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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/466,201	05/08/2012	Vernon R. Goodman	10-1339-US-NP	1104

18227 7590 03/27/2018

Cantor Colburn LLP - Raytheon
20 Church Street
22nd Floor
Hartford, CT 06103

EXAMINER
NIMOX, RAYMOND LONDALE

ART UNIT	PAPER NUMBER
2864	

NOTIFICATION DATE	DELIVERY MODE
03/27/2018	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte VERNON R. GOODMAN

Appeal 2017-007428
Application 13/466,201
Technology Center 2800

Before GEORGE C. BEST, JULIA HEANEY, and JEFFREY R. SNAY, *Administrative Patent Judges*.

SNAY, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

Appellant[2] appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1, 5–9, and 11–19. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] We cite the Specification ("Spec.") filed May 8, 2012; Final Office Action ("Final Act.") dated June 2, 2016; Appellant's Appeal Brief ("App. Br.") dated November 1, 2016; Examiner's Answer ("Ans.") dated February 13, 2017; and Appellant's Reply Brief ("Reply Br.") dated April 13, 2017.

[2] Appellant identifies Raytheon Company as the real party in interest. App. Br. 1.

BACKGROUND

The subject matter on appeal relates to signal processing methods and systems. Spec. ¶ 2. Appellant's Specification states that finding new and improved processes to reduce or eliminate interference signals from communication signals, such as in radar systems, is a continuing pursuit in the signal processing industry. *Id.* ¶ 3. Appellant discloses using Fourier transform processing on a waveform to suppress continuous wave interference. *Id.* ¶¶ 8–9. Claim 1 is illustrative of the subject matter on appeal and is reproduced from the Claims Appendix of Appellant's Appeal Brief below:

> 1. A method for suppressing interference signals within a waveform, comprising:
>
> performing an analog Fourier transform on the waveform with a hardware circuit to obtain an amplitude spectrum having a plurality of frequency bins;
>
> computing a noise floor spectrum from the amplitude spectrum to obtain a noise floor spectrum;
>
> creating a threshold spectrum based on the noise floor spectrum;
>
> replacing the amplitude of each bin of the amplitude spectrum that exceeds a corresponding bin of the threshold spectrum with an alternative value to form a corrected spectrum;
>
> performing an analog inverse Fourier transform on the corrected spectrum thereby suppressing interference signals within the waveform to produce a suppressed waveform; and
>
> processing a signal based on the suppressed waveform to determine a geolocation of an object from which an incident wave was reflected to create the waveform;
>
> wherein the noise floor spectrum is computed from a rectified version of the amplitude spectrum;
>
> wherein the noise floor spectrum is formed of a plurality of noise floor values corresponding to each bin of the amplitude

spectrum and the alternative value is the noise floor value for a bin having its amplitude replaced.

Independent claim 9 is directed to a system comprising various modules for performing the signal processing steps of claim 1, as well as a geolocator that processes a signal based on the interference-suppressed waveform to determine a geolocation of an object.

REJECTION

Claims 1, 5–9, and 11–19 stand rejected under 35 U.S.C. § 101 as being directed to ineligible subject matter.

OPINION

As defined by the Patent Act, patent-eligible subject matter includes "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. The courts have created certain exceptions to the literal scope of § 101. In particular, laws of nature, natural phenomena, and abstract ideas are not patent-eligible. *Alice Corp. v. CLS Bank Int'l,* 134 S. Ct. 2347, 2354 (2014).

Since *Alice,* patent-eligibility has been determined using a two-step process. In step one, we determine whether the claims at issue are directed to a judicial exception, such as an abstract idea. *Alice,* 134 S. Ct. at 2355. If the claims are not directed to one of the judicial exceptions, the inquiry ends. *See Enfish, LLC v. Microsoft Corp.,* 822 F.3d 1327, 1339 (Fed. Cir. 2016). If the claims are held to be directed to one of the judicial exceptions, we proceed to step two. In this step, we determine whether the claims contain "an 'inventive concept' . . . that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible

concept] itself.'" *Alice,* 134 S. Ct. at 2355 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.,* 566 U.S. 66, 72–73 (2012)) (alteration in original, emphasis added).

The Examiner determines that Appellant's claims are directed to the abstract idea of using a mathematical function and data manipulation to suppress interference signals within a waveform. Final Act. 4–5; Ans. 2–17. The Examiner finds that the claims, therefore, are directed to a judicial exception from patent eligible subject matter, and that the additional elements recited in the claims do not amount to significantly more than the judicial exception because they are recited at a high level of generality to facilitate application of the abstract idea on a general purpose computer. Final Act. 4.

Appellant argues that the instant claims pass the first part of the Alice test because they are directed to signal processing that is used to improve the processing of a system that generates a geolocation of an object. App. Br. 7 (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016)). Appellant also argues that, even if the claims fail step one, they pass step two because the recited geolocating element limits the claims to something that is not abstract. *Id.*

Appellant's arguments are not persuasive.

In *Enfish,* the claims at issue were directed to "a specific type of data structure designed to improve the way a computer stores and retrieves data in memory." *Enfish,* 822 F.3d at 1339. The Federal Circuit concluded that the claims in *Enfish* were not directed to an abstract idea because "the plain focus of the claims is on an improvement to computer functionality itself, not on economic or other tasks for which a computer is used in its ordinary

capacity." *Id.* at 1336. In this case, Appellant does not point to any recitation in the claims that is directed to an improvement to computer functionality itself. Rather, Appellant explains in the Specification that the geolocator "may be implemented in the form of software residing in the memory associated with a processing system," and may operate "using industry commonly known combination and decombination techniques, or equally implemented in any of such other form as is generally known and practiced in the electronics and signal processing industry." Spec. ¶ 30. Appellant, therefore, does not persuade us of error in the Examiner's determination (Ans. 5) that the claimed invention is "directed to improving an algorithm (software run on the computer) and not the function of a computer." *Id.*

In *Alice* step two, we consider the elements of the claim, both individually and as an ordered combination, to assess whether the additional elements transform the nature of the claim into patent-eligible subject matter. *Content Extraction & Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1347 (Fed. Cir. 2014). "To save a patent at step two, an inventive concept must be evident in the claims." *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017). "An inventive concept that transforms the abstract idea into a patent-eligible invention must be significantly more than the abstract idea itself, and cannot simply be an instruction to implement or apply the abstract idea on a computer." *Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349 (Fed. Cir. 2016).

Here, the Examiner finds that the additional elements recited in the claims merely facilitate the application of the abstract idea using a generic

computer processor. Ans. 4. Appellant's contention that the claimed geolocation element is sufficiently more than the abstract idea is unpersuasive. Appellant does not provide any explanation why the claimed geolocation is sufficient to remove the claims from the judicial exception. Moreover, as noted above, the Specification supports the Examiner's determination that the claimed geolocation encompasses routine computer processing of mathematically transformed signal information.

On this appeal record, we are not persuaded of error in the Examiner's assessment of the claims as being directed to patent-ineligible subject matter. Accordingly, the Rejection is sustained.

DECISION

The Examiner's rejection of claims 1, 5–9, and 11–19 under 35 U.S.C. § 101 is affirmed.

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

AFFIRMED