

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN B. HOEFLICH and ROBIN D. ARTHUR

Appeal No. 2002-0265
Application No. 08/787745

ON BRIEF

Before COHEN, ABRAMS, and NASE, Administrative Patent Judges.
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-3, 5-9 and 11-21, which are all of the claims pending in this application.

We REVERSE AND ENTER A NEW REJECTION UNDER
37 CFR § 1.196(b).

BACKGROUND

The appellants' invention relates to a golf club shaft. An understanding of the invention can be derived from a reading of exemplary claim 1, which has been reproduced below.

The prior art references of record relied upon by the examiner are:

Wanaga	4,725,060	Feb. 16, 1988
Akatsuka <u>et al.</u> (Akatsuka '396)	5,156,396	Oct. 20, 1992
Hogan	5,308,062	May 3, 1994
Huang	5,571,051	Nov. 5, 1996
Akatsuka (Akatsuka '450)	5,437,450	Aug. 1, 1995

Claims 1-3 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Akatsuka '450.

The following rejections stand under 35 U.S.C. § 103(a):

Claim 5 on the basis of Akatsuka '450 in view of Hogan.

Claim 6 on the basis of Akatsuka '450 in view of Hogan and Akatsuka '396.

Claims 7-9, 11, 13-16 and 18 on the basis of Akatsuka '450 in view of Hogan and Iwanaga.

Claim 12 on the basis of Akatsuka '450 in view of Hogan, Iwanaga and Akatsuka '396.

Claim 17 on the basis of Akatsuka '450 in view of Hogan, Iwanaga and Huang

Claims 19 and 20 on the basis of Akatsuka '450 in view of Hogan.

Claim 21 on the basis of Akatsuka '450 in view of Iwanaga.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the Answer (Paper No. 24) for the examiner's complete reasoning in support of the rejections, and to the Brief (Paper No. 23) and Reply Brief (Paper No. 25) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

The Section 102 Rejection Of Claims 1-3

Independent claim 1 and dependent claims 2 and 3 stand rejected as being anticipated by Akatsuka '450. Anticipation is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of the claimed invention. See, for example, In re Paulsen, 30 F.3d 1475, 1480-1481, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994) and In re Spada, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

The appellants' invention is directed to improving composite golf club shafts by controlling the flex properties thereof through the placement of what is known in the art as the "flex point" or the "kick point" of the shaft. According to the appellants, flex

control was obtained in the prior art by providing intentional discontinuities¹ in the shaft, which the appellants believe gives rise to certain disadvantages (specification, pages 1 and 2). The desired characteristics of transmitting a good “feel” the player’s hands while providing the shaft with a high degree of controlled flexure are accomplished in accordance with the invention by providing a shaft in which the diameter of the butt section is reduced with respect to prior art shafts and which tapers without intervening discontinuities to a tip portion, with the diameter of the butt end and the tip end being within particular ranges.

The invention is expressed in claim 1 in the following manner:

1. A golf club shaft comprising:

an elongated tubular shaft comprising a plurality of layers of fibers imbedded in a synthetic resin, said elongated shaft having a butt end of relatively larger cross sectional diameter tapering without intervening discontinuities to a tip end of relatively smaller diameter, said tip end having an outside diameter between .330 and .400 inches;

said butt end having an outside diameter of .400 to .540 inches.

Our understanding of the examiner’s rejection of claim 1 is that all of the subject matter recited therein is disclosed in Akatsuka ‘450 in view of the fact that the ranges disclosed in the reference in column 5, lines 62-68, encompass the ranges for the butt end recited

¹The appellants have defined “discontinuity” in terms of providing examples by way of reference to three prior art patents (specification, paragraph bridging pages 1 and 2). The examples of intentional discontinuities discussed are (1) mismatching the elasticity of the materials making up the lower shaft and the butt portion, (2) imposing a discontinuous flexible zone (bubble) between a rigid butt section and the rest of the shaft, and (3) abruptly increasing the diameter of the shaft from a narrow butt to a wider section immediately below the butt section.

in claim 1, and overlap the ranges for the tip end. We do not agree with the examiner's conclusion that this causes the reference to anticipate claim 1, and we therefore will not sustain the rejection. Our reasoning follows.

We first observe that the ranges recited in claim 1 are set forth by the appellants in the original disclosure of the invention on page 2 of the specification and in the description on page 7 of the finished shafts, which are shown in Figures 9A and 9B, as well as appearing in the claims as originally filed. The appellants also explain in the discussion on page 7 of the specification that there is an element of criticality associated with the ranges prescribed for the tip portions and the butt portions.

