitioner merely asserts that a skilled artisan would have had reason to incorporate Oku’s cylindrical weights 47 and insertion holes 48 into the back side of Mizuno’s golf club head.

We find Petitioner has made a sufficient showing at this stage of the proceeding that one of ordinary skill in the art would have had reason to combine the teachings of Mizuno and Oku in the manner set forth in the Petition. In particular, Petitioner has made a sufficient showing that incorporating Oku’s cylindrical weights and insertion holes into Mizuno’s club head would have been a combination of prior art elements according to known methods that would have yielded predictable results. *See KSR*, 550 U.S. at 416.

Patent Owner also argues that Mizuno and Oku would not have taught or suggested: (1) two separate “sets” of cylindrical weight portions (Prelim. Resp. 43–45); (2) weight portions “coupled to the hollow body portion” (*id.* at 45–46), or (3) a second set of weight portions located below the HMP with mass greater than the first set (*id.* at 46–48). These arguments are not persuasive.

Patent Owner does not provide any persuasive explanation for why the specific cylindrical weights that Petitioner contends correspond to the recited first and second sets of weight portions (*see* Pet. 71) would not constitute “sets,” as that term is used in claim 15. In particular, Petitioner does not propose any construction of claim 15 that would exclude what it refers to as “arbitrarily selected” sets of cylindrical weights. *See* Prelim. Resp. 14. It also is readily apparent that in Petitioner’s proposed combination, Oku’s cylindrical weights would be coupled to the hollow body portion of Mizuno’s golf club head. *See, e.g.*, Pet. 68 (depicting overlay of Oku’s cylindrical weights onto Mizuno’s golf club head). Patent Owner’s third argument—that Mizuno and Oku do not teach or suggest a second set of weight portions located below the HMP with mass greater than the first set—is a closer call. However, Petitioner supports its argument with declaration testimony. *See* Ex. 1003 ¶¶ 188–89. Although Patent Owner’s declarant disagrees, our rules require us to resolve this dispute in the testimonial evidence in the light most favorable to petitioner when rendering a decision on institution. 37 C.F.R. § 42.108(c). Accordingly, on this record, we find Petitioner has made sufficient showings that Mizuno and Oku would have taught or suggested each disputed limitation of claim 15.

In sum, Petitioner has shown sufficiently at this stage of the proceeding that a skilled artisan would have had reason to combine the teachings of Mizuno and Oku in the manner set forth in the Petition, and that the resulting combination would have taught or suggested each limitation of claim 15. Accordingly, Petitioner has shown a reasonable likelihood of prevailing in demonstrating that claim 15 would have been obvious over Mizuno and Oku.

d. *Dependent Claims 17–19*

The Petition contains detailed explanations, supported by declaration testimony, of why Mizuno and Oku would have taught or suggested each additional limitation recited in dependent claims 17–19. *See* Pet. 74–77; Ex. 1003 ¶¶ 190–194. Patent Owner does not raise any additional disputes regarding these dependent claims. *See* Prelim. Resp. 36–48.

On this record, we find Petitioner’s evidence sufficient to show a reasonable likelihood of prevailing in demonstrating that claims 17–19 would have been obvious over Mizuno and Oku.

4. *Alleged Obviousness of Claim 16 over Mizuno, Oku, and Bennett*

a. *Bennett*

Bennett is directed to a golf club head that has interchangeable elements (i.e., weights) that can be used to adjust the club head’s center of gravity. Ex. 1010 ¶ 1. Bennett discloses that these elements can have different properties, including different weights. *Id.* ¶ 57.

b. *Claims 16*

Petitioner contends that incorporating Bennett’s weight portions having different weights into the allegedly obvious combination of Mizuno and Oku would have been obvious to one of ordinary skill in the art, and would have yielded a golf club head in which “each weight portion of the first set of cylindrical weight portions” has a mass that is less than the mass of “each weight portion of the second set of cylindrical weight portions,” as recited in claim 16. Pet. 79–81. Petitioner supports its contentions with declaration testimony. *See* Ex. 1003 ¶¶ 199–201. Patent Owner does not raise any additional disputes regarding claim 16. *See* Prelim. Resp. 36–48.

On this record, we find Petitioner’s evidence sufficient to show a reasonable likelihood of prevailing in demonstrating that claim 16 would have been obvious over Mizuno, Oku, and Bennett.

5. *Alleged Obviousness of Claim 20 over Mizuno, Oku, and Hou*

Petitioner contends that the striking plate (i.e., “face portion”) of Hou’s golf club head satisfies the thickness limitation recited in dependent claim 20, and that one of ordinary skill in the art would have had reason to design Mizuno’s golf club head to include a face plate at least as thin as that disclosed in Hou. Pet. 81–83. Petitioner supports its contentions with declaration testimony. *See* Ex. 1003 ¶¶ 202–205. Patent Owner does not raise any additional disputes regarding claim 20. *See* Prelim. Resp. 36–48.

On this record, we find Petitioner’s evidence sufficient to show a reasonable likelihood of prevailing in demonstrating that claim 20 would have been obvious over Mizuno, Oku, and Hou.

III. CONCLUSION

For the reasons set forth above, Petitioner has demonstrated a reasonable likelihood of prevailing with respect at least one claim challenged in the Petition. Accordingly, we institute an *inter partes* review. 35 U.S.C. § 314(a).

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED, pursuant to 35 U.S.C. § 314(a), that an *inter partes* review of U.S. Patent 9,199,143 B1 is instituted on the following grounds:

- (1) Claims 1–7, 9–13, and 15–19 under 35 U.S.C. § 103 as being unpatentable over Wahl and Takahashi;
- (2) Claims 8, 14, and 20 under 35 U.S.C. § 103 as being unpatentable over Wahl, Takahashi, and Hou;
- (3) Claims 15 and 17–19 under 35 U.S.C. § 103 as being unpatentable over Mizuno and Oku;
- (4) Claim 16 under 35 U.S.C. § 103 as being unpatentable over Mizuno, Oku, and Bennett; and
- (5) Claim 20 under 35 U.S.C. § 103 as being unpatentable over Mizuno, Oku, and Hou; and

FURTHER ORDERED pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4 that notice is hereby given of the institution of a trial, which commences on the entry date of this Decision.

IPR2018-00675
Patent 9,199,143 B1

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