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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SRIDHAR IYENGAR and IAN HARDING

Appeal 2015-006229
Application 12/882,761
Technology Center 3700

Before BRANDON J. WARNER, PAUL J. KORNICZKY, and BRENT M. DOUGAL, *Administrative Patent Judges*.

DOUGAL, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1–22 under 35 U.S.C. § 101. We have jurisdiction under 35 U.S.C. § 6(b). An oral hearing was held on August 7, 2017.

We reverse.

CLAIMED SUBJECT MATTER

The claims are directed to methods related to an implantable biosensor system. Claims 1 and 11 are the independent claims on appeal. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A method for determination of the thickness of a polymer layer in an implantable biosensor comprising an electrode and the polymer layer, wherein the polymer layer contains an enzyme, said method comprising the steps of:
>
> (a) placing the biosensor in contact with a solution;
>
> (b) applying a potential (V) to the biosensor sufficient to oxidize or reduce a redox active species in the solution and generate a current,
>
> (c) switching off the applied potential and observing subsequent decay of potential to obtain a plurality of V versus time (t) data points, and
>
> (d) determining the slope (k) of a plot of V versus $l/\sqrt{t}$, wherein the slope (k) provides an indication of the thickness of the polymer layer.

OPINION

The Examiner rejects claims 1–22 under 35 U.S.C. § 101 as being "directed to the abstract idea of a mathematical relationship or formula." Final Act. 2. The Examiner, without providing further analysis, determines that "all claim elements both individually and in combination, do not amount to significantly more than an abstract idea." *Id.*

The Supreme Court has set forth "a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible *applications of those concepts*." *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014) (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012)). Under that framework, we first "determine whether the claims at

issue are directed to one of those patent-ineligible concepts"—i.e., a law of nature, a natural phenomenon, or an abstract idea. *Id.* (citing *Mayo*, 132 S. Ct. at 1296–97).

The Federal Circuit has instructed that "[t]he 'directed to' inquiry . . . [does not] 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." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016). The Courts continues: "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.'" *Id.* (citing *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015).

It is only after the claims have been determined to be "directed to" a patent-ineligible concept that we secondly "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1298, 1297).

Under the first step of the *Alice* framework, the Examiner determines that the claims are directed to an abstract idea because "the calculation of a slope is clearly a mathematical determination using mathematical relationships and/or formulas." Ans. 2.

However, though both independent claims 1 and 11 include the step of "determining the slope," the Examiner has not sufficiently shown that the claims are *directed to* an abstract idea.

Appellants argue that the claims "provide a method for determining the thickness of a polymer layer in an implantable biosensor and determine the amount of analyte in a sample using a biosensor," which are "real-world functions . . . tied to biosensors." Appeal Br. 3. Further, Appellants note that the "claims result in a change in a redox active species (either being oxidized or reduced by applying a potential to a biosensor)." *Id.*

We determine that the claims here are directed to an improvement in functionality of a biosensor—specifically, determination of the thickness of an enzyme-containing polymer layer therein, for which determining the slope is only one applied part thereof. Thus, we agree with Appellants that the claims "are directed to processes that recite[] meaningful limitations that limit the practical applications of the claimed processes," which "do not seek to tie up [a] judicial exception." *Id.* at 4.

For these reasons, we do not sustain the Examiner's rejection.

DECISION

The Examiner's rejection of claims 1–22 is reversed.

REVERSED