

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TAYLOR MADE GOLF COMPANY, INC.,
Petitioner,

v.

TRIPLE TEE GOLF, INC.,
Patent Owner.

Case IPR2015-01236
Patent 8,142,308 B2

Before JOSIAH C. COCKS, SUSAN L. C. MITCHELL, and
MICHAEL L. WOODS, *Administrative Patent Judges*.

WOODS, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Taylor Made Golf Company, Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–20 of U.S. Patent No. 8,142,308 B2 (“the ’308 patent”). Pet. 1. We issued a Decision to Institute an *inter partes* review of claims 1–20 of the ’308 patent on the following grounds: (1) claims 1, 4–6, 8–13, 15–17, and 20 as anticipated under 35 U.S.C. § 102(b) by Parente; (2) claims 3 and 19 as unpatentable under 35 U.S.C. § 103(a) over Parente; (3) claims 2, 3, 7, 14, 18, and 19 as unpatentable under 35 U.S.C. § 103(a) over Parente and Ellingham; and (4) claims 8 and 15 as anticipated under 35 U.S.C. § 102(e) by Beach. Paper 8, 28 (“Inst. Dec.”).

After institution of trial, Triple Tee Golf, Inc. (“Patent Owner”) filed a Patent Owner Response (Paper 12, “PO Resp.”), to which Petitioner replied (Paper 14, “Pet. Reply”). Patent Owner also filed a Motion to Exclude (Paper 16, “Motion”) to exclude portions of Exhibit 1006 (the Declaration of Todd Beach), to which Petitioner filed an Opposition (Paper 19, “Opposition”).

Oral argument was conducted on June 20, 2016, and a transcript of the hearing is entered in the record. Paper 22.

We have jurisdiction under 35 U.S.C. § 318(a). After considering the evidence and arguments of both parties, and for the reasons set forth below, we determine that Petitioner met its burden of showing, by a preponderance of the evidence, that claims 1–20 of the ’308 patent are unpatentable.

A. *The ’308 Patent (Ex. 1001)*

The ’308 patent is titled “SYSTEM OF GOLF CLUB PERFORMANCE ENHANCEMENT AND ARTICLES RESULTANT THEREFROM.” Ex. 1001, Title. The system described in the ’308 patent seeks to vary the distribution of weight within the head of a golf club. *Id.* at 1:23–25.

According to the '308 patent, the inventive system provides “more options for positioning [the center of gravity (‘CG’)] and distribution of weight or weights within the head of a golf club . . . to compensate for physiologic imperfections . . . of the swing of a golfer.” *Id.* 2:16–24. The '308 patent utilizes a three-dimensional orthonormal coordinate system of the golf club head to describe the particular location of the weighting elements. *See id.* 2:20–22. In particular, the '308 patent utilizes a (3x3x3/X, Y, Z) orthonormal matrix, assigning the following values: (1) the X-axis corresponds to the value from the golf club heel to the golf club toe; (2) the Y-axis corresponds to the value from the golf club face to the rear of the club head; and (3) the Z-axis corresponds to the golf club height from the sole to the top of the club head. *See, e.g., id.* 8:1–39 (CHARTS 1–3) and Fig. 2.

To illustrate the Patent Owner’s coordinate system, Figures 1 and 2 of the '308 patent are reproduced below:

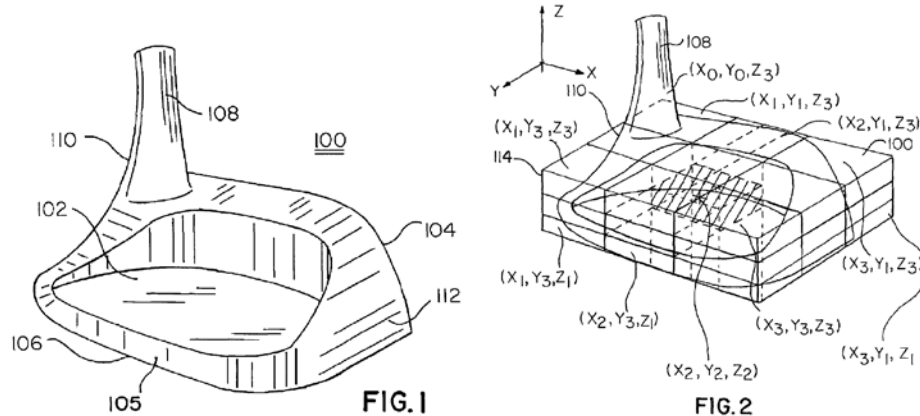


Figure 1 illustrates golf club head 100, with void space 102, face plate 104, sole portion 106, hosel 108, toe 112, and trailing edge 105, while Figure 2 illustrates a corresponding orthonormal matrix 114, with a 3x3x3 system of 27 volumetric coordinates. *Id.* 3:62–67; *id.* 4:65–5:12.

B. Illustrative Claims

Claims 1, 10, and 17 are independent system claims. As for the dependent claims: claims 2–9 depend directly from claim 1; claims 11–16 depend directly or indirectly from claim 10; and claims 18–20 depend directly from claim 17.

Claims 10 and 17 are illustrative of the subject matter at issue and are reproduced below (with emphasis added to certain limitations discussed in this Decision):

10. In a *virtual 3x3x3 X, Y, Z orthonormal coordinate system comprising 27 volumetric coordinates* in which a face plate of a golf club head intersects a forward-most XZ plane of said system, and in which a heel and hosel side of said club head intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value from X1 to X3 corresponds to a direction of a toe of said club head, with each of X1, X2 and X3 representing one third of said club head in the X-axis; an increase in Y-axis value from Y1 to Y3 corresponds in direction to a rear of said club head, with each of Y1, Y2 and Y3 representing one third of said club head in the Y-axis; and an increase in Z-axis value from Z1 to Z3 corresponds to an increase in height above a bottom-most XY-plane with each of Z1, Z2 and Z3 representing one third of said club head in the Z-axis; a golf club adjustment system comprising:

(a) said club head having a void space behind said face portion of said club head and above said sole portion thereof, said void space substantially conformal in geometry to that of said club head;

(b) *a golfer replaceable weighting element within said void space between a higher Y, higher Z coordinate, to minimize ballooning, to a lower Y, lower Z coordinate to maximize said ballooning; and*

(c) a golfer replaceable weighting element recessed within said void space disposed at a position having a coordinate of X2 and a coordinate of Z2.

