Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DON T. CAMERON and AUGUST L. SLIVNIK

Appeal No. 2002-1904
Application No. 09/156,540

HEARD: April 16, 2003

Before JERRY SMITH, LEVY, and BLANKENSHIP, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-34, which are all the claims in the application.

We affirm-in-part.

BACKGROUND

The invention is directed to apparatus and method for analyzing a golfer's swing and determining a suitable golf club configuration for that individual. Claim 16 is reproduced below.

> 16. A method for configuring a golf club in accordance with an individual golfer's swing, comprising the steps of:
>
> providing to a golfer a first golf club with predetermined dimensions, said first golf club including a shaft and club head with a strike face;
>
> positioning a golf ball in a striking location;
>
> positioning high-speed video camera means near the striking location to obtain video images of the first golf club, the golf ball, and the golfer using the first golf club during the golfer's swing at the golf ball in the striking location;
>
> activating said video camera means to obtain the video images during and after impact by said first golf club upon the golf ball;
>
> storing images obtained by said video camera means during a golfer's swing;
>
> determining from said stored video images the position of the first golf club during the golfer's swing; and
>
> configuring and dimensioning a second golf club that will produce predetermined golf ball performance results for the golfer based on data obtained from the position of the first golf club during the golfer's swing.

The examiner relies on the following references:

Gobush et al. (Gobush)	5,501,463	Mar. 26, 1996
Nesbit et al. (Nesbit)	5,772,522	Jun. 30, 1998 (filed Nov. 23, 1994)

Schmoll	5,911,636	Jun. 15, 1999 (filed Jan. 16, 1998)
Butler et al. (Butler)	5,951,410	Sep. 14, 1999 (filed Jan. 3, 1997)

Claims 1, 2, 9, 16, 23, 28, and 31-34 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nesbit, Schmoll, and Butler.

Claims 3-8, 10-15, 17-22, 24-27, 29, and 30 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nesbit, Schmoll, Gobush, and Butler.

We refer to the Final Rejection (Paper No. 7) and the Examiner's Answer (Paper No. 12) for a statement of the examiner's position and to the Brief (Paper No. 11) and the Reply Brief (Paper No. 14) for appellants' position with respect to the claims which stand rejected.

OPINION

Grouping of claims

Appellants submit (Brief at 4-5) that the claims stand or fall together with respect to the first ground of rejection, but assert three separate groups of claims to be argued in response to the second ground of rejection. Accordingly, we select claim 16 as representative in our consideration of the first ground of rejection, and claims 17, 21, and 7 as representative with respect to the second ground. See 37 CFR § 1.192(c)(7).

Claims 1, 2, 9, 16, 23, 28, 31-34

In response to the section 103 rejection over Nesbit, Schmoll, and Butler, appellants contend (Brief at 6-7) that the references fail to teach or suggest recording and analyzing the interaction between club and ball during a golfer's swing, including actual ball performance, and determining from the analysis a club that will provide optimal ball performance.

Schmoll describes method and apparatus for analyzing recorded images of a golf swing. The reference teaches that two key parameters in fitting a club to a golfer are the club length and head-to-shaft angle. Col. 1, ll. 29-43. Schmoll further notes that a typical model of golf club had about five possible lengths and about five possible head-to-shaft angles. Id. at ll. 54-64.

Schmoll's invention includes using cameras for recording an image of a person swinging a club at least at the moment of impact with a golf club, and providing means capable of measuring, from the recorded image, the horizontal projection of a club shaft on a reference plane and the angle of elevation between the reference plane and shaft of the club. Col. 2, ll. 53-68.

In a preferred embodiment, a digital video camera 18 (Fig. 1) is capable of rapidly acquiring a series of images of the golfer 10 as the golfer swings club 12 and strikes golf ball 14. Col. 3. ll. 25-39. A second camera 22 is located directly above the golfer and provides an overhead view, primarily for evaluation of swing dynamics and for selecting an image from first camera 18 for use in club fitting. Id. at ll. 51-59. The

system includes an image analyzer 26 and monitor 28. Col. 4, ll. 1-6. Pairs of light generators and sensors 34, 36 measure speed of the golf ball after impact. Id. at ll. 7-23. The golfer repeats several trials, and the recorded images of the swings are examined using image analyzer 26 and, along with calculated ball speed, displayed on monitor 28. The most representative swing of the golfer from among the recorded images is identified. Ball speed may be used to judge that the golfer hit the ball solidly. Id. at ll. 28-56.

