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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KAARE J. REMME, DAVID A. NICOSIA, KELLY D. HENDRICK, DANIEL C. MITCHELL, and CYNTHIA A. CASTLE[1]

Appeal 2017-002356
Application 11/556,842
Technology Center 2100

Before BRADLEY W. BAUMEISTER, KEVIN W. CHERRY and ADAM J. PYONIN, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–7 and 9–20. App. Br. 4; Reply Br. 3.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] Appellants list The Remme Corporation as the real party in interest. Appeal Brief 1, filed March 10, 2016 ("App. Br.").

[2] Rather than repeat the Examiner's positions and Appellants' arguments in their entirety, we refer to the above-mentioned Appeal Brief, as well as the following documents, for their respective details: the Final Action mailed May 1, 2015 ("Final Act."); the Examiner's Answer mailed September 26, 2016 ("Ans."); and the Reply Brief filed November 23, 2016 ("Reply Br.").

STATEMENT OF THE CASE

Appellants describe the present invention as being directed to methods and a modeling tool "for managing rangeland in a consistent, repeatable and quantitative manner." Abstract. With use of the invention, "[l]and use policy may . . . be established[] for grazing, hunting, recreation, and other uses." *Id.* Independent claim 1 illustrates the claimed invention:

> 1. A method comprising:
>
> creating a geospatial model of land, the model including datasets of road network and plant community boundaries;
>
> selecting forage observation locations and forage analysis routes within said land, based upon calculations of the datasets in the geospatial model;
>
> establishing forage limiting attributes and area limiting attributes for each forage observation location;
>
> establishing a relative spatial extent of land associated with each forage observation location;
>
> observing an amount of forage at each forage observation location;
>
> calculating a measured forage based on the difference between the amount of observed forage at each forage observation location and respective forage limiting attributes;
>
> calculating a net relative spatial extent of land based on a difference between the relative spatial extent of land at each forage observation location and respective area limiting attributes; and
>
> calculating, with a processing device, a forage inventory based on the respective measured forage and net relative spatial extent of land associated with each forage observation location.

The Examiner rejected claims 1–7 and 9–under 35 U.S.C. § 103(a) as being unpatentable over Robbins (US 2006/0112889 A1; published June 1, 2006) and White et al., "How Much Forage Do You Have?" TEXAS

AGRICULTURAL EXTENSION SERVICE, THE TEXAS A & M UNIVERSITY SYSTEM, 1995 ("White"). Final Act. 4–8.

The Examiner subsequently rejected claims 1–7 and 9–20 in the Examiner's Answer under 35 U.S.C. § 101 as additionally being directed to patent-ineligible subject matter. Ans. 2–3.

We review the appealed rejections for error based upon the issues identified by Appellants, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

THE § 101 REJECTION

Summary

The Examiner determines that the claims are directed to patent-ineligible abstract ideas without reciting significantly more. Ans. 2–3. The Examiner additionally finds that claims 10–13 are broad enough to read on non-statutory transitory computer readable media. *Id.* at 3 (citing Spec. 9:9–10). Appellants argue that the claims are not directed to abstract ideas under step one of the *Alice/Mayo* test (Reply Br. 4–6), that the claims recite significantly more than abstract ideas (*id.* at 7–9), and that claims 10–13 are limited to non-transitory media (*id.* at 6). We address these various arguments below *seriatim*.

Principles of Law

Under 35 U.S.C. § 101, a patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." The Supreme Court has "long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v.*

CLS Bank Int'l, 134 S. Ct. 2347, 2354 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)).

Accordingly, in applying the § 101 exception, the Supreme Court cautioned:

> [W]e must distinguish between patents that claim the "'buildin[g] block[s]'" of human ingenuity and those that integrate the building blocks into something more, thereby "transform[ing]" them into a patent-eligible invention. The former "would risk disproportionately tying up the use of the underlying" ideas, and are therefore ineligible for patent protection. The latter pose no comparable risk of pre-emption, and therefore remain eligible for the monopoly granted under our patent laws.

Alice, 134 S. Ct. at 2354–55 (all brackets in original except first set) (internal citations omitted).