17. A system for adjusting the performance of a golf club including a golf club head having a center of gravity and to which *a virtual 3x3x3 X, Y, Z orthonormal coordinate system comprising 27 volumetric coordinates* may be applied such that a face plate of said club head intersects a forward-most XZ plane of said system, and in

which a heel and hosel side of said club head intersects a YZ plane thereof substantially at an origin of said coordinate system, and further in which an increase in X-axis value from X1 to X3 corresponds to a direction of a toe of said club head, with each of X1, X2 and X3 representing one third of said club head in the X-axis; an increase Y-axis value from Y1 to Y3 corresponds in direction to a rear of said club head, with each of Y1, Y2 and Y3 representing one third of said club head in the Y-axis; and an increase in Z-axis value from Z1 to Z3 corresponds to an increase in height above a bottom-most XY plane, with each of Z1, Z2 and Z3 representing one third of said club head in the Z-axis; the system comprising:

(a) at least one void space within said club head, said void space substantially conformal in geometry to that of said club head; and

(b) *user-replaceable weighting elements for adjusting said center of gravity about a plane defined by $Y=aZ$ of said club head by increasing a mass of said weighting elements at a point within said plane defined by $Y=aZ$* , where a is a scalar number, wherein at least one of said weighting elements is recessed within said void space and disposed at a position having a coordinate of X2 and a coordinate of Z2.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction 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, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). A presumption exists that a claim term should be construed in light of its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). Under the broadest reasonable construction standard, claim terms are generally 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. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In our decision instituting trial, we interpreted the following terms/phrases: (1) “void space substantially conformal in geometry to that of said club head,” (2) “weighting element . . . disposed at a position having a coordinate of X2 and a coordinate of Z2”; and (3) “a first selected weighting element is integral with a part of a second selected weighting element” and “a first selected element integral with a second selected element.” Inst. Dec. 6–12. We do not discern a reason to revise those constructions. For general reference, the constructions of those terms set forth in the decision instituting trial are reproduced below:

Claim Term/Phrase	Construction
“void space substantially conformal in geometry to that of said club head”	includes spaces that are not completely enclosed
“weighting element . . . disposed at a position having a coordinate of X2 and a coordinate of Z2”	includes weighting elements that span other coordinates, including the X2, Z1 coordinate
“a first selected weighting element is integral with a part of a second selected weighting element” and “a first selected element integral with a second selected element”	forms a unit that may be composed of multiple constituent parts

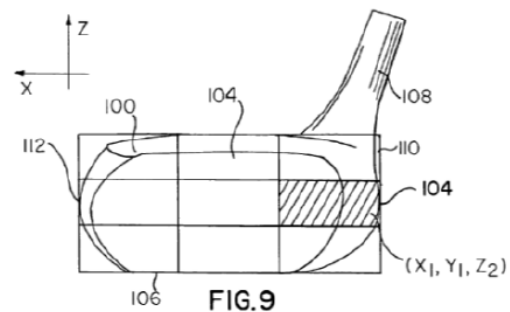
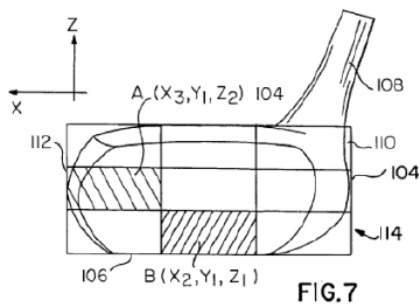
In connection with this Final Written Decision, we discern that there is a disagreement between the parties as to the proper construction of the following additional terms.

1. “3x3x3/X, Y, Z orthonormal coordinate system comprising 27 volumetric coordinates”

Each of independent claims 1, 10, and 17 recite a “3x3x3/X, Y, Z orthonormal coordinate system comprising 27 volumetric coordinates.”

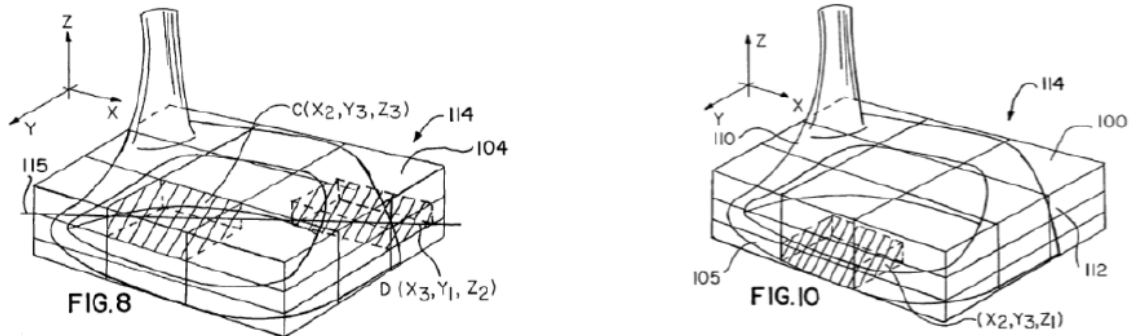
Patent Owner argues that to satisfy the “orthonormal” limitation, “the length of the edges of [the] 27 volumetric matrix [must be] equal to each other.” PO Resp. 18 (citations omitted). Patent Owner explains that Parente cannot anticipate the claims as Parente’s “Y-axis edges . . . are not nearly equal to the X-axis edges and . . . the Y-axis edges are also not nearly equal to the Z-axis edges.” *Id.* (citing Ex. 1006 ¶ 67).

Petitioner disagrees with Patent Owner's interpretation that the claimed phrase requires the unit lengths along an axis to be equal to the unit lengths along the other axes. *See* Pet. Reply 2. In support of this position, Petitioner cites to Patent Owner's own embodiments, shown in Figures 7 and 9, which we reproduce below:



According to Petitioner, the above Figures 7 and 9 show the unit lengths along the X-axis as being approximately three-times the unit lengths along the Z-axis. *Id.* at 2–3.

In further support of Petitioner's position, Petitioner also cites to Figures 8 and 10 of the '308 patent, which we reproduce below:



According to Petitioner, the above Figures 8 and 10 show “the unit lengths along the X-axis are about three times the unit lengths along the Z-axis and about two times the unit lengths along the Y-axis.” *Id.* at 3 (citations omitted).

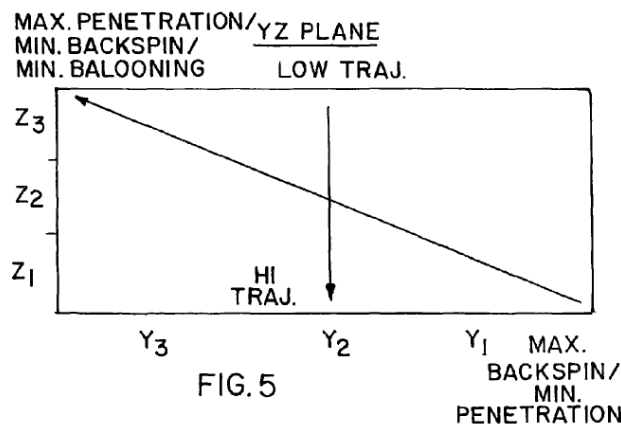
As noted above, in the context of an *inter partes* review, the Board construes claim terms based on their broadest reasonable construction that is consistent with the underlying specification. With that guidance in mind, Patent Owner's position that the claimed phrase should be construed to require the length of each axis edge to be equal in length to the other axes' edges is both unsupported by the explicit claim language and inconsistent with the Specification. In particular, Patent Owner does not cite to particular claim language to support its interpretation (see PO Resp. 4), and Patent Owner's Specification, namely Figures 7–10, conflict with its proposed interpretation. Accordingly, Patent Owner does not provide a suitable evidentiary basis—nor can we find one on our own—to support its narrow construction.

Accordingly, the claimed phrase “3x3x3/X, Y, Z orthonormal coordinate system comprising 27 volumetric coordinates” does not require that the length of the edges of the X, Y, and Z axis volumetric coordinates be equal to one another.

