

# United States Court of Appeals for the Federal Circuit

99-1234

KARSTEN MANUFACTURING CORPORATION,

Plaintiff-Appellant,

v.

CLEVELAND GOLF COMPANY,

Defendant-Appellee.

Thomas G. Watkins III, Cahill, Sutton & Thomas, PLC, of Phoenix, Arizona, argued for plaintiff-appellant.

Roger W. Parkhurst, Parkhurst & Wendel, of Alexandria, Virginia, argued for defendant-appellee. With him on the brief was Charles A. Wendel. Of counsel on the brief were Patricia A. Hubbard, Spencer & Hubbard PLC, of Phoenix, Arizona; and C. Randall Bain, Brown & Bain, of Phoenix, Arizona.

Appealed from: United States District Court for the District of Arizona

Judge Bruce M. Van Sickle

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DECIDED: March 22, 2001

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Before NEWMAN and MICHEL, Circuit Judges, and PLAGER, Senior Circuit Judge.\*

NEWMAN, Circuit Judge.

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\* Judge Plager assumed Senior Judge status on November 30, 2000.

Karsten Manufacturing Corporation ("Karsten") appeals the grant of summary judgment by the United States District Court for the District of Arizona,<sup>1</sup> construing the claims and, based on the claim construction, ruling that United States Patents Nos. 4,621,813 and 5,193,805 are not infringed and Patent No. 5,297,803 is invalid as to claims 1-8. The judgments of noninfringement of the '813 and '805 patents are affirmed. For the '803 patent, the judgment of invalidity of claims 1-6 is affirmed, and the judgment of invalidity of claims 7-8 is reversed.

We give plenary review to the construction of patent claims, as a matter of law. Markman v. Westview Instruments, Inc., 517 U.S. 370, 38 USPQ2d 1461 (1996). The grant of a motion for summary judgment of noninfringement or invalidity is reviewed on the same standard as is applied by the district court, viz. whether upon application of the correct law a reasonable jury could find for the nonmovant when all disputed material facts and factual inferences are resolved in favor of the nonmovant. When no reasonable jury could find for the nonmovant, the movant is entitled to judgment as a matter of law. See Anderson v. Liberty Lobby, Inc., 477 U.S. 242 (1986) (the purpose of the summary judgment procedure is not to deprive a litigant of a trial, but to avoid an unnecessary trial when there is only one reasonably possible outcome). We thus determine afresh whether the criteria for grant of summary judgment were met, and whether the judgment was correct. See, e.g., EMI Group North America, Inc. v. Intel Corp., 157 F.3d 887, 891, 48 USPQ2d 1181, 1184 (Fed. Cir. 1998).

#### THE '813 PATENT

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<sup>1</sup> Karsten Mfg. Corp. v. Cleveland Golf Co., No. CIV-95-2239-PHX-BMV (D. Ariz. Dec. 8, 1998).

Karsten describes the invention of the '813 patent as relating to the distribution of mass on fairway irons in order to increase the golf club's moment of inertia. Karsten charged Cleveland Golf with infringement of claims 1-9, literally or under the doctrine of equivalents. Claim 1 is the broadest claim, with emphasis added to the terms relevant to the district court's summary disposition of the infringement issues by its construction of these terms:

1. An improved correlated set of iron-type golf-clubs, each club having a head which includes a face for impacting a golf ball, a back surface, a heel portion, a toe portion and a sole, said sole having a trailing edge extending between said heel and toe portions,  
the improvement comprising at least a central portion of said trailing edge being indented toward said face at least 1/16 of an inch and having at least the lower portion of said back surface adjacent said indented trailing edge configured to conform to said indented trailing edge by sloping upwardly and inwardly from said indented trailing edge toward said face.

### ***The Correlated Set***

The district court ruled that a "correlated set" is a claim limitation, and "comprises two or more clubs which contain the same design characteristics [and] are sold together as a set." The court recognized the commercial usage "short set," and held that when two or more iron-type clubs are sold as a set, each iron must embody the claimed characteristics. Cleveland Golf sells its accused clubs in sets of 1-9 irons and P, D, S, and L wedges. The district court held that this is a "correlated set," and required that all of the clubs in the Cleveland set must embody all of the claim limitations in order to infringe the claim.