In *Alice*, the Supreme Court has set forth an analytical "framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Id.* at 2355 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 71–73 (2012)). In the first step of the analysis, we determine whether the claim at issue is "directed to" a judicial exception, such as an abstract idea. *Id.* at 2355. If not, the inquiry ends. *Thales Visionix Inc. v. U.S.*, 850 F.3d 1343, 1346 (Fed. Cir. 2017); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1339 (Fed. Cir. 2016). If the claim is determined to be directed to an abstract idea, then we consider under step two whether the claim contains an "inventive concept" sufficient to "transform the nature of the claim into a patent-eligible application." *Alice*, 134 S. Ct. at 2355 (quotations and citation omitted).

In considering whether a claim is directed to an abstract idea under step one, we acknowledge, as did the Supreme Court, that "all inventions at

some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 566 U.S. at 71. We therefore look to whether the claim focuses on a specific means or method that improves the relevant technology or is instead directed to a result or effect that, itself, is the abstract idea and merely invokes generic processes and machinery. *See Enfish*, 822 F.3d at 1336.

In the second step of the *Alice* analysis, if applicable, we must consider whether the claim contains an element or a combination of elements that is sufficient to transform the nature of the claim into a patent-eligible application. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 714 (Fed. Cir. 2014); *Alice*, 134 S. Ct. at 2355.

> In applying step two of the *Alice* analysis, we must "determine whether the claim[] do[es] significantly more than simply describe [the] abstract method" and thus transform the abstract idea into patentable subject matter. We look to see whether there are any "additional features" in the claim[] that constitute an "inventive concept," thereby rendering the claim[] eligible for patenting even if [it is] directed to an abstract idea. Those "additional features" must be more than "well-understood, routine, conventional activity."

Intellectual Ventures I LLC v. Erie Indem. Co., 850 F.3d 1315, 1328 (Fed. Cir. 2017) (citations omitted). A claim that "merely require[s] generic computer implementation[] fail[s] to transform [an] abstract idea into a patent-eligible invention." *Alice*, 134 S. Ct. at 2357.

Central to our analysis herein is the fundamental principle that the *Alice* framework must be applied to the claims, as properly construed. As our reviewing court has stated, "The § 101 inquiry must focus on the language of the Asserted Claims themselves." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016); *see also Accenture*

Global Servs., GmbH v. Guidewire Software, Inc., 728 F.3d 1336, 1345 (Fed. Cir. 2013) (admonishing that "the important inquiry for a § 101 analysis is to look to the claim"); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1346 (Fed. Cir. 2014) (focusing on "whether the *claims* of the asserted patents fall within the excluded category of abstract ideas") (emphasis added)).

These principles are based on long-established jurisprudence that "[i]t is the claims [that] define the metes and bounds of the invention entitled to the protection of the patent system." *In re Warmerdam*, 33 F.3d 1354, 1360 (Fed. Cir. 1994) (citing *Zenith Labs., Inc. v. Bristol–Myers Squibb Co.*, 19 F.3d 1418, 1424 (Fed. Cir. 1994)).

Contentions and Analysis

I.

Appellants argue that the present invention is not directed to a patent-ineligible abstract idea because the invention allegedly "provide[s] a technical process for rangeland forage management that uses specific attributes of land under management to set physical forage observation locations which, in turn, are used to provide accurate physical forage estimates." Reply Br. 2.

We disagree with Appellants' characterization of the invention as being a technical process. We instead agree with the Examiner that the invention entails "surveying a model of a land and obtaining forage inventory data." Ans. 2. More specifically, Appellants' invention entails creating models, selecting model parameters, and performing mathematical calculations to determine forage inventory estimates. *See, e.g.*, claim 1. Accordingly, we agree with the Examiner that the invention is directed to methods of organizing human activities and performing mathematical

relationships. Ans. 2. The courts have interpreted such activities as constituting abstract ideas. *See* MPEP § 2106.04(a)(2) Parts (II)–(IV).