2. “user-replaceable weighting elements for adjusting said center of gravity about a plane defined by $Y=aZ$. . . by increasing a mass of said weighting elements at a point within said plane defined by $Y=aZ$ ”

Independent claim 17 recites, “user-replaceable weighting elements for adjusting said center of gravity about a plane defined by a $Y=aZ$ of said club head by increasing a mass of said weighting elements at a point within said plane defined by $Y=aZ$.” Ex. 1001, 12:14–17.

Patent Owner argues that the claimed phrase requires “adjustment [that] is effected by concurrently changing two weighting elements at coordinates within the plane defined by the $Y=aZ$ equation” (PO Resp. 11) and also requires “precise relative weighting of Y versus Z elements than is the case in the more general language of ‘higher Y, higher Z’ and ‘lower Y, lower Z’ used in Claim 10” (*id.* at 16). *See also id.* at 17 (suggesting similarly that dependent claim 19 requires “concurrently adjusting Y and Z weighting upon a plane defined by the $Y=aZ$ equation”). Patent Owner explains that the use of the “ $Y=aZ$ ” formula “was simply to encompass all possible angulations of the diagonal line shown in Fig. 5 of the ’308 patent.” *Id.* at 17. Figure 5 of the ’308 patent is reproduced below:



According to the ’308 patent, the above figure illustrates “the club performance characteristics which may be influenced by weighting within the YZ plane of said matrix.” Ex. 1001, 4:7–9.

Petitioner, on the other hand, contends that the Patent Owner's construction is without merit, as claim 17 "lacks any claim language requiring a more precise relative weighting of Y versus Z elements alone, or as compared to the language recited in claim 10." Pet. Reply 12. Petitioner asserts that the "limitation is satisfied by placing a weight somewhere within a golf club head, particularly given that 'a' can have any value, positive or negative." *Id.* at 13 (citing Pet. 12–13).

Patent Owner does not explain adequately why the claimed phrase requires "concurrently changing two weighting elements at coordinates within the plane defined by the $Y=aZ$," "precise relative weighting of Y versus Z elements," or "encompass[ing] all possible angulations of the diagonal line shown in Fig. 5," whatever those requirements may mean. Although not entirely clear, it appears that Patent Owner is proposing that the claim requires a weighting element that is adjustably varied *only* along the plane defined by a $Y=aZ$, but does not support this proposed interpretation with persuasive explanation or adequate citation to the record. Further, our review of the '308 patent does not support this narrow interpretation.

Accordingly, the claimed phrase "user-replaceable weighting elements for adjusting said center of gravity about a plane defined by $Y=aZ$ " does not require "concurrently changing two weighting elements at coordinates within the plane defined by the $Y=aZ$," does not require "precise relative weighting of Y versus Z elements," and does not require that the weighting elements be adjustably varied *only* along the plane defined by $Y=aZ$, as Patent Owner argues. Rather, the claim limitation is satisfied when a mass of a weighting element is increased within a plane defined by $Y=aZ$ to adjust the center of gravity about the $Y=aZ$ plane.

B. Prior Art

1. Summary of Parente (Ex. 1003)

Parente discloses golf club heads with adjustable weighting therein. Ex. 1003, 1:5–7. To achieve this adjustable weighting, Parente describes extending screws of varying lengths into an empty internal cavity of the body of the head. *Id.* at 2:24–28.

Figure 1 of Parente is reproduced below:

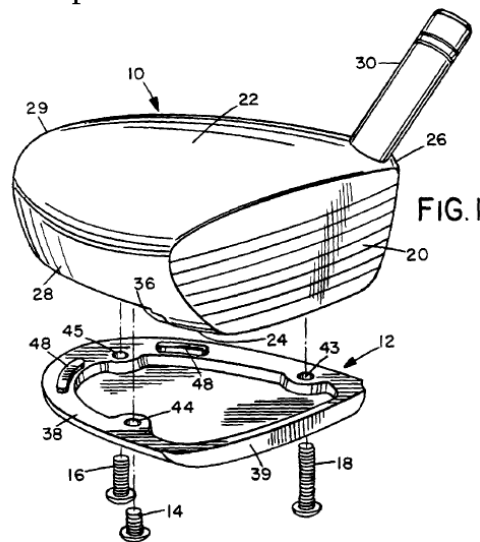
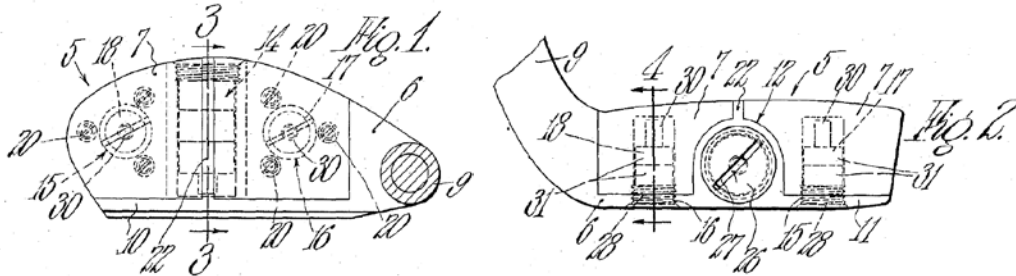


Figure 1 depicts Parente’s golf club head with an adjustable weighting system, including sole plate 12 which is secured to body 10 via different length screws 14, 16, and 18. *Id.* at 2:61–65.

2. Summary of Ellingham (Ex. 1004)

Ellingham discloses golf clubs and, more particularly, putters, with removable weights for adjusting the balance or weight of the golf club. Ex. 1004, 1:9–11, 76–83. Figures 1 and 2 of Ellingham are reproduced below:



Figures 1 and 2 depict Ellingham's putter 5, including a head with metallic portion 6 and two, wooden, solid blocks 7. *Id.* at 1:49–56. These figures further depict Ellingham's weight changing unit 14. *Id.* at 1:76–80.

Figure 3 of Ellingham further illustrates weight changing unit 14 and is reproduced below:

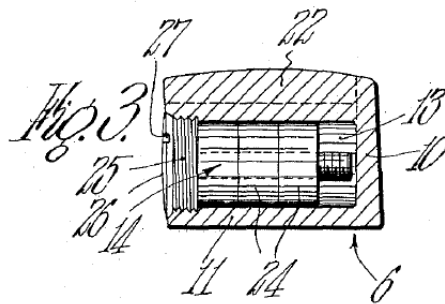


Figure 3 depicts Ellingham's weight unit 14 comprising disks or collars 24, which are threaded upon screw 25, with screw 25 threaded into socket 13. *Id.* at 2:18–24.

3. Summary of Beach (Ex. 1005)

Beach describes a golf club, in particular, a driver, that “provides for adjustment of both vertical and horizontal weighting within the head of a driver.” Ex. 1005, 1:12–13, 27–38.