Karsten states that the district court erroneously interpreted the term "correlated set" to preclude infringement if the set of iron-type clubs is not completely correlated, that is, if any club does not have the claimed structure. Karsten argues that it suffices if at least two

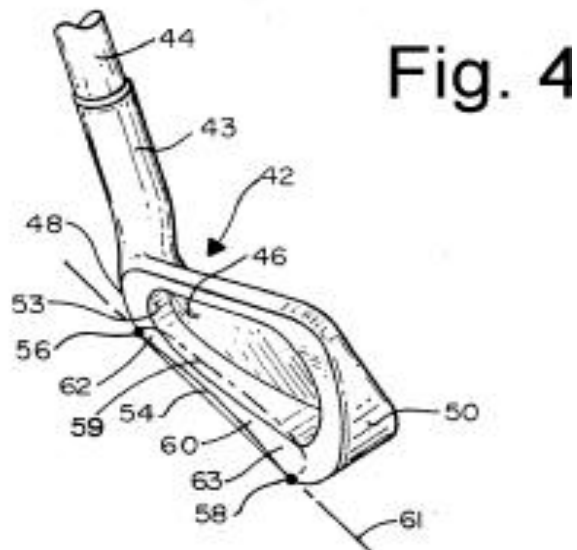
of the irons in a set of clubs have the claimed structure, however large the "set." Karsten states that the term "correlated set" was used in the specification and claims to distinguish fairway irons from putters and woods, and that the '813 invention does not require that every iron-type club that is included in a set must have the claimed structure. Karsten points out that the district court's construction would enable an infringer to avoid the claim simply by including one non-conforming club in the set.

Karsten also argues that this limitation appears only in the preamble and is irrelevant to the patentability of the claims. Karsten states that a preamble term that states an intended use does not limit the claimed device to that specific use, see Rowe v. Dror, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997), particularly when as here the use was not argued as relevant to patentability. The district court, however, deemed the "correlated set" a limitation of claim scope, in view of Karsten's description of the invention in the specification as relating to a correlated set of irons, and Karsten's inclusion of this term in all of the claims.

We agree with the district court that this term, appearing in every claim, does not simply refer to the prior art or to a possible use, but describes and limits the invention being claimed. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1306, 51 USPQ2d 1161, 1166 (Fed. Cir. 1999). The district court correctly defined the term "correlated set" in the context of the specification and the evidence of customary usage. We confirm the court's ruling that the claims require that each iron-type club in a set of at least two clubs that are sold together must embody the claimed elements.

### ***The Adjacent Back Surface***

Karsten states that the district court erroneously identified the "back surface" as used in claim 1, and that this error led the court to misconstrue the meaning of "sloping upwardly and inwardly," resulting in an erroneous construction of these terms that excluded the Cleveland clubs. Karsten argues that "the lower portion of said back surface adjacent said indented trailing edge" is the encircled area **60**, indicated by dashed line **59** in Figure 4 of the '813 patent:



The district court construed the "back surface adjacent said indented trailing edge" as excluding the surfaces of the cavity. This construction is in accordance with the description in the specification that the "back surface" that is adjacent to the indented trailing edge circumscribes but does not include the cavity surfaces. The court was correct in rejecting Karsten's proposed construction, which departs from this description.

The district court also required that "the surface adjacent said indented trailing edge [must] slope upward and inward" relative to the trailing edge and the face of the club. Karsten states that it was incorrect to interpret "sloping inwardly" as relative to the trailing edge and the club face, instead of relative to the ground when the sole of the club is placed horizontally on the ground. However, the specification describes the lower back surface area as sloping inwardly and upwardly from the trailing edge as shown in Figures 5, 7, and 9, which illustrate these parameters relative to the trailing edge and the hitting face, not the ground. The district court's claim construction correctly reflected the description in the specification, and is confirmed.

### ***Infringement***

Applying the construed claims to the accused Cleveland 792 set of iron-type clubs, the district court determined that all of the clubs in the Cleveland set do not meet the limitation whereby a back surface, adjacent to the indented trailing edge, slopes upwardly and inwardly toward the face of the clubs. In the absence of dispute as to the structure of the Cleveland clubs, summary judgment that there was not literal infringement was properly granted, for all of the claimed limitations are not embodied on the Cleveland clubs.

