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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte TAKASHI NAKAMURA

Appeal 2018-001548
Application 14/736,688¹
Technology Center 3700

Before BRUCE T. WIEDER, KENNETH G. SCHOPFER, and
AMEE A. SHAH, *Administrative Patent Judges*.

WIEDER, *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 1–8. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ According to Appellant, the real party in interest is DUNLOP SPORTS CO. LTD. (Appeal Br. 1.)

CLAIMED SUBJECT MATTER

Appellant’s “invention relates to a golf club.” (Spec. 1, l. 10.) The Specification discloses that “an object of the present invention to provide a golf club having excellent easiness of swing and stability.” (*Id.* at 2, ll. 4–5.)

Claim 1 is the sole independent claim on appeal. It recites:

1. A golf club comprising: a head; a shaft; and a grip,
wherein a club length is 43 inches or greater and 48 inches
or less;

a ratio (W_h/W_c) of a head weight W_h to a club weight W_c
is equal to or greater than 0.66;

an inertia moment I_x about a swing axis is 7.20×10^3
($\text{kg} \cdot \text{cm}^2$) or greater and 7.50×10^3 ($\text{kg} \cdot \text{cm}^2$) or less;

a static moment M_t ($\text{kg} \cdot \text{cm}$) of the club is equal to or
greater than 16.0 ($\text{kg} \cdot \text{cm}$); and

if the club weight is defined as W_c (kg); an axial-
directional distance between a grip end and a center of gravity of
the club is defined as L_c (cm); and a club inertia moment about
the center of gravity of the club is defined as I_c ($\text{kg} \cdot \text{cm}^2$),

the inertia moment I_x ($\text{kg} \cdot \text{cm}^2$) is calculated by the
following formula (1), and the static moment M_t ($\text{kg} \cdot \text{cm}$) is
calculated by the following formula (2).

$$I_x = W_c \times (L_c + 60)^2 + I_c \quad \cdots (1)$$

$$M_t = W_c \times (L_c - 35.6) \quad \cdots (2)$$

REJECTIONS

Claims 1–8 are rejected under 35 U.S.C. § 101 as directed to a judicial
exception without significantly more.²

² We consider the Examiner’s statement that “[c]laim(s) 19-23 and 26-28 are . . . rejected as ineligible subject matter” to be typographical error. (*See* Final Action 2.) We note that Appellant correctly recognized that claims 1–8 are rejected under § 101. (*See* Appeal Br. 5.)

Claims 1–8 are rejected under 35 U.S.C. § 103(a) in view of Oyama (US 2006/0009302 A1, pub. Jan. 12, 2006).

ANALYSIS

The § 101 rejection

“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. Section 101, however, “contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014) (quoting *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)).

Alice applies a two-step framework, earlier set out in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 573 U.S. at 217.

Under the two-step framework, it must first be determined if “the claims at issue are directed to a patent-ineligible concept.” *Id.* at 218. If the claims are determined to be directed to a patent-ineligible concept, then the second step of the framework is applied to determine if “the elements of the claim . . . contain[] an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Id.* at 221 (citing *Mayo*, 566 U.S. at 72–73, 79).

With regard to step one of the *Alice* framework, we apply a “directed to” two prong test to: 1) evaluate whether the claim recites a judicial exception, and 2) if the claim recites a judicial exception, evaluate whether the claim “appl[ies], rel[ies] on, or use[s] the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” *See 2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50, 54 (Jan. 7, 2019) (hereinafter “2019 Guidance”).

Here, the Examiner determines “the claims are directed at least in part to a mathematical formula recognized as unpatentable.” (Final Action 4.)

The Examiner further determines that

[a]n observation that club heads having a particular mass distribution with respect to the length of their shafts that can be described as a mathematical formula is not considered a practical application to suggest that the formula as it applies to golf clubs would be patent eligible. . . . The patenting of such an idea is clearly pre-emptive to clubs currently known and developed in the future as any club shaped in accordance with the claimed formula could be excluded if issued.

(*Id.*)

Appellant argues that “claim 1 recites structural features of a golf club that does not tie up the use of the mathematical relationships generally.”

(Appeal Br. 5.) Appellant also argues that “the claims are not simply directed to formulas (1) and (2). Rather, the claims are directed to a new and useful golf club wherein formulas (1) and (2) only explain how static moment and inertia moment are calculated.” (*Id.* at 6.)

Under step one of the *Alice* framework, we “look at the ‘focus of the claimed advance over the prior art’ to determine if the claim’s ‘character as a

whole’ is directed to excluded subject matter.” *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)).

The “directed to” inquiry . . . cannot simply ask whether the claims *involve* a patent-ineligible concept, because essentially every routinely patent-eligible claim involving physical products and actions *involves* a law of nature and/or natural phenomenon Rather, the “directed to” inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether “their character as a whole is directed to excluded subject matter.” *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015).

Enfish, LLC v. Microsoft Corp., 822 F.3d 1327, 1335 (Fed. Cir. 2016).

The Specification provides evidence as to what the claimed invention is directed. In this case, the Specification discloses that the “invention relates to a golf club.” (Spec. 1, l. 10.) Claim 1 provides further evidence. Claim 1 recites “[a] golf club comprising: a head; a shaft; and a grip” having a specified range of lengths, a specified range for a head weight to club weight ratio, a specified range for a calculated inertia moment, and a specified range for a calculated static moment.

“When a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect . . . , then the claim satisfies the requirement of § 101.” *Diamond v. Diehr*, 450 U.S. 175, 192 (1981). Moreover, applying the 2019 Guidelines, even agreeing with the Examiner that claim 1 recites a judicial exception, i.e., a mathematical formula, we determine that claim 1 applies or uses the recited formulas “in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to

monopolize the judicial exception.” (*See* 2019 Guidance at 54.) In short, the formulas are used to describe the claimed golf club. With regard to the Examiner’s determination that “[t]he patenting of such an idea is clearly pre-emptive to clubs currently known,” that issue should be addressed through 35 U.S.C. §§ 102 and 103. (*See* Final Action 4.)

We will reverse the rejection of claim 1, and dependent claims 2–8, under § 101.

The § 103 rejection

The Examiner finds that

Oyama shows a club with a length and head weight. Inherently there exists weight of the club and head from which a ratio can be calculated. He does not describe his selection of shaft length, head mass and overall club nor does he define their relationship using the terms defined by applicant or mathematical relationships. However, the selection of head mass and shaft length are considered obvious matters of choice in design selected based upon a golfers preference and swing characteristics. The effects of head mass and shaft length with respect to other design variables are known.

(Final Action 16–17.) The Examiner also determines that

[c]lub designers balance variables included in club dynamics in attempt to optimize it [sic] hitting distance. Applicant seeks to characterize these dynamics inherent in all clubs in the context of a formula describing a relationship between a relations [sic] of head weight to a distance to the center of gravity of the club. One skilled in the art is well aware of the effects of head weight on swing weight as well as the relationship of the center of gravity of a club on swing performance.

(*Id.* at 17.)

Appellant argues that “the present specification provides comparative testing, which shows the criticality of the claimed ranges (see Tables 1-7 of the present specification). At page 36, line 23 to page 38, line 3, the present specification explains the results of comparative testing.” (Appeal Br. 8.) The Specification concludes that “[a]s shown in Tables, thus, the advantages of the present invention are apparent.” (Appeal Br. 9, quoting Spec. 38, ll. 2–3.) Appellant further argues that “[t]he comparative examples strongly evidence that the prior art do [sic] not produce the results of the claimed invention” and that “the claimed invention is unexpectedly superior.” (Appeal Br. 9.)

We determine that the Examiner does not sufficiently explain the reasoning with rational underpinning to modify Oyama to require a club length and a head-to-club weight ratio within the ranges recited in claim 1, and the additional factors of the calculated inertia moment and static moment within the ranges recited in claim 1. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007), citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Nor does the Examiner sufficiently explain why these particular properties would have been recognized as result-effective variables. *See In re Antonie*, 559 F.2d 618, 620 (CCPA 1977).

Therefore, we will reverse the rejection of claim 1, and dependent claims 2–8, under § 103.

DECISION

The Examiner’s rejection of claims 1–8 under 35 U.S.C. § 101 is reversed.

Appeal 2018-001548
Application 14/736,688

The Examiner's rejection of claims 1–8 under 35 U.S.C. § 103 is reversed.

REVERSED