Figures 2 and 3 of Beach are reproduced below:

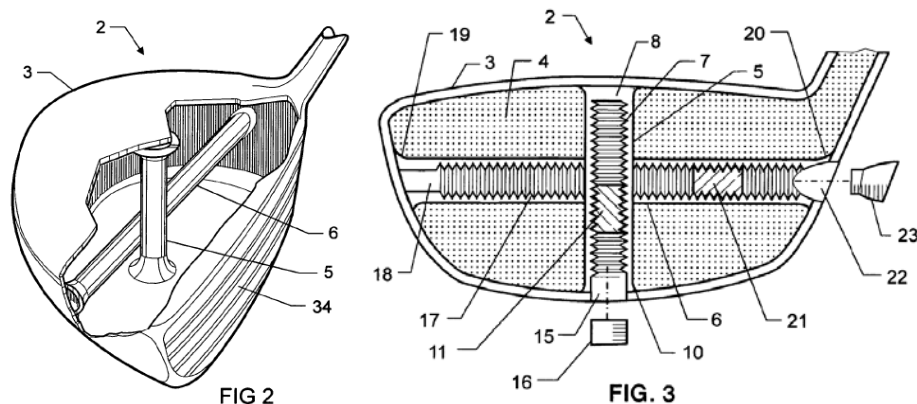


Figure 2 is a cutaway perspective view of Beach's driver, including clubhead 2, external head shell 3, first sleeve 5, and second sleeve 6, while Figure 3 is a cutaway side view of the driver of Figure 2, depicting threaded weight 11 in sleeve 5 and threaded weight 21 in sleeve 6. *Id.* at 2:41–46, 54–65.

C. Grounds of Unpatentability

1. Anticipation Ground Based on Parente

In setting forth Petitioner's argument that claims 1, 4–6, 8–13, 15–17, and 20 are anticipated by Parente, Petitioner provided annotated copies of Figures 2, 3, and 4 of Parente, superimposing a virtual X, Y, Z orthonormal coordinate matrix over these figures, to illustrate the location of Parente's weighting elements within the matrix. Pet. 19.

Figures 2, 3, and 4 of Parente, as annotated by Petitioner, are reproduced below:

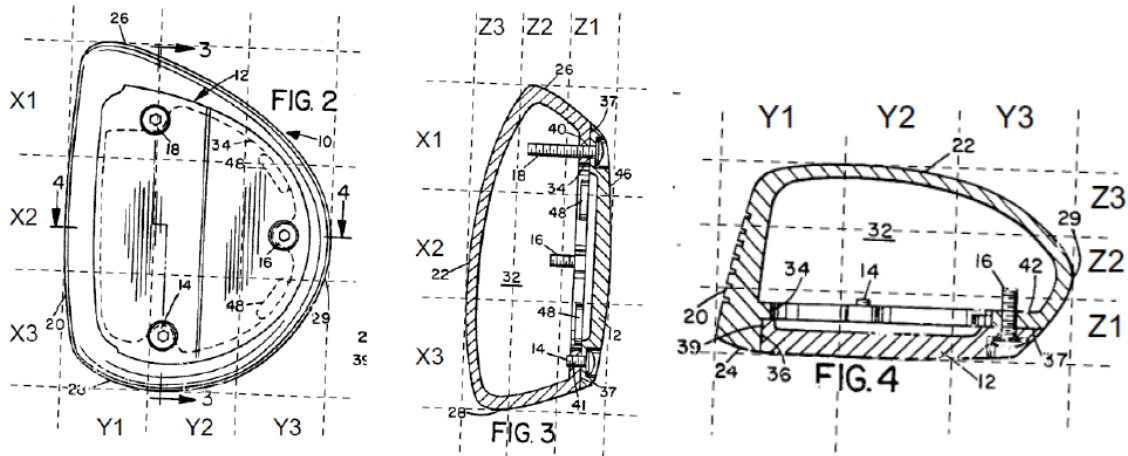


Figure 2 is a bottom plan view of Parente’s club head; Figure 3 is a sectional view taken along line 3–3 of Figure 2; and Figure 4 is a sectional view taken along line 4–4 of Figure 2. Ex. 1003, 2:53–56. Although these figures depict screws 14, 16, and 18 of discrete lengths, Parente discloses that “[a]ny screw from any of [] seven sets may be used at any of the [bores 40, 41, and 42], providing a very large number of possible different weight distributions, and a large degree of adjustability.” *Id.* at 4:16–21.

In addition to the annotated figures, Petitioner also provided a chart, TABLE 1, to summarize the location of Parente’s variable-length screws, which are threaded in bores 40, 41, and 42, in relation to the X, Y, and Z coordinates. Pet. 19–20.

TABLE 1 from the Petition is reproduced below:

TABLE 1

Threaded Bore	X Coordinate	Y Coordinate	Z Coordinate ⁸
40	X1	Y1-Y2	Z1-Z2 / Z _N
41	X3	Y2	Z1 / Z _N
42	X2	Y3	Z1-Z2 / Z _N

Id. at 20.

As asserted by Petitioner, TABLE 1 provides a summary of the X, Y, and Z coordinate positions of Parente's weights, which are screws of varying lengths and inserted in threaded bores 40, 41, and 42. *Id.*

In its Response, Patent Owner presents several arguments that are directed to all of the claims under this ground, generally, and provides additional arguments for certain specific claims, which we address separately under different sub-headings, below. *See* PO Resp. 4–7, 13–18.

First, Patent Owner argues that Parente's disclosure does not satisfy the claimed "orthonormal" limitations set forth in the preamble of the independent claims, as "the Y-axis edges . . . are not equal to the X-axis edges and, as well, the Y-axis edges are also not *nearly equal* to the Z-axis edges of the structure of Parente." PO Resp. 4 (emphasis added) (citing Ex. 1006 ¶ 67).

In response to Patent Owner's first argument, Petitioner argues that the Patent Owner's own Specification "makes clear that the unit lengths along an axis are not required to be equal to the unit lengths along any other axis." Pet. Reply 2; *see also id.* at 3 (citing Figures 7–10 of the '308 Patent).

As discussed *supra*, Patent Owner's argument is premised on an overly narrow interpretation of the claims. In particular, the claims do not require that the lengths along the X, Y, and Z-axis edges be "nearly equal." Accordingly, Patent Owner's first argument is not persuasive.

Second, Patent Owner argues that Parente does not anticipate the claims as "none of [Parente's] screws are located at the X2, Y2, coordinate, nor can they be in a peripheral weighting system." PO Resp. 5 (underlined emphasis added) (citing Pet. 27). Patent Owner asserts that "an essential limitation" of the claims requires "a weighting capability at the X2, Y2, Z2 coordinate and those above and

below that.” *Id.* (underlined emphasis added). Patent Owner explains that Parente discloses “a strictly *peripheral weighting system* thus rendering impossible any weighting within the entire X2, Y2 stack of coordinate which includes the Z1, Z2 and Z3 volumetric coordinates.” *Id.* (emphasis added).

In response to Patent Owner’s second argument, Petitioner asserts that the claims do not require the weighting element to have a coordinate of X2, Y2. Pet. Reply 6.