Karsten also asserts infringement by application of the doctrine of equivalents. During prosecution Karsten, by amendment of the claims following a rejection on prior art, narrowed the description of the back surface by adding the limitation that the lower portion adjacent the indented trailing edge slopes upwardly and inwardly. Thus Karsten is precluded from asserting that the Cleveland 792 iron-type golf clubs contain an equivalent of this limitation. See Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d

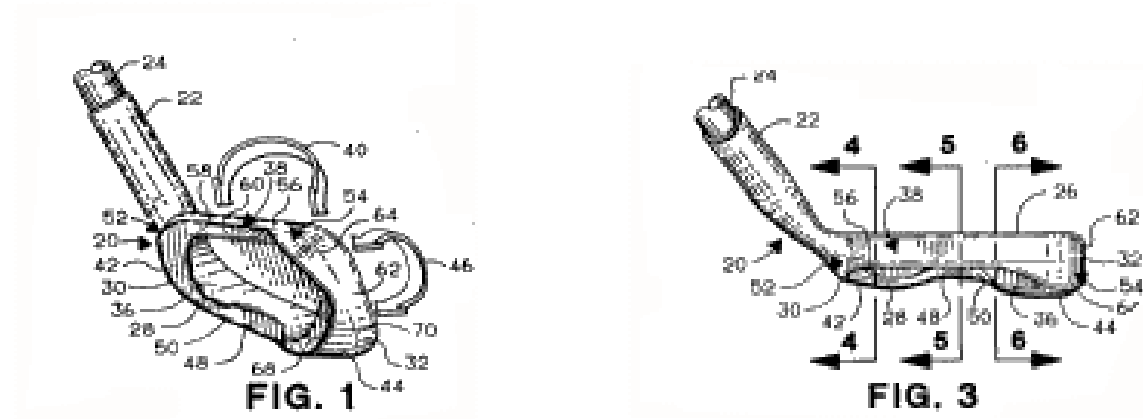
558, 586, 56 USPQ2d 1865, 1872 (Fed. Cir. 2000) (*en banc*) (a claim element that has been narrowed by amendment for reasons related to patentability is not entitled to any scope of equivalency).

The district court, deciding the question of equivalency before this Festo decision, ruled that Karsten had disclaimed, during prosecution, the scope that would be needed to reach the Cleveland clubs, citing Warner-Jenkinson, Inc. v. Hilton Davis Chemical Co., 520 U.S. 17, 31, 41 USPQ2d 1869, 1871-72 (1997). We agree that the prosecution history produced an estoppel against the asserted scope of equivalency, whether applying the law of estoppel as of the time of the district court's decision, or the law as set forth in Festo.

The judgment of noninfringement of the '813 patent is affirmed.

#### THE '805 PATENT

The '805 patent is directed to an iron-type club head with enlarged masses at its upper corners, called heel and toe protuberances and illustrated at 52 and 54 of Figures 1 and 3 of the '805 patent:



Claims 1, 2, 4, 6, 8-10, 12, 14, 16, and 17 are in suit. Claims 1 and 9 are the broadest



claims, and are similar in scope except that claim 9 does not require a "correlated set," as does claim 1. We thus concentrate this review on claim 9, with emphases added to the disputed limitations:

9. A cavity-back iron-type golf club comprising:
- a) a head having a cavity formed in the back thereof, a front face for impacting a golf ball, a back surface in rearwardly spaced relationship with the face and disposed to circumscribe the opening of the cavity, a heel portion, a toe portion and a sole, said heel having an elongated upper end extending between the heel and toe portions, the sole of said head having a trailing edge that extends between the heel and toe portions of said head, the trailing edge being indented centrally thereof toward the front face to said head and having the lower part of the back surface adjacent the indented trailing edge configured to conform to the indented trailing edge by sloping upwardly and inwardly therefrom toward the front face of said head;
  - b) a top ridge formed on said head and extending longitudinally along the upper end between the heel and toe portions thereof and having a longitudinal center intermediate the heel and toe portions of the head;
  - c) an upper heel protuberance located at a corner junction formed at the intersection of the heel end of said top ridge and the heel portion of said head, said upper heel protuberance being in the form of an enlarged mass concentration which protrudes rearwardly from the back surface of said head; and
  - d) an upper toe protuberance located at a corner junction formed at the intersection of the toe end of said top ridge and the toe portion of said head, said upper toe protuberance being in the form of an enlarged mass concentration which protrudes rearwardly from the back surface of said head.

### ***Lower Back Surface Sloping Inwardly and Upwardly (Clause a)***

The district court construed these terms in the same way as for the '813 patent, discussed ante. Although Karsten argues that these terms were incorrectly construed in the '813 patent and should not be given the same incorrect construction in the '805 patent on a later invention, the specification and drawings of the '805 patent support the district court's construction.