The relevant distance and angles at approximately the moment of impact with the ball in a representative swing may be ascertained from a calibrated grid on the display (Fig. 2) or may be measured internally by image analyzing software. The dimensions are used to determine the optimum length and head-to-shaft angle for the golfer for that particular club. Col. 4, l. 57 - col. 5, l. 24.

Instant claim 16 requires positioning high-speed video camera means near the striking location to obtain video images of the first golf club, the golf ball, and the golfer using the first golf club during the golfer's swing at the golf ball in the striking location. We note that appellants' specification (p. 5, ll. 24-28) teaches that any type of high speed video camera may be used, and that appellants have chosen not to rely for patentability on the subject matter of dependent claims which set forth more specific requirements of a high-speed video camera.

We find that Schmoll's disclosure of video cameras capable of acquiring a series of images as the golfer swings would have, at the least, suggested use of high-speed

video cameras within the scope of claim 16, particularly in view of the fact that Schmoll wanted to isolate an image at approximately the moment of impact with the ball. Further, the high-speed nature of the cameras would have meant that the golf ball, in addition to the golf club and the golfer, would have appeared in the video images. Moreover, claim 16 does not recite that any analysis is performed with respect to the image of the golf ball. The configuring and dimensioning of the "second club" is based on data obtained "from the position of the first golf club during the golfer's swing," which is precisely the data disclosed by Schmoll in the analysis for configuring and dimensioning of the second club.

Even if Schmoll were not regarded as teaching use of a high-speed video camera as required by claim 16, such suggestion is present in additional prior art applied against the claim. Butler discloses a data acquisition and display system 60 (Fig. 8) which utilizes a specialized golf club 62 (Fig. 9) having bending or deflection sensors. Col. 5, l. 24 - col. 6, l. 12. The system includes a high speed camera 106 to take a series of high speed pictures of the golfer just before, during, and after impact with the ball. Col. 8, ll. 1-9. Because an important parameter is the launch angle of the ball which occurs at the point of impact of the club head (col. 4, ll. 46-48), software in the data acquisition system determines launch angle of the ball and a measure of distance in yards that the ball would normally travel. Col. 8, ll. 43-61. Acquisition of the travel-distance information does not require use of the specialized golf club. Butler

teaches, on the contrary, that an actual, practical club is best used in that particular application. Col. 9, l. 5 et seq.

Butler's teaching of a high speed camera and data acquisition subsystem for acquiring additional important parameters would have suggested combination with the system of Schmoll. Thus, while we regard Schmoll as teaching a high-speed video camera within the meaning of instant claim 16, the combined teachings of Schmoll and Butler would have suggested an even higher speed video camera, capable of recording several images of a golf ball as it is propelled from the head of a club.

We have considered all of appellants' arguments in response to the rejection of claims 1, 2, 9, 16, 23, 28, and 31-34 under 35 U.S.C. § 103 as being unpatentable over Nesbit, Schmoll, and Butler. We are in substantial agreement with the examiner that the bulk of appellants' arguments are not commensurate with the scope of the invention set forth by representative claim 16. The claims measure the invention. SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1121, 227 USPQ 577, 585 (Fed. Cir. 1985) (en banc). During prosecution before the USPTO, claims are to be given their broadest reasonable interpretation, and the scope of a claim cannot be narrowed by reading disclosed limitations into the claim. See In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550 (CCPA 1969).

We thus sustain the section 103 rejection of claims 1, 2, 9, 16, 23, 28, and 31-34.

Claims 3-5, 10-14, 17-20, 22, 24, 25, 27, 29, 30

Although appellants suggest that claims 3-5, 10-14, 17-20, 22, 24, 25, 27, 29, and 30 require more than that set forth by the claims, representative claim 17 recites determining from stored video images the amount the predetermined dimensions of the golf club must be adjusted to provide the golfer with predetermined performance of the golf ball following impact by the club.[1] We need go no further than Schmoll to find the teaching alleged to be lacking from the prior art. As we have discussed supra in our consideration of the disclosure of Schmoll, the reference teaches the additional requirements of claim 17 at least at col. 5, lines 17 through 37.

We sustain the section 103 rejection of claims 3-5, 10-14, 17-20, 22, 24, 25, 27, 29, and 30.

Claims 6, 15, 21, 26

Appellants assert that the references fail to teach or suggest the confirming step of representative claim 21. The rejection relies on Butler and Gobush for suggestion of the additional parameters recited by the claim. In response to appellants' arguments,

[1] Although "said golf club" in claim 17 lacks proper antecedent, we interpret the reference to be to the claim 16 "first" golf club, as that is the one from which video images are obtained.

the examiner points to specific portions of the Gobush reference in the Answer at page 12, including the data obtained as shown in the tables in Figure 7. The examiner finds that the teachings would have suggested the means or step of confirming the strike face (or putter loft) that will provide improved golf ball performance.

Claim 21 requires confirming the "strike face angle of the club head." However, the claim further requires that the confirming step includes analyzing, from side view video images of the golf ball, the performance of a golf ball following impact with the golf club. The relevant portion of the statement of the rejection (Answer at 6-7) relies on Gobush for teaching confirmation of strike face angle, but relies on Butler for capturing images of a ball after impact by a golf club head. We do not find in the rejection, however, any rationale for a combination that would result in all the requirements of instant claim 21. Claims 6 and 26 recite subject matter similar to claim 21.

Instant claim 15 requires means for confirming the loft of a putter, with the confirming means including means for determining, from side view video images of the golfer's putting grip, the amount the golfer's wrists are moving during a putting stroke. We do not find where disclosure or suggestion for all the requirements of claim 15 has been set out in the rejection.

Since we agree in substance that a case for prima facie obviousness has not been established for claims 6, 15, 21, and 26, we do not sustain the rejection of those claims.

Claims 7, 8

Although Schmoll shows a video camera 18 (Fig. 1) behind the striking location of the ball and an overhead camera 22, the reference makes clear (col. 3, ll. 61-64) that additional cameras may be useful. Appellants argue that nothing in the applied references, however, suggests placement of a camera in front of the striking location and in line with a golfer's target during a swing at the golf ball in the striking location, as required by instant claim 7.

Schmoll further teaches, however, that the camera for recording an image of the person at least at the moment of impact of the club with the golf ball is positioned to record an image "from one of the front and rear" of the person swinging the golf club. Although Schmoll's embodiment of Figure 1 describes camera 18 as placed to the rear of the golfer, the lens is aligned "in the intended direction of ball flight." Col. 3, ll. 41-41. The artisan would have recognized, in consideration of the reference as a whole, that a camera such as camera 18 could also be placed in the "front" of the person swinging the golf club and acquire the relevant data -- e.g., the dimensions shown in Schmoll's Figure 2.

We thus find suggestion in Schmoll for placement of video capture means that meets the broad terms of instant claim 7. We also note that the claim does not exclude any additional structures that the artisan might deem necessary for protecting a camera placed in front of a golfer and "in line with a golfer's target during a swing at the golf ball," as recited by the claim.

We thus sustain the section 103 rejection of claims 7 and 8.

Arguments considered

In making our determinations, we have considered all of appellants' arguments that were timely presented.[2] Arguments not timely presented are deemed waived. See 37 CFR § 1.192(a) ("Any arguments or authorities not included in the brief will be refused consideration by the Board of Patent Appeals and Interferences, unless good cause is shown.") and § 1.192(c)(8)(iv) (the brief must point out the errors in the rejection).

CONCLUSION

We have affirmed the rejection of claims 1-5, 7-14, 16-20, 22-25, and 27-34 under 35 U.S.C. § 103, but we have reversed the rejection of claims 6, 15, 21, and 26 under the same statute. The examiner's decision in rejecting claims 1-34 is thus affirmed-in-part.

[2] We note a paper in the instant file wrapper (Paper No. 21), submitted by appellants via facsimile communication on April 17, 2003, styled "Post-Hearing Remarks." We did not request any additional papers from appellants. Accordingly, the paper has not been considered. See Ex parte Cillario, 14 USPQ2d 1079, 1080 (Bd. Pat. App. & Int. 1989) (an unrequested paper submitted after oral hearing is entitled to no consideration).

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

AFFIRMED-IN-PART

JERRY SMITH Administrative Patent Judge	)
STUART S. LEVY Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
HOWARD B. BLANKENSHIP Administrative Patent Judge	)

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