Contrary to Patent Owner’s assertion (PO Resp. 5), the instituted claims challenged as anticipated by Parente (i.e., claims 1, 4–6, 8–13, 15–17, and 20) do not require a weighting element at the X2, Y2 coordinate. Notably, Patent Owner fails to point out any specific claim language relied upon in proposing this interpretation (see PO Resp. 5), and we find nothing in the claims or the ’308 patent to support this interpretation. Although dependent claims 2 and 18 each recite a weighting element at the X2, Y2, and Z2 position, claims 2 and 18 are not challenged as being anticipated by Parente. See Pet. 19. Additionally, the claims do not recite language that precludes “peripheral weighting systems,” as also suggested by Patent Owner. Accordingly, Patent Owner’s second argument is not persuasive.

Third, Patent Owner argues that “Parente cannot anticipate [these claims] given that the practice of those claims is not enabled by Parente.” PO Resp. 7. Patent Owner explains that

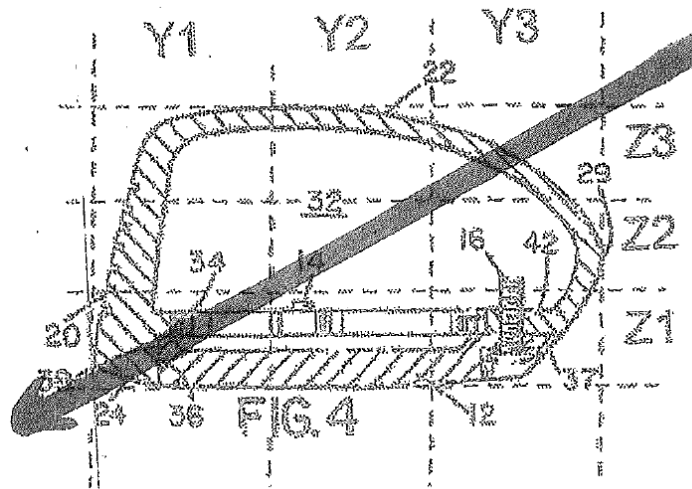
[G]iven Parente’s own admission that his system is that of peripheral weighting, it is clearly not enabling of the invention of the ’308 patent, as claimed, at least in that none of the weightings in the X2, Y2 stack available in the ’308 system are possible in the teaching of Parente, thereby rendering the issue of whether or not Parente can effect weighting at the X2, Z2 coordinate moot.

Id. (underlined emphasis added).

For at least the same reasons that we determined Patent Owner's second argument unpersuasive, we also find unpersuasive Patent Owner's third argument. In particular, this argument is premised on an incorrect interpretation of the claims, as none of the claims challenged as anticipated by Parente require "weightings in the X2, Y2 stack," as suggested by Patent Owner.

a. Claims 10–13, 15, and 16

With respect to claims 10–13, 15, and 16, Patent Owner presents the following additional arguments. See PO Resp. 13–16. First, Patent Owner provides an annotated version of Parente's Figure 4 (*id.* at 13), which we reproduce below:



Patent Owner argues that “the diagonal line inscribed upon Fig. 4 of Parente is precisely representative of the limitations which Parente must exhibit to anticipate or render obvious independent Claims 10 or 17.” *Id.* at 13–14. Patent Owner further argues that “Petitioner’s Y, Z coordinate overlay of Fig. 4 . . . is not orthonormal because edge vectors of each Y and Z volumetric coordinate are not nearly equal to each other.” *Id.* at 14. Patent Owner also argues that “Claims 10 to 20 require the capability to adjust a golfer replaceable element within the void

space between a higher Y, higher Z coordinate to a lower Y, lower Z coordinate, shown by the []diagonal line inscribed upon Fig. 4 of Parente.” *Id.*

With particular respect to claim 11, Patent Owner also argues that Parente has “three less volumetric coordinates than is taught by the ’308 patent,” and therefore, Parente cannot anticipate the claim. *See id.* at 15. In presenting this argument, Patent Owner proposes that the claim requires the ability to place a weight within all twenty-seven volumetric coordinates. *See id.*

We note that Patent Owner cites little content of the record in proposing these claim constructions (*see* PO Resp. 13–15), and we find nothing in the ’308 patent or the claims to support these narrow interpretations. Patent Owner does not explain adequately—nor can we discern upon our own review of the record—why the claims require the lengths along each axis’ edge to be “nearly equal to each other” or why the claims require “the capability to adjust a golfer replaceable weighting element within the void space between a higher Y, higher Z coordinate to a lower Y, lower Z coordinate, [as] shown by the [] diagonal line inscribed upon Fig. 4.” *See id.* at 14. Nor are we persuaded by Patent Owner’s suggestion that the claims require the ability to place a weight within each of the twenty-seven volumetric coordinates. *See id.* at 15.

In considering the totality of the record before us, we are persuaded by Petitioner’s arguments and evidence and find that Parente’s screw (in threaded bore 40) occupies the Y1 (or low Y) and Z1 (or low Z) coordinates, thereby satisfying the limitations of the claims. *See* Pet. 14 (Table 1, reproduced above).

b. Claims 17 and 20

As noted above, claim 17—and its dependent claim 20—recite “user-replaceable weighting elements for adjusting said center of gravity about a plane defined by $Y=aZ$ of said club head by increasing a mass of said weighting

elements at a point within said plane defined by $Y=aZ$, where a is a scalar number.” Ex. 1001, 12:14–18.

Patent Owner argues that Parente does not anticipate these claims as Parente fails to disclose “weighting of mass reflected in the $Y=aZ$ formula,” which “encompass[es] all possible angulations of the diagonal line shown in Fig. 5 of the ’308 patent.” See PO Resp. 16; see also *id.* at 17 (presenting a similar argument with respect to claim 20).

As discussed *supra*, we disagree with Patent Owner’s assertion that the claimed language requires “a more precise relative weighting of Y versus Z elements,” thereby precluding Parente from anticipating the claims. See PO Resp. 16.

Accordingly, we find unpersuasive Patent Owner’s position that the Parente’s sole plate with screws of varying lengths does not satisfy the claimed limitations. Instead, we are persuaded by Petitioner’s arguments and evidence and find that inserting longer screws within threaded bores 41, 42, or 40 satisfy the claimed limitation as they will increase a mass of a weighting element within a plane defined by $Y=aZ$ to adjust the center of gravity about this plane. See Pet. 19–20; *id.* at 20 (TABLE 1).

c. Conclusion—Anticipation by Parente

With the foregoing discussion in mind, and in considering the totality of the record now before us, we are persuaded that Petitioner has shown—by a preponderance of the evidence—that claims 1, 4–6, 8–13, 15–17, and 20 are unpatentable as anticipated by Parente.

2. Obviousness Ground Based on Parente (claims 3, 19)

Claims 3 and 19 depend from independent claims 1 and 17, respectively, and further recite, in relevant part, “selected weighting element disposed at . . . a

coordinate of X2 and a coordinate of Z2 [and] has a coordinate of Y1.”