As shown in Figs. 9A and 9B, the finished shafts 140, 150 have a standard nominal tip diameter of .370 inches, or .335-.400 inch in diameter for woods and .330-.390 inch in diameter for irons. The tip portion extends about 1 to 6 inches in length from the tip of the shaft. The shaft then tapers to the maximum outside diameter at the butt end of from .400-.560 inches in diameter, preferably from .450 to .550 and most preferably from .520 to .540 inches in diameter. Shafts having a butt diameter significantly greater than .560 inch do not exhibit a significant degree of overall flex improvement over prior art shafts; and shafts having a butt diameter significantly below .400 are prone to breakage.

As pointed out by the appellants in their arguments, the manner in which the issue of anticipation of ranges should be evaluated is discussed in Section 2103.03 of the Manual of Patent Examining Procedure (MPEP), with reference to controlling case law. According to the guidance provided in the MPEP, a claimed range is anticipated if a specific example of the range is found in the prior art. Akatsuka '450 sets forth two examples of golf club shafts made in accordance with the invention disclosed therein,

and neither meets this requirement. In example 1 (column 8), while the tip end diameter of .334 inches is within the appellants' claimed range, the butt end diameter of .590 inches is well beyond the claimed range. In example 2 (column 9), the butt end diameter of .520 inches is within the claimed range, but the tip end diameter of .189 is considerably below the claimed range. Thus, neither example anticipates the claimed range.

The MPEP also addresses the situation in which the prior art teaches a range which touches or overlaps the claimed range but where, as is the situation here, no specific examples fall within the range. In column 5 Akatsuka discloses a tip end range diameter of .173-.488 inches, which encompasses the claimed range of .330-.400 inches, and a butt end range of .492-.728, which overlaps the upper end of the claimed range of .400-.540 inches. The MPEP counsels that when this is the case, in order to be anticipatory the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute," a decision that is fact dependent and is similar to that of "clearly envisaging" a species from a generic teaching. With regard to this theme, when the claimed invention is not identically disclosed in a reference, and instead requires picking and choosing among a number of different options disclosed in a reference, then the reference does not anticipate. 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 Karsten Mfg. Corp. v. Cleveland Gulf Co., 242 F.3d 1376, 1383, 58 USPQ2d 1286, 1291 (Fed. Cir. 2001; Akzo N.V. v. International Trade Commission, 808 F.2d. 1471, 1480, 1 USPQ2d 1241, 1245-46 (Fed. Cir. 1986) cert. denied 107 S.Ct 2490 (1987); In re Arkley, 455 F.2d 586, 587-88, 172 USPQ 524, 526 (CCPA 1972).

Akatsuka '450 requires one of ordinary skill in the art to pick and choose diameters from the disclosed ranges in order to meet the terms of claim 1. For example, with regard to the tip end diameter, one would have to discard the lower 50% and the upper 28% of the range of Akatsuka '450, and choose a value from the remaining 22%, in order to fall within the range recited in claim 1. As for the butt end diameter, one would have to discard the upper 80% and pick a value from the lower 20% of the Akatsuka '450 range to fall within the range of claim 1. Since the objects of the invention in Akatsuka '450 differ from those of the appellants' invention, no direction is provided by Akatsuka '450 to do so. Especially when considered in the light of the guidance provided by the two examples in the reference, where either the tip diameter or the butt diameter falls outside of the claimed ranges, it is our opinion that Akatsuka '450 does not disclose the ranges in sufficient specificity to constitute an anticipation of the subject matter recited in the claim. We find the examiner's rationale that the artisan would have selected the diameters from within the claimed ranges because "golfers come in all strengths and sizes and require different flexibilities and dimensions" and

“[t]he majority of golfers would not benefit from the two examples given since there is such a variation between golfers” (Answer, page 15) not to be persuasive.

The Section 102 rejection of independent claim 1 therefore is not sustained nor, it follows, is the like rejection of claims 2 and 3, which depend from claim 1.

The Section 103 Rejection Of Claims 5 And 6

Claim 5 stands rejected as being obvious in view of the combined teachings of Akatsuka '450 and Hogan, and claim 6 on the basis of those references taken further in view of Akatsuka '396. The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellants' disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

Claim 5 adds to claim 1 the requirement that the shaft further comprise two layers of graphite fibers imbedded in epoxy and having fibers oriented at angles of +45°

and -45° respectively. According to the examiner, Akatsuka '450 fails to disclose only the graphite fibers, which are taught by Hogan. The appellants argue that the selection of ranges would not have been obvious to one of ordinary skill in the art, for the same reasons as were argued with regard to the rejection under Section 102, and further point out that the claimed ranges are critical because a shaft made in accordance with them has considerably better feel as well as a kick point considerably closer to the butt end. As evidence of these results, the appellants rely upon Figures 10 and 11 of their drawing.