It is immaterial to our analysis herein whether certain acts of managing rangeland reasonably may be interpreted as constituting a technological process. The independent claims do not recite actually performing any physical rangeland-management acts. *See* claims 1, 10, and 14. Claim 1 only recites a method of creating the model and calculating inventory estimates—preliminary planning steps that are undertaken prior to actually carrying out any physical land-management acts. Claim 10 recites a computer readable medium effectively for performing the steps recited in claim 1. Claim 14 is similar in scope to claim 1, but further recites establishing a livestock grazing policy. Even with respect to claim 14, Appellants do not provide a basis for concluding that establishing a policy constitutes a physical or technological process, let alone a non-abstract process. *See generally* Reply Br. As such, Appellants' reliance on cases such as *McRO*[3] and *Enfish* (Reply Br. 5) are unpersuasive because those cases, dealing with improvements to technologies, are not on point.

Appellants also argue the claims are not directed to any abstract idea because "the claimed methods are limiting, and do not purport to cover all methods of rangeland management." Reply Br. 6. This argument is unpersuasive.

We recognize that the Supreme Court has described "the concern that drives this exclusionary principle [i.e., the exclusion of abstract ideas from patent eligible subject matter] as one of pre-emption." *See Alice*, 134 S. Ct.

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[3] *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016).

at 2354. However, characterizing preemption as a driving concern for patent eligibility is not the same as characterizing preemption as the sole test for patent eligibility. As our reviewing court has explained: "[t]he Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability" and "[f]or this reason, questions on preemption are inherent in and resolved by the § 101 analysis." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice Corp.*, 134 S. Ct. at 2354). Although "preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Id.*

II.

We now turn to step two of the *Alice* inquiry. Appellants argue in that regard,

> the claims on appeal are not merely routine steps and the claims include specific steps for managing rangeland using physical attributes of the land in combination with physical observations and forage measurements, to provide a repeatable, technical solution to the technical problem of rangeland management, as recited in claims 1–7 and 9–20 presently on appeal.

Reply Br. 9. Appellants further argue that the Examiner has not provided any analysis of the prior art to find that the claimed rangeland management technique is routine activity. *Id.* at 8–9.

This argument is unpersuasive because, as explained above, the independent claims do not include any physical step of actually managing rangeland. The claims only recite preliminary planning steps of creating a survey model, selecting model parameters, and calculating inventory estimates. As such, the claims are not directed to a technological

improvement or solution, but, instead, are directed to a combination of abstract ideas.

The only language of claim 1 that is directed to a technological element beyond the abstract idea is the requirement of the final limitation that the abstract idea of mathematically calculating the forage inventory be performed "with a processing device." *See* claim 1. The Examiner finds that the claims encompass general purpose computers because

> [t]he claims are silent as to how a computer aids the method, the extent to which a computer aids the method, or the significance of a computer to the performance of the method. *Simply* adding a computer aided limitation to a claim covering an abstract concept, without more, is insufficient to render the claim patent eligible.

Ans. 2–3.

Appellants set forth insufficient evidence for why "a processing device," as claimed, necessarily entails any technological improvement to a computer. *See generally* Reply Br. 3–9. Appellants' lack of restrictions or limitation in the claim or Specification on what constitutes "a processing device," instead, implicitly indicates that the forage inventory calculations can be performed with the human mind, a conventional computer or even a handheld calculator. *See Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1056–57 (Fed. Cir. 2017) (indicating that the claims' failure to provide details as to any non-conventional software can serve as a factor in determining whether the claims recite significantly more than an abstract idea or "simply instruct the practitioner to implement the abstract idea . . . on a generic computer.").

III.

The Examiner separately rejects claims 10–13 under § 101 because "claims 10–13 appear to provide a computer readable medium; however, page 9[,] lines 9–10[,] of the [S]pecification describe[] the medium to includes any other type of medium and that this open-ended definition of a medium could include both transitory and non-transitory medium; and therefore [sic] nonstatutory." Ans. 2–3.

Appellants argue that they disclaim coverage of the non-statutory subject matter: "To clarify these claims, Appellants hereby admit that claims 10–13 cover only non-transitory media and do not cover transitory media, and understand that this admission, as part of the intrinsic record, will be used to limit the scope of these claims in any claim construction procedure in the future." Reply Br. 6.