Petitioner acknowledges that Figure 1 of Parente does not disclose a screw located at the X2, Y1, Z2 coordinate, but cites to Parente’s disclosure that additional screws may be used in alternative embodiments. Pet. 33–34 (citing Ex. 1003, 4:64–5:2). Petitioner further cites to a particular excerpt within Parente, which provides, “the screws may be changed readily until the optimum weighting for a particular golfer is achieved.” *Id.* at 34 (citing Ex. 1003, 2:7–8). Petitioner also asserts that Parente teaches that additional screws may be positioned at the front-center of the club head, or the X2, Y1 position, and relies on the testimony of Mr. Beach in support of this assertion. *See id.* (citing Ex. 1006, ¶ 80 (citing Ex. 1003, 4:64–5:2)). Furthermore, according to Petitioner, a person having ordinary skill in the art would have understood that placing a heavier weight in the front-center of the club head, or at the X2, Y1 position, would have the effect of decreasing the gear effect and the launch angle. *See id.* (citing Ex. 1006, ¶ 82 (citing Ex. 1003, 4:27–29 (“By providing a heavier screw at the rear of the head, the gear effect is increased and the launch angle will also be increased.”)))).

In contesting claims 3 and 19 as obvious over Parente, Patent Owner relies on the same unpersuasive arguments discussed *supra* with respect to independent claims 1 and 17. *See* PO Resp. 8. As discussed above, we do not agree that such features are missing.

Accordingly, and in considering the totality of the record now before us, we are persuaded that Petitioner has shown—by a preponderance of the evidence—that claims 3 and 19 are unpatentable as obvious over Parente.

3. *Obviousness Ground Based on Parente and Ellingham*

In combining Ellingham with Parente, Petitioner asserts that claims 2, 3, 7, 14, 18, and 19 are obvious over Parente and Ellingham, and argues that it would

have been obvious to a person having ordinary skill in the art to add Ellingham's screw 25, with one or more separately attached weights 24, to Parente's club head, by positioning screw 25 in the middle, rear of the club head, such that it extends from the rear towards the face plate of Parente's club head and has coordinates X2, Y1-Y2-Y3, Z1-Z2. Pet. 35–38 (citations omitted). Petitioner argues that such an embodiment would allow a user to transversely adjust the center of gravity of Parente's club head and that the proposed modification would provide the additional benefit of allowing a user to fully and more precisely adjust Parente's center of gravity between the front and back of the club head. *See id.* at 38–39.

In its Response, Patent Owner presents several arguments that are directed to all of the claims under this ground, generally, and provides additional arguments for certain specific claims, which we address separately under different sub-headings, below. *See* PO Resp. 8–11.

First, Patent Owner argues that the “combinability of Ellingham with Parente is problematic” (PO Resp. 8) as Ellingham's screw “would interfere with many of the weighting screws of Parente” (*id.*), and “the sheer size of [Ellingham's screw] would limit the number of screw weight locations otherwise possible in the system of Parente” (*id.* at 9).

Patent Owner's first argument is unpersuasive, as a proposed combination of references is not limited to a bodily incorporation of the features of one reference into another. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference”); *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) (“Combining the teachings of references does not involve an ability to combine their specific structures.”). Here, Patent Owner's assertion that Ellingham's screw would interfere with Parente's screws focuses improperly

on the incorporation of Ellingham's specific screw structure with Parente's specific club head structure, rather than what these references teach to one of ordinary skill in the art. In that respect, Petitioner is considering appropriately what a person of ordinary skill in the art, who is also a person of ordinary creativity, *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007), would have appreciated from the combined teachings of the references. We agree with Petitioner's assertion that the proposed combination would allow a user to transversely adjust the center of gravity of Parente's club head and that the proposed modification would provide the additional benefit of allowing a user to fully and more precisely adjust Parente's center of gravity between the front and back of the club head. *See* Pet. 38–39.

Second, Patent Owner argues that “neither Parente nor Ellingham contain[s] any teaching, suggestion or motivation which would have led one of ordinary skill in the art to combine” Parente with Ellingham. PO Resp. 8.

Patent Owner's second argument is unpersuasive, as it is foreclosed by *KSR*, in which the Court rejected the rigid requirement of a teaching or suggestion or motivation to combine known elements in order to show obviousness. *KSR Int'l Co.*, 550 U.S. at 415.

Third, Patent Owner argues that Parente utilizes a perimeter weighting system and that “Parente was never conceived as anything other than a complete golf head adjustment system,” presumably discouraging a person of ordinary skill in the art from combining Parente with Ellingham as Petitioner has done. *See* PO Resp. 8–9.

Patent Owner's third argument is unpersuasive. Although a prior art reference must be considered in its entirety, that is, as a whole, including portions that would lead away from the claimed invention (*W.L. Gore & Assoc., Inc. v.*

Garlock, Inc., 721 F.2d 1540, 1550 (Fed. Cir. 1983)), the prior art's mere disclosure of more than one alternative does not constitute a teaching away unless such disclosure *criticizes, discredits, or otherwise discourages* the solution claimed (see *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004)). In the present case, even assuming Patent Owner's assertion that Parente utilizes perimeter weighting is true, Parente's perimeter weighting disclosure does not constitute a teaching away from the claimed weighting system or Ellingham's alternative weighting system, because Parente does not criticize, discredit, or otherwise discourage the proposed combination.

In considering the totality of the record before us, we agree with Petitioner's arguments and reasoning for combining Parente with Ellingham. See Pet. 35–39.

a. Claims 2, 3, and 7

Claims 2, 3, and 7 depend from claim 1, which recites in relevant part, “two selectable golfer replaceable weighting elements secured within said void space, wherein *at least one weighting element thereof is not contiguous* to any part of said face plate.” Ex. 1001, 10:1–4 (emphasis added).

Patent Owner argues that these claims 2, 3, and 7 “cannot be obvious in view of the combination of Parente and Ellingham in that at least one weighting element of any resultant system would be contiguous with a part of the face plate.” PO Resp. 10.

Patent Owner's argument is unpersuasive, as it is not commensurate in scope with the claim. Claim 1 requires at least two weighting elements, and only one of these weighting elements must not be “contiguous to any part of the face plate.” See Ex. 1001, 10:1–4. Even if we take Patent Owner's assertion to be true, in that “one weighting element of any resultant system would be contiguous with a part of the face plate” (PO Resp. 10), the claimed limitation is satisfied so long as another

(second) weighting element “is not contiguous to any part of said face plate” (Ex. 1001, 10:1–4). Here, Parente discloses weights/screws 14, 16, 18 extending in threaded bores 40, 41, and 42, none of which are contiguous with the face plate (Ex. 1003, Figs. 2–4), thereby satisfying the claimed “at least one weighting element thereof is not contiguous to any part of said face plate” (Ex. 1001, 10:1–4).

*b. Claims 14 and 18*¹

Claim 14 depends from claim 10 and further recites, “a first selected element is integral with a second selected element.” Ex. 1001, 11:20–21. Claim 10 recites, in relevant part, a weighting element “between a higher Y, higher Z coordinate, to minimize ballooning, to a lower Y, lower Z coordinate to maximize said ballooning.” *Id.* at 10:61–64. Claim 18 depends from claim 17 and further recites, “in which said at least one selected weighting element disposed at said position having a coordinate of X2 and a coordinate of Z2 has a coordinate of Y2.” *Id.* at 12:22–25.