The first issue here is whether one of ordinary skill in the art would have been motivated by Akatsuka '450 to select a tip end diameter from 22% of the mid-portion and a butt end diameter from the lower 20% of the ranges disclosed therein, in order to meet the terms of claim 1, from which claim 5 depends. We think not. The comments we made above with regard to the selection of ranges are pertinent here, also. The teachings of Akatsuka '450 are directed to accomplishing objectives that are different from those of the claimed invention. When the purposes of the ranges are different and the overlapping simply occurs by happenstance, obviousness is not present. See In re Fine, 837 F.2d 1071, 1075-76, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988). We also note that the appellants have explained on page 8 of their specification why the claimed ranges are critical to the accomplishment of the objective of the invention, and have provided in the declarations of Mr. Olsavsky and Mr. Hoeflich explanations of what one

of ordinary skill in the art would not have been taught by Akatsuka '450 regarding selection of butt and tip diameters, as well as the advantages of using the claimed ranges. Consideration of the teachings of Hogan does not overcome the problems with Akatsuka '450 regarding the issue of the selection of values from the ranges.

In view of the foregoing, we fail to perceive any teaching, suggestion or incentive which would have led one of ordinary skill in the art to pick and choose the values from ranges disclosed by Akatsuka '450 which would be necessary in order to meet the terms of the claim. From our perspective, the only suggestion for doing so resides in the luxury afforded one who first viewed the appellants' disclosure which, of course, is not a proper basis for a rejection under Section 103. In re Fritch, 972 F.2d 1260, 1264, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992).

It therefore is our conclusion that the evidence adduced by the examiner does not establish a prima facie case of obviousness with regard to the subject matter recited in claim 5, and we will not sustain the rejection.

We reach the same conclusion with regard to claim 6, which depends from claim 1 and stands rejected as being unpatentable over Akatsuka '450 taken in view of Hogan and Akatsuka '396. Hogan again was cited for disclosing a shaft made of graphite fibers, and Akatsuka '396 was added for teaching the orientations of fiber layers recited in claim 6. Be that as it may, neither of the secondary references overcomes the

problems regarding the selection of ranges found in claim 1, and we therefore will not sustain the rejection of claim 6.

New Rejection By This Panel Of the Board

Pursuant to our authority under 37 CFR § 1.196(b), we enter the following new rejection:

Claims 7-9 and 11-21 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the appellants regard as the invention.

The second paragraph of 35 U.S.C. § 112 requires claims to set out and circumscribe a particular area with a reasonable degree of precision and particularity. In re Johnson, 558 F.2d 1008, 1015, 194 USPQ 187, 193 (CCPA 1977). In making this determination, the definiteness of the language employed in the claims must be analyzed, not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art. Id.

Claim 7 is directed to a composite golf club “having a butt end comprising a substantially cylindrical cross section” (emphasis added) which transitions to a “tip end.” Independent claims 13 and 19 recite a butt “end” having a cylindrical cross section, and independent claim 21 a butt “end” having “at least one portion with an outside diameter of between .400 and .540 inches (emphasis added). In addition, claim 14 adds to claim

13 the requirement that the taper of the intermediate section “is more significant than [the taper] in said tip and butt sections,” notwithstanding the fact that the only recitation relating to “tip” in this claim is tip “end.” Claims 15, 16 and 20 require the butt “end” to include “parallel sidewalls,” and claim 17 that the butt “end” “include at least one cross-section diameter between .450 and .475 inches.” Claim 19 also states that the tapered intermediate “section” has a more significant taper than “both said butt and said tip ends.”

The common applicable definition of “end” is “the part of an area that lies at the boundary,” “a point that marks the extent of something.”² While an “end” could have a circular cross section, to describe it as having a cylindrical cross section implies that the “end” is not an end in accordance with the common definition, but has a length, that is, it is a three dimensional element. This implication is confirmed by the limitations added in other claims regarding “ends” having parallel sidewalls and taper. However, support for a definition of “end” other than the common definition is not found in the specification. In fact, the specification appears to support the proposition that “end” should be defined by its common meaning. We hasten point out at this juncture that with regard to our action concerning claims 1-6, we interpreted “end” as commonly defined, that is, to mean the boundary or extent of the shaft, considering the absence of terminology in

²See, for example, Webster’s New Collegiate Dictionary, 1973, page 375.

those claims that is incompatible with this definition, which is not the case with the other claims.

In the description of the prior art in the specification, reference is made to shafts having "butt sections" (lines 2, 4 and 6) which make up one of the two sections of the shaft. In the summary of the invention on page 2, the specification explains that the present invention has a reduced diameter "butt section" that tapers to a "tip portion" (line 24), but goes on to describe a reduced diameter "cylindrical butt portion" (line 26). "Butt portion" also is used to describe the portion toward which the kick point was moved in a prior art patent (page 5, line 25). A description of the mandrels on which the shafts are made begins on page 6, and the mandrels are described as having "a tip end 31 and a butt end 32" (line 4). Thus, in Figure 5A, 31 and 32 denote "ends" as commonly defined, while the numerals 120 and 128, the lead lines of which point to cylindrical elements, each denote "a cylindrical portion" (lines 15-17). Further inconsistency exists in describing the shafts in Figures 9A and 9B, for it is stated that "[t]he tip portion extends about 1 to 6 inches from the tip of the shaft. The shaft then tapers to . . . the butt end" (page 7, lines 23 and 24), and then the specification goes on to explain that the grips are molded to fit the "butt" of the finished shaft (page 8, line 1). However, Figures 9A and 9B each appear to be divided into a butt portion (or section) 5" long, a center portion 29" long, and a tip portion 6" long, although they are not provided with any labels.

From our perspective, the specification would have instructed one of ordinary skill in the art that “end” denotes a boundary or extent of an element, and not a section or a portion. Thus, according to the specification, an “end” does not have a cylindrical cross section, a taper, parallel sidewalls, or a portion of a particular diameter. This being the case, claims 7-9 and 11-21 are indefinite because they do not describe the invention with a reasonable degree of precision and particularity, even when interpreting them in the light of the specification, and their the metes and bounds cannot be determined.

The Section 103 Rejections Of Claims 7-9 and 11-21

When no definite meaning can be ascribed to certain terms in a claim, the subject matter does not become obvious, but rather the claim becomes indefinite. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Since it is clear to us that considerable speculation and assumptions are necessary to determine the metes and bounds of what is being claimed in claims 7-9 and 11-21, and since a rejection under 35 U.S.C. § 103 cannot be based upon speculation and assumptions, we are constrained to reverse the examiner's rejections of these claims. In re Steele, 305 F.2d 859, 862, 134 USPQ 292, 295 (CCPA 1962). This action should not, however, be construed as an indication that the claimed subject matter would not have been obvious in view of the prior art cited against the claims. We have not addressed this issue, for to do so would require on our part the very speculation which formed the basis of our

rejection under Section 112. Further in this regard, however, the reasoning we articulated in our refusal to sustain the rejection of claims 1-3 under 35 U.S.C. § 102 and claims 5 and 6 under 35 U.S.C. § 103 should not be overlooked in future prosecution of claims 5-9 and 11-21, should the indefiniteness present therein be overcome by appropriate recasting of the terminology in issue.

The rejection of claims 7-9, 11, 13-16 and 18 as being unpatentable over Akatsuka '450 in view of Hogan and Iwanaga is not sustained.

The rejection of claim 12 as being unpatentable over Akatsuka '450 in view of Hogan, Iwanaga and Akatsuka '396 is not sustained.

The rejection of claim 17 as being unpatentable over Akatsuka '450 in view of Hogan, Iwanaga and Huang is not sustained.

The rejection of claims 19 and 20 as being unpatentable over Akatsuka '450 in view of Hogan is not sustained.

The rejection of claim 21 as being unpatentable over Akatsuka '450 in view of Iwanaga is not sustained.

CONCLUSION

None of the examiner's rejections are sustained.

The decision of the examiner is reversed.

Pursuant to 37 C.F.R. § 1.196(b), claims 7-9 and 11-21 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the appellants regard as the invention.

This decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b)(amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53,131, 53,197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. & Trademark Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides that, "A new ground of rejection shall not be considered final for purposes of judicial review."

37 CFR § 1.196(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (§ 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

REVERSED; 196(b)

IRWIN CHARLES COHEN
Administrative Patent Judge

NEAL E. ABRAMS
Administrative Patent Judge

JEFFREY V. NASE
Administrative Patent Judge

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