Appellants also previously amended their Specification in order to exclude transitory signals. The amended passage of the Specification reads as follows:

> As is known in the art, a computer readable medium may be associated with a computer, a computer file, a software package, a hard drive, a floppy, a CD-ROM, a hole-punched card, an instrument, an ASIC, firmware, a "plug-in" for other software, web-based applications, RAM, ROM, or any other type of tangible computer readable medium. ~~This list is not by way of limitation.~~

Amendment to Spec. 9:6–10, filed January 25, 2010 (emphasized with underlining to indicated added text and strikethroughs to indicate deleted text).

We need not decide whether either Appellants' amendment to the Specification or their disclaimer in the Reply Brief of the noted subject matter is a sufficient substitute for amending claims 10–13 to expressly state

that the recited computer readable media is limited to non-transitory media. The amended Specification still defines computer readable media as including "a 'plug-in' for other software." Spec. 9:8. A general purpose dictionary defines a plug-in as "[a]n accessory software or hardware package that is used in conjunction with an existing application or device to extend its capabilities or provide additional functions." *Plug-in Definition*, The American Heritage Science Dictionary (2011), https://www.dictionary.com/browse/plug-in?s=t (last visited December 18, 2018). As such, claims 10–13 still are directed to non-statutory subject matter because they encompass software per se. "Abstract software code is an idea without physical embodiment . . . ." *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437, 449 (2007).

For the foregoing reasons, Appellants have not persuaded us that the Examiner erred in rejecting independent claims 1, 10, and 14 as being directed to patent-ineligible subject matter. We, therefore, sustain the rejection under 35 U.S.C. § 101 of these claims and also the rejection of dependent claims 1–7 and 9–20, which Appellants do not argue separately. *See* Reply Br. 3–9.

THE § 103 REJECTION

Examiner Findings

The Examiner finds that Robbins teaches a method that includes (1) creating a geospatial model of land and (2) selecting forage observation locations and forage analysis routes within the land based upon calculations of the datasets in the geospatial model. Final Act. 4–5. The Examiner finds that White teaches a method that includes the remaining limitations of claim 1, for example, including establishing forage limiting attributes and

area limiting attributes for each forage observation location, establishing a relative spatial extent of land associated with each forage observation location, observing an amount of forage at each forage observation location, calculating a measured forage, calculating a net relative spatial extent of land, and calculating a forage inventory. *Id.* at 5–6. The Examiner concludes that it would have been obvious "to combine [White's] forage calculation system . . . with [Robbins's' g]razing method . . . because [White] teaches the improvement of stocking rate and help avoid overuse or underuse of forage." *Id.* at 6 (citing White, p. 1, col. 2, ¶ 2).

Appellants present multiple arguments in relation to the cited art. We address the arguments *seriatim.*

Contentions and Analysis

Appellants argue that Robbins is completely inapplicable to the invention because "Robbins discloses a weed control method that modifies the natural foraging habits of ungulates," but does not disclose the claimed selection of observation locations or analysis routes. App. Br. 4–5. This argument is unpersuasive. As explained by the Examiner, Robbins is relied on for teaching unremarkable concepts such as using a map (a geospatial model of land that includes datasets of road network and plant community boundaries) to determine observation locations, and that the map includes information about a network of roads that can be used to access the observation locations. Final Act. 4–5 (citing, e.g., Robbins ¶ 64).

Appellants argue that Robbins does not disclose the claimed "calculating" steps. Final Act. 6. This argument is unpersuasive because the Examiner relies on White—not Robbins—for teaching the calculating steps.

Appellants argue that "White does not cure the failings of Robbins" because "White does not disclose the claimed selection of observation

locations or analysis routes." This argument is unpersuasive because regardless of what White teaches regarding observation locations, the Examiner relies on Robbins—not White—for teaching the steps of creating a geospatial model and selecting forage observations locations and forage analysis routes.

Appellants argue that White does not disclose the claimed "calculating" steps because White does not disclose calculating a measured forage, calculating a net relative spatial extent of land, or calculating a forage inventory. App. Br. 7–8. Appellants also argue that "nowhere in White is there a disclosure or suggestion of and of [sic] the claimed calculating steps performed for each observation location." *Id.* at 8.

Addressing the last argument first, Appellants' argument is unpersuasive because White expressly states that the forage survey is conducted for multiple range sites. White 2, ¶¶ 1, 2. *See also id.* at 3, ¶ 6 (setting forth a step of "[s]um[ming] all range sites per pasture to determine pounds of forage per pasture").