Without identifying any particular claim language, Patent Owner argues that the Petition fails to adequately address these claims need for “a golfer replaceable weighting element within the void space positionable between a higher Y, higher Z coordinate to a lower Y, lower Z, coordinate.” PO Resp. 10. Patent Owner explains that because “the only adjustability accomplished by the weighting unit 14 of Ellingham is along the Y-axis . . . , and the only weighting accomplished by weight units 14 and 18 of Parente are along the Z axis,” the proposed combination

¹ In its Patent Owner Response, Patent Owner argues claims 14 and 18 under one sub-heading (PO Resp. 10) and argues claims 18 and 19 under a second sub-heading (*id.* at 11). Even though arguments to claim 18 are presented under two separate sub-headings, we adopt Patent Owner’s sub-headings in our Final Decision for clarity of record.

does not yield “concurrent adjustment of weights . . . between a higher Y, higher Z coordinate and a lower Y, lower Z coordinate.” *Id.*

Patent Owner’s argument is not persuasive, as it is premised on an incorrect interpretation of the claims. In particular, and as explained *supra*, the claims do not require “concurrent adjustment of weights,” as Patent Owner argues.

Stated succinctly, claim 18 merely requires a weighting element be disposed at the X2, Y2, Z2 coordinate, and claim 10 requires a weighting element “between a higher Y, higher Z coordinate . . . to a lower Y, lower Z coordinate.” Ex. 1001, 10:61–64.

As set forth in Table 2 reproduced below, the proposed combination of Parente and Ellingham yields weights within these claimed coordinates.

TABLE 2

Weight Location	X Coordinate	Y Coordinate	Z Coordinate
Weight 1 (rear)	X2	Y3	Z1-Z2
Weight 2 (middle)	X2	Y2	Z1-Z2
Weight 3 (front)	X2	Y1-Y2	Z1-Z2

Pet. 37.

Based on the record before us, we agree with Petitioner’s arguments and evidence that weights 1, 2, and 3 correspond to the rear, middle, and front weights, respectively, of Ellingham’s weight unit 14 and their respective position within the claimed orthonormal matrix. *Id.* (citing Ex. 1006 ¶¶ 88, 89).

c. Claims 18 and 19

Claims 18 and 19 depend directly from claim 17, and claim 17 recites, in relevant part, “user-replaceable weighting elements for adjusting said center of gravity about a plane defined by $Y=aZ$ of said club head by increasing a mass of said weighting elements at a point within said plane defined by $Y=aZ$.” Ex. 1001, 12:14–17.

Patent Owner argues that the combination of Parente and Ellingham “does not enable any method for adjustment of the center of gravity of the golf club head about a plane defined by the equation $Y=aZ$, which adjustment is effected by concurrently changing two weighting elements at coordinates within the plane defined by the $Y=aZ$ equation.” PO Resp. 11.

Patent Owner’s argument is unpersuasive. As explained *supra*, the claimed phrase “user-replaceable weighting elements for adjusting said center of gravity about a plane defined by $Y=aZ$ ” does not require “concurrently changing two weighting elements at coordinates within the plane defined by the $Y=aZ$ equation,” as Patent Owner argues. Instead, we adopt Petitioner’s arguments and evidence and find that inserting longer screws within threaded bores 41, 42, or 40 will satisfy the claimed limitation as they will increase a mass of a weighting element within multiple planes, including one understood as defining the $Y=aZ$ plane, to adjust the center of gravity about this plane. See Pet. 19–20; *id.* at 20 (TABLE 1).

d. Conclusion—Obvious over Parente and Ellingham

With the foregoing discussion in mind, and in considering the totality of the record now before us, we are persuaded that Petitioner has shown—by a preponderance of the evidence—that claims 2, 3, 7, 14, 18, and 19 are unpatentable as obvious over Parente and Ellingham.

4. Anticipation Ground Based on Beach²

In setting forth Petitioner’s argument that claims 8 and 15 are anticipated by Beach, Petitioner provided annotated copies of Figures 3 and 10 of Beach, superimposing a virtual X, Y, Z orthonormal coordinate matrix over these figures,

² In our Decision to Institute, we determined that Beach is prior art to dependent claims 8 and 15, only, and not their respective independent claims 1 and 10. See Inst. Dec. 22–25. Accordingly, only dependent claims 8 and 15 are included in the anticipation ground to Beach, and not independent claims 1 and 10. See *id.*

to illustrate the location of Beach's weighting elements within the matrix. Pet. 42–43.

Figures 3 and 10 of Beach, as annotated by Petitioner, are reproduced below:

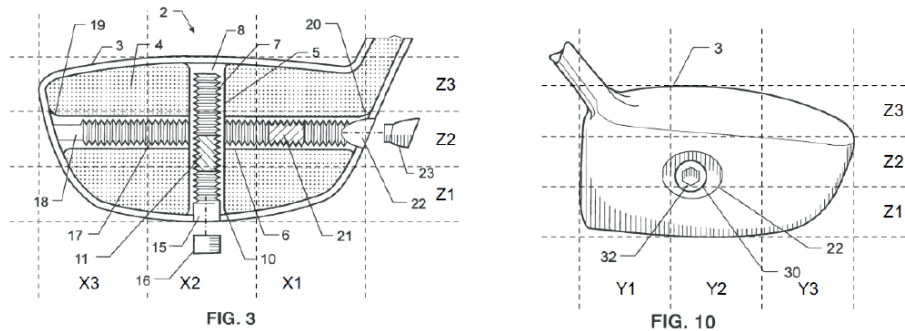


Figure 3 is a cutaway side view depicting Beach's clubhead 2, with essentially hollow head shell 3, containing first sleeve 5 and second sleeve 6. Ex. 1005, 2:26–27, 44–53. First sleeve 5 includes threaded shaft 7 and threaded weight 11, while second sleeve 6 includes threaded shaft 17 and threaded weight 21. *Id.* 2:54–65. Figure 10 provides a different view of head shell 3, as can be seen by comparing the location of access port 22 also shown in Figure 3. *Id.* at 3:30.

Figure 2 of Beach is also provided below:

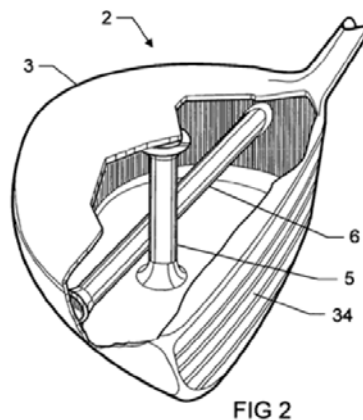


Figure 2 depicts vertical sleeve 5 positioned in front of horizontal sleeve 6 and closer to the club face. Ex. 1005, 41–52. Petitioner contends that because Beach's vertical sleeve 5 is positioned closer to the club's face than horizontal

sleeve 6 (Fig. 2), and because sleeve 6 is positioned in the Y2 coordinate, but adjacent to the forward Y1 coordinate (see annotated Figure 10, reproduced *supra*), sleeve 5, and its corresponding weight 11, reside in the Y1 coordinate. See Pet. 26–27 (citing Ex. 1006 ¶¶ 104, 105).

In addition to the above figures, Petitioner also provided a chart, TABLE 3, to summarize the location of Beach’s weights 11, 21 in relation to the X, Y, and Z coordinates. *Id.* at 43.

TABLE 3 from the Petition is reproduced below:

TABLE 3

Weight	X Coordinate	Y Coordinate	Z Coordinate
11	X2	Y1	Z1-Z2/Z _N
21	X1/X _N	Y2	Z2

Id.

TABLE 3 provides a summary of the X, Y, and Z coordinate positions of Beach’s weighting elements 11, 21, which are inserted in threaded sleeves 5, 6, respectively. See *id.* at 44.

a. Claim 8

Claim 8 depends from claim 1, which recites in relevant part, “two selectable golfer replaceable weighting elements . . . and a selected coordinate value upon the Y-axis in any one of said weighting elements does not equal a selected coordinate value of Y of at least a second one of said weighting elements.” Ex. 1001, 10:1–7.

As explained and set forth in Table 3, *supra*, Petitioner submits that weighting element 11 is located in the Y1 coordinate, and weighting element 21 is located in the Y2 coordinate, thus satisfying the claimed limitation.

In its Response, Patent Owner argues that this finding “is simply speculation unsupported by the Beach patent.” PO Resp. 12. Patent Owner further asserts that, to the contrary, “[a]ll weighting elements within sleeves 5 and 6 respectively of the Beach patent are situated at substantially the same Y coordinate,” and because of this, Beach does not anticipate claim 1, and its dependent claim 8. *Id.*

Patent Owner’s argument is not persuasive as it is unsupported attorney argument. Argument of counsel cannot take the place of evidence lacking in the record. *Estee Lauder Inc. v. L’Oréal, S.A.*, 129 F.3d 588, 595 (Fed. Cir. 1997). In particular, Patent Owner’s assertion that all of Beach’s weighting elements (in sleeves 5 and 6) reside in the same Y coordinate is conclusory, and Patent Owner fails to provide evidence or adequate explanation to support its assertion. *See* PO Resp. 11–12. Further, we find nothing in the record to support this assertion. Instead, we adopt Petitioner’s arguments and evidence that Beach’s weights *11* and *21* reside in different Y coordinates. In support of its assertion, Petitioner submits annotated copies of Beach’s Figures 3 and 10, Table 3, and the declaration testimony of Mr. Beach, whose testimony we credit in declaring that weight *11* has a Y1 coordinate (Ex. 1006 ¶ 105), while weight *21* has a Y2 coordinate (*id.* at ¶ 104). As such, the preponderance of the evidence supports a finding that weighting element *11* is located in the Y1 coordinate, and weighting element *21* is located in the Y2 coordinate, thus satisfying the claimed limitation.

b. Claim 15

Claim 15 depends from claim 10, which recites in relevant part, “a golfer replaceable weighting element within said void space between a higher Y, higher Z coordinate to minimize ballooning, to a lower Y, lower Z coordinate to maximize said ballooning.” Ex. 1001, 10:61–64.

In its Response, Patent Owner asserts that “Beach does not teach any form of Y axis adjustability,” as “all possible adjustability of Beach occurs in the XZ plane.” PO Resp. 13.

Patent Owner’s argument is not persuasive, as it is premised on a misinterpretation of the claim. As discussed *supra*, and contrary to Patent Owner’s assertion, claim 10 does not require “Y axis adjustability.” Rather, the claim language relied upon by the Patent Owner merely requires a weighting element somewhere between a “higher Y, higher Z coordinate . . . to a lower Y, lower Z coordinate.” We are persuaded by Petitioner that Beach’s weighting element 11 is located in the Y1 (low Y) and Z1 (low Z) coordinates. Pet. 47–48. We, thus, conclude that the pertinent claim limitation is satisfied.

c. Conclusion—Anticipation by Beach

With the foregoing discussion in mind, and in considering the totality of the record now before us, we are persuaded that Petitioner has shown—by a preponderance of the evidence—that claims 8 and 15 are unpatentable as anticipated by Beach.

D. Motion to Exclude

Patent Owner filed a Motion to Exclude certain declaration testimony submitted by Petitioner. Paper 16 (“Motion”). Petitioner filed an Opposition to the Motion. Paper 19 (“Opposition”).

In its Motion, Patent Owner seeks to exclude portions of the declaration of Mr. Beach (Ex. 1006), which Petitioner submitted along with its Petition. Motion 4. Petitioner requests that we deny Patent Owner’s Motion. Opposition 7.

For the reasons discussed below, the Motion is denied.

The rules governing *inter partes* review set forth the proper procedure for objecting to, and moving to exclude, evidence when appropriate. *See, e.g.*, 37

C.F.R. § 42.64. When a party objects to evidence that was submitted during a preliminary proceeding, such an objection must be served within ten business days of the institution of trial. *Id.* § 42.64(b)(1). The objection to the evidence must identify the grounds for the objection with sufficient particularity to allow correction in the form of supplemental evidence. *Id.* This process allows the party relying on the evidence—to which an objection is served timely—the opportunity to correct, by serving supplemental evidence within ten business days of the service of the objection. *See id.* §§ 42.64(b)(1), 42.64(b)(2). If, upon receiving the supplemental evidence, the opposing party maintains its position that the evidence is inadmissible, the opposing party may file a motion to exclude such evidence. *Id.* § 42.64(c).

Patent Owner alleges various reasons why Mr. Beach's declaration should be excluded. Motion 5–12. The declaration, however, was submitted by Petitioner with its Petition for *inter partes* review. Pet. iv. Because the evidence was submitted during a preliminary proceeding, any objection to such evidence must have been served within ten business days of the institution of the trial. 37 C.F.R. § 42.64(b)(1). In its Motion, Patent Owner does not allege that Petitioner was served with any objection within ten business days of the institution of trial or at any other time. *See* Motion 4–12. In its Opposition, Petitioner asserts that Patent Owner failed to timely serve any objections to Mr. Beach's declaration. Opposition 1.

Accordingly, we find that Patent Owner did not timely serve objections to Mr. Beach's declaration. If Patent Owner served timely notice, as required by 37 C.F.R. § 42.64, Petitioner would have had the right to serve supplemental evidence

for the purpose of correcting any evidentiary deficiencies in the declaration. Thus, the Motion is denied and we exclude no portion of Mr. Beach's declaration.³

III. CONCLUSION

We determine that Petitioner has shown by a preponderance of the evidence that: (1) claims 1, 4–6, 8–13, 15–17, and 20 are unpatentable as anticipated by Parente; (2) claims 3 and 19 are unpatentable as obvious over Parente; (3) claims 2, 3, 7, 14, 18, and 19 are unpatentable as obvious over Parente and Ellingham; and (4) claims 8 and 15 are unpatentable as anticipated by Beach.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–20 are held unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Exclude (Paper 16) is denied; and

FURTHER ORDERED that 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.

³ In its Opposition, Petitioner requests that we issue sanctions and award Petitioner attorneys' fees that were incurred responding to Patent Owner's Motion. Opposition 5–6. The Rules require that Petitioner's request for sanctions be submitted in a separate motion, and that such a motion will only be entered with prior authorization from the Board. *See* 37 C.F.R. §§ 42.20(a), (b). Here, because Petitioner neither filed a motion to request sanctions nor sought our authorization to file such a motion, we have not considered Petitioner's request for sanctions.

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