The district court held that the "back surface" as used in the claims means only "the

substantially flat back surface of the perimeter weighting element" and not the entire back surface of the club head. Karsten argues that the '805 specification, while describing the "back surface" as "disposed to circumscribe the opening of the cavity," elsewhere in the specification states that the club head is "formed with a cavity in the back surface." However, it is clear enough that the claim's usage of back surface "adjacent the indented trailing edge" means the back surface of the perimeter weighting element. The district court correctly held that this surface must slope upwardly and inwardly from the trailing edge toward the front face of the club.

Since claim 9 does not require a correlated set, the district court reviewed the clubs individually. Some of the irons of the Cleveland 792 set contain a lower back surface adjacent the trailing edge which slopes upwardly and inwardly, while others do not. The court determined that Cleveland's 2-iron and D-wedge literally embody the claimed structure of the lower back surface, and are literally covered by clause (a) of claim 9. Cleveland does not now dispute this ruling.

### ***Heel and Toe Protuberances From The Back Surface (Clauses c and d)***

The district court ruled that the prosecution history requires that the heel and toe protuberances "bulge beyond the surrounding or adjacent surfaces," for this construction was pressed by Karsten in order to distinguish the prior art Antonius Patent No. 4,965,386.

The district court observed that the Cleveland clubs, including the 2-iron and D-wedge, do not have such protruding bulges in their heel and toe masses.

Karsten argues that the district court erroneously limited the claims to the preferred embodiment as shown in the patent drawings, and that the correct claim construction

requires only enlarged heel and toe masses protruding rearwardly, without measuring the extent of the protuberances. Karsten also argues that since the "back surface," correctly construed, includes the cavity's back surface, the heel and toe masses need protrude only beyond the cavity surface and need not protrude beyond the perimeter in order to be within the scope of the claims. The district court did not accept this argument, and held Karsten to its position during prosecution that the protuberances "bulge beyond the surrounding or adjacent surfaces." We confirm the district court's construction, for during prosecution Karsten made clear that the protuberances bulge beyond the surface of the perimeter. On this construction there can not be literal infringement, for neither the heel nor toe mass of the Cleveland clubs protrudes or bulges beyond the perimeter of the adjacent back surface.

Karsten also asserted infringement by equivalency. However, the amendments and accompanying arguments made to overcome the rejection based on the Antonius '386 patent produced a bar to assertion of equivalency based on the extent of the bulge of the heel and toe protuberances. See Festo, 234 F.3d at 586, 56 USPQ2d at 1872. Alternatively, the district court's ruling of prosecution history estoppel is affirmed on the law then guiding the court, for Karsten yielded, in prosecution of the '805 application, the scope of clauses c) and d) that would be needed to reach the Cleveland clubs under the doctrine of equivalents.

The judgment of non-infringement of the '805 patent is affirmed.

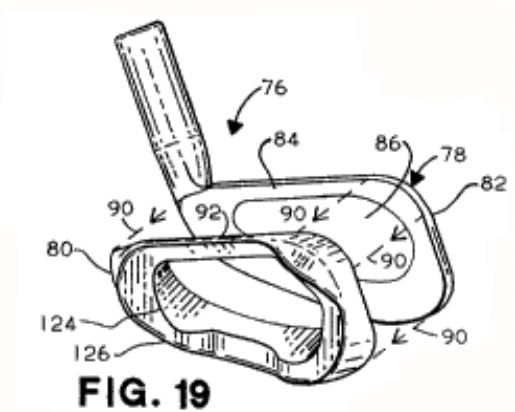
#### THE '803 PATENT

On Cleveland's motion for summary judgment of invalidity of claims 1-8 of the '803 patent, the district court ruled the claims invalid and did not reach the issue of infringement.

Claims 1-6 were held invalid for lack of novelty, 35 U.S.C. §102(b), and claims 7 and 8 were held invalid for obviousness, 35 U.S.C. §103. Claim 1 follows:

1. A golf club iron-type head comprising:  
a blade element having a front face, a back face spaced apart from in a generally rearward direction and oriented substantially parallel to the front face, and a central area on the back face circumscribed by a back perimeter surface;  
and a substantially ring-shaped, variable mass perimeter weighting element extending from the back perimeter surface of the blade element in the generally rearward direction and including a sole and a top rail located above the sole in a generally vertical direction, the top rail having a middle portion and a toe portion,  
each of the top rail portions having a depth measured in the generally rearward direction,  
and the toe portion depth exceeding the middle portion depth.

The '803 club is depicted in patent Figure 19, which shows the back face of the blade separated from the perimeter weighting element:



**Anticipation - Claims 1-6**

Invalidity on the ground of "anticipation" requires lack of novelty of the invention as claimed. The invention must have been known to the art in the detail of the claim; that is, all of the elements and limitations of the claim must be shown in a single prior reference,

arranged as in the claim. See C.R. Bard, Inc. v. M3 Systems, Inc., 157 F.3d 1340, 1349, 48 USPQ2d 1225, 1229-30 (Fed. Cir. 1998); Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The reference on which the district court relied in its judgment of anticipation is the



Wilson 1200 Power Sole club head, pictured in the record as follows:

The district court did not find that the Karsten '803 club head and the Wilson club head are identical; but the court ruled that claims 1-6 read on the Wilson club head and thus are invalid for "anticipation." Karsten argues that even if the claims can be so read when construed in the abstract, the clubs are clearly not the same and the court should have construed the claims as narrowly as was necessary to preserve their validity.

Karsten argues that the district court gave too broad a construction to the claim term "substantially ring-shaped variable mass perimeter weighting element," pointing out that the Wilson ring shape is less circular than the Karsten ring shape as shown in the '803 drawings. Karsten also argues that the court should have limited "central area on the back face" to the open area as shown in the Karsten drawings, thereby distinguishing the Wilson central area. Karsten states that when these claim terms are construed in light of the '803

specification and drawings they do not encompass the Wilson 1200 club head, and thereby avoid "anticipation" by the Wilson 1200.

Claims amenable to more than one construction should, when it is reasonably possible to do so, be construed to preserve their validity. See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1557, 37 USPQ2d 1609, 1617 (Fed. Cir. 1996); Carman Indus. Inc. v. Wahl, 724 F.2d 932, 937 n.5, 220 USPQ 481, 485 n.5 (Fed. Cir. 1983). However, when the claim's language embraces the prior art, the court is not unlimited in the extent to which it can interpret the claims. See Rhine v. Casio, Inc., 183 F.3d 1342, 1345, 51 USPQ2d 1377, 1379 (Fed. Cir. 1999) (claim can not be construed contrary to its plain language). The jurisprudence of claim construction reflects the difficult balance between a patentee's exhortation that courts should read the claims broadly and unlimited to the specific embodiments shown in the specification, and the rule that claims should be construed sufficiently narrowly to preserve their validity. In counterpoint, an accused infringer often argues, as in this case, that if the claims are read sufficiently broadly as to reach the accused device, the claims also read on the prior art and are invalid. The complexity increases when, as here, the prior art was previously uncited and the court is urged, in essence, to reexamine or reissue the patent with significantly narrowed claim scope. In this case the Wilson 1200 club head had not been cited by the examiner; Karsten argues that claims 1-6 should be construed as limited sufficiently to avoid anticipation by the Wilson head.

In recognition of the hazards of claim presentation and interpretation, the vagaries of patent examination, and the risks of later-discovered prior art, it is customary for patentees to present claims of varying scope or stated in a variety of ways. Thus broader claims may

fall when they read on newly discovered prior art, while subordinate claims containing additional limitations may survive. Claims 1-6 were found by the district court to read on the Wilson 1200 club. Karsten does not argue that the additional limitations in dependent claims 2-6 distinguish the Wilson 1200 club. Although we agree with Karsten that the specific embodiments pictured in the drawings of the '803 patent are not identical to the picture of the Wilson 1200, claims 1-6 do not reflect such differences. The claims can not be rewritten by the court to avoid the impact of newly discovered prior art, for the role of "claim construction" is to describe the claim scope as it was intended when examined and obtained by the applicant, not as it might have been limited upon a different record of prosecution and prior art.

The judgment of invalidity of claims 1-6 is affirmed.

### ***Obviousness - Claims 7-8***

Claims 7 and 8 contain limitations that are conceded not to be present in the Wilson 1200 head:

7. The golf club iron-type head of claim 1, wherein the top rail also has a heel portion with a depth measured in the generally rearward direction, and wherein the top rail heel portion depth exceeds the top rail middle portion depth.

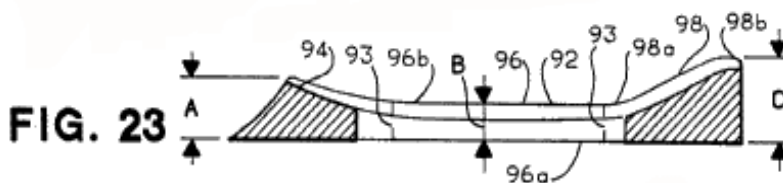
8. The golf club iron-type head of claim 7, wherein the top rail toe portion depth also exceeds the top rail heel portion depth.

The district court correctly concluded that these claims are not invalid on the ground of anticipation, for they do not read on the Wilson 1200 or any other prior art. However, the court held claims 7 and 8 invalid on the ground of obviousness.

Obviousness is a question of law based on underlying questions of fact. Advanced

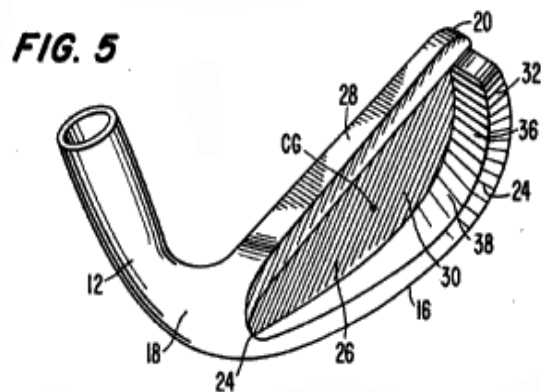
Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1284-85, 54 USPQ2d 1673, 1681 (Fed. Cir. 2000). The issue of obviousness may be decided on motion for summary judgment when the underlying facts are not in dispute, or when the movant must prevail even if disputed facts and inferences therefrom are resolved in favor of the non-movant. See Anderson v. Liberty Lobby, *supra*. In this case there is no dispute as to the scope and content of the prior art, the differences between the patented invention and the prior art, or the state of ordinary skill in the field of the invention. We thus review whether the judgment of invalidity is correct, as a matter of applying the law to the undisputed facts.

The limitations specific to claims 7 and 8 are illustrated in cross-section in Figure 23 of the '803 patent, where the depth of the heel portion of the top rail of the club head is shown at A, the middle portion depth at B, and the toe portion at C:



In ruling that the subject matter of claims 7 and 8 would have been obvious to a person of ordinary skill in this field, the district court relied on the combination of the Wilson 1200 Power Sole and the club shown in the prior art Antonius '151 patent, illustrated as follows:





The court concluded that "one skilled in the art would consider it obvious to combine" the Wilson 1200 Power Sole club and the Antonius '151 club to obtain the Karsten club having the limitations of claims 7 or 8.

In holding an invention obvious in view of a combination of references, there must be some suggestion, motivation, or teaching in the prior art that would have led a person of ordinary skill in the art to select the references and combine them in the way that would produce the claimed invention. See, e.g., Heidelberg Druckmaschinen AG v. Hantscho Commercial Prods., Inc., 21 F.3d 1068, 1072, 30 USPQ2d 1377, 1379 (Fed. Cir. 1994) (When the patent invention is made by combining known components to achieve a new system, the prior art must provide a suggestion, or motivation to make such a combination."); Northern Telecom v. Datapoint Corp., 908 F.2d 931, 934, 15 USPQ2d 1321, 1323 (Fed. Cir. 1990) (It is insufficient that the prior art disclosed the components of the patented device, either separately or used in other combinations; there must be some teaching, suggestion, or incentive to make the combination made by the inventor."); Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1044, 1051, 5 USPQ 1434, 1438 (Fed. Cir. 1988) (same).

The Antonius reference shows a perimeter weighted iron wherein mass is added at

the upper end of the club head for the stated purpose of raising the head's center of gravity.

In Antonius the top rail is thicker at the heel and thinner at the toe. In contrast, the Wilson 1200 Power Sole reference states that the purpose of the Wilson perimeter weighting is "relocating weight . . . to lower the center of gravity even further." In Wilson the top rail is thicker at the toe and thinner at the heel. As Karsten points out, the top ridge configurations of the Wilson 1200 and the Antonius '151 club head are directly opposing.

Such conflicting teachings can not reasonably be viewed as suggesting their combination into a head having the limitations set forth in claims 7 and 8. Nor is there any suggestion within these references of their combination in order to lower the center of gravity and enlarge the "sweet spot," as Karsten teaches in the '803 patent. Cleveland Golf offered no source of motivation or suggestion, other than the hindsight knowledge of the Karsten club head shown in the '803 patent, to select and combine these parts of the structures of Antonius and Wilson. As a matter of law, absent such suggestion or motivation or teaching in the prior art, the subject matter of claims 7 and 8 is not invalid on the ground of obviousness. That judgment is reversed. We remand for determination of the question of infringement of claims 7-8.

No costs.

AFFIRMED IN PART, REVERSED IN PART, AND REMANDED

