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EXAMINER
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PTOL-90A (Rev. 04/07)

UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE PATENT TRIAL AND APPEAL BOARD
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Ex parte NAOYOSHI UEDA, MASAHIKO UEDA,
YASUSHI SUGIMOTO, TAKASHI NAKAMURA, SEIJI HAYASE, and
WATARU KIMIZUKA
_____

Appeal 2019-000027
Application 14/849,130
Technology Center 3700
_____

Before MICHAEL C. ASTORINO, CYNTHIA L. MURPHY, and
KENNETH G. SCHOPFER, *Administrative Patent Judges*.

ASTORINO, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), the Appellant[1] appeals from the
Examiner's decision to reject claims 1, 5, 9, 11, 14 and 18. We have
jurisdiction under 35 U.S.C. § 6(b). An oral hearing was held on May 28,
2020.

We REVERSE.

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[1] We use the word "Appellant" to refer to "applicant" as defined in
37 C.F.R. § 1.42. The Appellant identifies the real party in interest as
DUNLOP SPORTS CO. LTD. Appeal Br. 1.

STATEMENT OF THE CASE

Claimed Subject Matter

Claim 1, the sole independent claim, is representative of the subject matter on appeal and is reproduced below.

> 1.   A golf club comprising:
>
> a head, a shaft with a shaft axis, and a grip, wherein:
>
> if a club inertia moment about a swing axis is defined as Isw (kg·cm²), and a club inertia moment about an axis perpendicular to the shaft axis and passing through a grip end is defined as Ige (kg·cm²), wherein the swing axis is parallel to the axis passing through the grip end, and away from the grip end with a distance of 60 cm from the grip end so that the grip end is positioned between the swing axis and the head,
>
> the inertia moment Ige is 2760 (kg·cm²) or greater and less than 2820 (kg·cm²), and Isw/Ige is equal to or less than 2.42; and
>
> if a club weight is defined as Wc (kg), an axial direction distance from the grip end to a center of gravity of the club is defined as Lc (cm), and a club inertia moment about the center of gravity of the club is defined as Ic (kg·cm²),
>
> the inertia moment Isw (kg·cm²) is calculated by Equation (1) below, and the inertia moment Ige (kg·cm²) is calculated by Equation (2) below:
>
> $$Isw = Wc \times (Lc + 60)^2 + Ic \qquad (1)$$
> $$Ige = Wc \times (Lc)^2 + Ic \qquad (2), \text{ and}$$
>
> wherein a head weight Wh is equal to or greater than 0.188 kg, and a grip weight Wg is equal to or less than 0.026 kg.

Appeal Br., Claims App. 1.

Rejection

Claims 1, 5, 9, 11, 14, and 18 are rejected under 35 U.S.C. § 103 as being unpatentable over Nakamura et al. (US 2013/0095945 A1, pub. Apr. 18, 2013) ("Nakamura") and Beno et al. (US 2013/0029781 A1, pub. Jan. 31, 2013) ("Beno").

ANALYSIS

The Examiner relies on Nakamura to teach all of the subject matter of independent claim 1, except for grip weight W_g being equal to or less than 0.0260 kg. *See* Non-Final Act. 2–5. Indeed, as the Examiner finds, Nakamura teaches a grip weight W_g higher than 0.0260 kg. *See id.* at 3 (citing Nakamura ¶ 40). To remedy this deficiency, the Examiner relies on Beno's teachings. *Id.* at 4. The Examiner finds that Beno teaches a grip weight W_g of 0.024 kg. *Id.* (citing Beno ¶ 30). The Examiner modifies Nakamura's teaching of a golf club with Beno's teaching of a lower grip weight W_g. This modification lowers the club weight W_c of Nakamura's golf club, which the Examiner acknowledges. *Id.* ("As with Nakamura, Beno's grip weight contribut[es] to the performance of the golf club to redistribute the weight to the other parts of the golf club and thus *reduc*[*es*] *the overall weight of the golf club*, which is extremely desirable in the golf club art." (emphasis added)); *see* Ans. 7 ("It is evident that forming a golf club which is lighter (due for example to a lighter grip weight) . . . .").

The Appellant points out that the Examiner's modification of Nakamura's grip weight W_g not only changes grip weight W_g and club weight W_c, but also changes other parameters of the golf club including inertia moments I_{sw}, I_{ge}, and I_c. *See* Appeal Br. 6–7. The Appellant

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contends that the Examiner's rejection lacks adequate support because it fails to properly account for the changes in the weight Wc and consequently, changes in the inertia moments Isw, Ige, and Ic. *See id.* The Appellant's argument is persuasive.

For example, the Examiner's rejection relies on Nakamura's teaching of tested golf clubs including comparative example 20, which has a grip weight Wg of 0.0375 kg and a club weight Wc of 0.270 kg. Non-Final Act. 3; Nakamura, ¶ 130, Table 5. Notably, club weight Wc is a parameter used to calculate club inertia moment about a swing axis Isw and club inertia moment about an axis perpendicular to the shaft axis and passing through a grip end Ige. More specifically, as recited in claim 1,

$$Isw = Wc \times (Lc + 60)^2 + Ic \qquad (1)$$

$$Ige = Wc \times (Lc)^2 + Ic \qquad (2).$$

Appeal Br., Claims App. 1. As a result of the Examiner's modification, grip weight Wg is lowered from 0.0375 kg to 0.026 kg, which lowers club weight Wc by 0.011 kg, which effects inertia moments Isw and Ige as well as the ratio of Isw/Ige. Besides club weight Wc, the equations for Isw and Ige include axial direction distance from the grip end to a center of gravity of the club Lc and club inertia moment about the center of gravity of the club Ic. *Id*. While Lc may or may not change due to the change in club weight Wc, the inertia moment Ic, similar to Isw and Ige, will be affected.

The Examiner does not address how the modification of grip weight Wg of Nakamura's golf club in comparative example 20 — or any other golf club as taught by Nakamura — changes its club weight Wc or the values of the golf club's inertia moments, such as Isw, Ige, or the ratio of Isw/Ige. Therefore, we agree with the Appellant that Examiner's rejection

lacks adequate support. For example, the Examiner does not address how the inertia moment Ige changes after the grip weight Wg and consequently, club weight Wc, is modified, and if the modified value of the inertia moment Ige is within the claimed range, i.e., "2760 (kg·cm^2) or greater and less than 2820 (kg·cm^2)." Appeal Br., Claims App. 1.

Further, it is notable that the Examiner's rejection of claim 1 includes a modification of Nakamura's grip weight Wg "based [on] routine experimentation for the reason that a skilled artisan would have been motivated to form the optimum grip's weight thus providing the optimum grip's weight and providing the optimum grip that is durable enough and yet not too heavy to alter/ influence a golfer's swing." Non-Final Act. 5. Additionally, in response to arguments presented in the Appeal Brief, the Examiner appears to extend the theory of routine experimentation and optimization to the ratio of Isw/Ige. *See* Ans. 10–11. Even if the rationale for the proposed modification was sufficient, the deficiency in the Examiner's rejection as discussed above remains. Namely, the Examiner never acknowledges that changing grip weight Wg causes a change in values of other claimed parameters of a golf club, such as the inertia moment Ige.

Thus, we do not sustain the Examiner's rejection of independent claim 1 and claims 5, 9, 11, 14, and 18, which depend therefrom.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	References/Basis	Affirmed	Reversed
1, 5, 9, 11, 14, 18	103	Nakamura, Beno		1, 5, 9, 11, 14, 18

REVERSED