Turning to the various calculations, White teaches calculating a measured forage for each range site that is based on a difference between the amount of observed forage at each location and respective forage limiting attributes. *E.g., id.* at 3, ¶ 7 (explaining that measured forage is multiplied by a forage management factor 0.25). White teaches calculating a net relative spatial extent of land. *E.g.*, *id.* at 2, ¶ 1 (explaining grazing calculations are based on the total grazable acreage minus non-grazable acreage) (*cited in* Ans. 4). White teaches calculating a forage inventory based on the respective measured forage and net relative spatial extent of land associated with each forage observation location. *Id.* at 3, ¶ 6 ("The forage supply per range site per pasture is determined by multiplying the

grazable acres by the corrected average pounds per acre of forage. Sum all range sites per pasture to determine the total pounds of forage per pasture").

Appellants argue,

> [r]ather than taking into account the detailed parameters required by the claimed invention when estimating forage availability, White assumes that a constant 25% of forage in an entire rangeland is available to be eaten by livestock (White, page 3, numbered paragraph 7), and does not disclose or suggest the use of forage availability at each observation location, as required by the presently claimed invention.

Reply Br. 11.

Appellants continue,

> White, using a constant percentage, simply cannot accommodate [forage-availability] variability. In contrast, the presently claimed invention establishes and uses "forage limiting attributes" and "area limiting attributes," "for each observation location" [emphasis added], which permits the presently claimed invention to accommodate site specific variability that may vary throughout an entire grazing land. The presently claimed invention thus provides a method of calculating forage inventories on a much more granular level (i.e., at each observation location as opposed to over and entire rangeland) than that proposed by White, which makes estimates over an entire rangeland without regard to local factors existing at each of the observation locations. This is a critical distinction between the forage calculating steps of the presently claimed invention and the teachings of White, and it's a distinction that has been completely glossed over by the Examiner.

Id.

This argument is unpersuasive because it is not commensurate in scope with the claim language. To be sure, claim 1, for example, sets forth that the measured-forage calculations are based on the "*respective* forage limiting attributes" and that the calculations of the net relative spatial extents are based on "*respective* area limiting attributes." Claim 1 (emphasis

added). But the claims do not require that these respective attributes necessarily be distinct or different from one range-site location to the next. That is, the claims currently are written broadly enough to read on a situation, such as White's, in which a single factor of 0.25 is applicable as the forage limiting attributes of each range site.

Appellants also argue that "Robbins and White cannot be permissibly combined under 35 U.S.C. § 103(a)." App. Br. 10. According to Appellants, Robbins and White are directed to disparate, non-analogous fields of technology: Robbins is directed to weed control, while White addresses rudimentary forage estimates. *Id.* Appellants also argue Robbins and White teach away from each other by very virtue of their fields and purposes. *Id.* Appellants also argue that the Examiner does not support the assertion that the two references share model similarities, and that "neither of the references suggest any apparent reason to combine their teachings, and no basis for a reasonable expectation of success in arriving at the claims of the present invention can be found." *Id.*

These arguments are unpersuasive because they are based on the inaccurate premise that the references are being combined based on the similarity of the goals of their underlying models. We understand the Examiner to be combining the references for a broader purpose—to teach that carrying out a forage inventory, as taught by White, can be aided by first creating a geospatial model (or providing a map depicting roads in the vicinity of the forage area) and selecting observations for the forage inventory based on calculations (or mental analysis) of the map, as taught by Robbins. *See, e.g.,* Ans. 5. "The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined

teachings of those references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

For the foregoing reasons, Appellants have not persuaded us of error in the Examiner's obviousness rejection of independent claims 1, 10, and 14. Accordingly, we sustain the Examiner's rejection of these claims, as well as dependent claims 2–7, 9, 11–13, and 15–20, which Appellants do not argue separately. *See* App. Br. 4–12; Reply Br. 9–12.

CONCLUSIONS

Appellants have not shown that the Examiner erred in rejecting claims 1–7 and 9–20 under § 101.

Appellants have not shown that the Examiner erred in rejecting claims 1–7 and 9–20 under § 103.

DECISION

The Examiner's decision rejecting claims 1–7 and 9–20 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)(1). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED