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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte THIERRY PAYEN and YUAN NI

Appeal 2017-010066
Application 14/420,138
Technology Center 2800

Before ADRIENE LEPIANE HANLON, GEORGE C. BEST, and
DEBRA L. DENNETT, *Administrative Patent Judges*.

DENNETT, *Administrative Patent Judge*.

DECISION ON APPEAL¹

¹ In our Opinion, we refer to the Specification filed February 6, 2015 (“Spec.”); the Final Action mailed November 7, 2016 (“Final Act.”); the Advisory Action mailed February 24, 2017 (“Adv. Act.”); the Appeal Br. filed April 6, 2017 (“Appeal Br.”); the Examiner’s Answer mailed June 13, 2017 (“Ans.”); and the Reply Brief filed July 20, 2017 (“Reply Br.”).

STATEMENT OF THE CASE

Appellant² appeals under 35 U.S.C. § 134(a) from a Final Rejection of claims 1–3, 5–11, 13–17, 19, and 20.³ We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

The claims are directed to systems and methods for far field signature reconstruction using data from near field, mid field, and surface field sensors. Spec. ¶ 2. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A method for reconstructing the far field signature of a signal source having a plurality of seismic energy sources, comprising:

receiving a first trace from a first sensor, wherein the first sensor is a near-field sensor;

receiving a second trace from a second sensor located in a different field from the first sensor, wherein the second sensor is a mid-field sensor, which is towed deeper than the near-field sensor;

receiving position information comprising position information for the first sensor and position information for the second sensor;

computing a plurality of notional signatures based on the first trace, the second trace, and the position information;

determining a far field signature by combining the plurality of notional signatures; and

² Appellant is CGG Services SA, the applicants and real party in interest. Appeal Br. 2.

³ Claims 4, 12, and 18 were cancelled by an Amendment filed February 6, 2017, after the Final Action.

generating with a computing system an image of a surveyed subsurface based on the far field signature,

wherein computing the plurality of notional signatures comprises:

generating a first set of simultaneous equations based on the first trace and the position information for the first sensor;

computing a first plurality of preliminary notional signatures by solving the first set of simultaneous equations;

generating a second set of simultaneous equations based on the second trace and the position information for the second sensor;

determining a second plurality of notional signatures by solving the second set of simultaneous equations; and

combining the first plurality of notional signatures and the second plurality of notional signatures.

Appeal Br. 19–20 (Claims App'x).

REJECTIONS

The Examiner maintains and Appellants seek review of the rejection of the claims under 35 U.S.C. § 101 as directed to a judicial exception to patentable subject matter. Final Act. 2–7; Appeal Br. 8–17.

OPINION

Appellant argues claims 1 and 15, and their respective dependent claims, together. Appeal Br. 8–17. We select claim 1 as representative pursuant to 37 C.F.R. § 41.37(c)(1)(iv). As provided by this rule, claims 2, 3, 5–8, 16, 17, 19, and 20 stand or fall with claim 1.

The Examiner finds that claim 1 is directed to the abstract idea of mathematically processing seismic data in order to estimate a far field

signature. Final Act. 2. The Examiner further finds that claim 1 does not include additional elements that are sufficient to amount to significantly more than the judicial exception. *Id.* at 3.

Appellant argues that the Examiner “arbitrar[il]y and capricious[ly] carves out half of the steps recited in claim[s] 1 . . . as ‘abstract claim language.’” Appeal Br. 8–9. Appellant contends that the Examiner oversimplifies the claimed subject matter by failing to account for the “receiving” steps in claim 1. *Id.* at 9.

We do not find the Appellant’s arguments sufficient to identify any reversible error in the Examiner’s rejection.⁴ Because we are in agreement with the Examiner’s reasoning and rebuttal to Appellant’s arguments on appeal, we adopt them as our own and add the following for emphasis.

To determine whether an invention claims ineligible subject matter, we apply the two-step test first introduced in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 72 (2012) and further explained in *Alice Corp. Pty. Ltd. v. CLS Bank International*, 134 S. Ct. 2347, 2354 (2014). First, we must determine whether the claims at issue are directed to a patent-ineligible concept such as an abstract idea. *See Alice*, 134 S. Ct. at 2355. Second, we must “examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Id.* at 2357 (quoting *Mayo*, 566 U.S. at 72, 77).

In this case, we conclude, first, that the Appellant’s claim, directed to reconstruction of the far field signature of a signal source from received data is directed to an abstract idea.

⁴ *See In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011).

Appellant’s arguments against the Examiner’s finding that the recited computing, determining, and generating steps are nothing more than mathematically processing seismic data in order to estimate a far field signature are unpersuasive. *See* Final Act. 2; Appeal Br. 9–11. Appellant’s contention that the Examiner oversimplifies the claims by failing to account for the three “receiving” steps, which require receiving various seismic data, is unpersuasive of error, as the additional steps merely require receiving data to be used in the abstract “computing,” “determining,” and “generating” steps. *See* Appeal Br. 9.

The Examiner finds that claim 1 is similar to the patent-ineligible claims in *Electric Power Group, LLC v. Alstrom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016), in which claims require gathering data from an electrical power grid, analyzing the data, and displaying results of the analysis. Final Act. 4. Appellant contends that claim 1 is more similar to the claims in *Research Corp. Technologies Inc. v. Microsoft Corp.*, 627 F.3d 859 (Fed. Cir. 2010).⁵ Appeal Br. 10–11.

⁵ Appellant also argues that the reasoning in *Thales Visionix Inc. v. United States*, 850 F.3d 1343 (Fed. Cir. 2017), should apply to find the claim not directed to an abstract idea. Reply Br. 1–3. However, we do not address Appellant’s contention related to *Thales Visionix Inc.*, as it is raised for the first time in the Reply Brief, even though the opinion was issued before the filing of the Appeal Brief. Under regulations governing appeals to the Board, a new argument not timely presented in the Appeal Brief will not be considered when filed in a Reply Brief, absent a showing of good cause explaining why the argument could not have been presented in the Appeal Brief. *See Ex parte Borden*, 93 USPQ2d 1473, 1477 (BPAI 2010) (informative) as well as 37 C.F.R. § 41.37 and § 41.41. Because the record contains no such showing, we will not consider the new argument in the Reply Brief.

Upon comparing pending claim 1 to the claims in *Electric Power Group* and *Research Corp. Technologies*, we agree with the Examiner that the claims in *Electric Power Group* are most comparable to the '138 Application's claims. The claims in *Electric Power Group* are directed to collecting data from multiple data sources, analyzing the data, and displaying the results; "[t]he advance they purport to make is a process of gathering and analyzing information of a specified content, then displaying the results, and not any particular assertedly inventive technology for performing those functions." *See Electric Power Group*, 830 F.3d at 1354. Claim 1 is not like the claims in *Research Corp. Technologies* because it does not serve to improve the general functionality of a computer display device, but rather, is directed to analyzing a specific data set in order to obtain a specific result, using a computer as a tool to implement the analysis. *See Ans. 13.*

Having determined claim 1 encompasses a patent-ineligible concept, we next determine whether the claim includes an inventive concept—i.e., an element or combination of elements in the claim that is "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the . . . [abstract idea] itself." *Alice*, 134 S. Ct. at 2357 (quoting *Mayo*, 566 U.S. at 73).

Appellant argues that one or more of the three "receiving" steps of claim 1 amount to significantly more than the mathematical operation of estimating a far field signature because the additional steps tie the mathematical step to the computer's capability of processing seismic data. Appeal Br. 13. Appellant argues that computer-implemented processes are significantly more than an abstract idea "where generic computer

components are able in combination to perform **functions that are not merely generic.**” *Id.* (citing *July 2015 Update to 2014 Interim Guidance on Subject Matter Eligibility*). However, the “receiving” limitations require receiving data, which cannot be said to be more than a generic function. The “receiving” steps do not add significantly to the abstract idea.

Claim 1 also does not improve an existing technological process, contrary to Appellant’s contention. Appeal Br. 14–15. Claim 1 does not improve the functioning of the computer itself, but rather improves the results of data processing algorithms. Even if, as Appellant argues, a supercomputer is required in order to process the data, the use of the computer is a conventional activity. *See id.* at 14.

Appellant also argues that claim 1 does not claim building blocks of human ingenuity. *Id.* at 16; *see Alice Corp.*, 134 S. Ct. at 2354 (“[I]n applying the § 101 exception, we 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.” (internal citations omitted)). As the Examiner noted, the absence of complete preemption does not demonstrate patent eligibility. *Ans.* 16; *see OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015). Moreover, claim 1 preempts the claimed data processing algorithm.

In view of the above analysis, we hold that claim 1 does not recite an inventive concept sufficient to transform the claimed subject matter into a patent-eligible application of the abstract idea, and thus we find claims 1 and 15 and their dependent claims do not comply with 35 U.S.C. § 101.

Appellant separately argues for patentability of independent claim 9, which recites a seismic survey system including a source array, a first sensor, a second sensor, and a computing system. Appeal Br. 17. The Examiner finds that claim 9 is directed to the abstract idea of mathematically processing seismic data in order to estimate a far field signature, noting the elements of computing a plurality of notional signatures, determining a far field signature by combining a plurality of notional signatures, and generating an image of a surveyed subsurface based on the far field signature. Final Act. 5. The Examiner finds that the additional claim elements highlighted by Appellant do not amount to significantly more than the abstract idea. *Id.* In particular, the Examiner finds that the seismic source array by itself does not amount to “something significantly more” than the abstract idea because it is a routine and conventional piece of equipment in the art. Final Act. 7. Appellant fails to show how claim 9 includes additional features that amount to more than routine, conventional activity. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014). We, therefore, conclude that claim 9 and its dependent claims 10 and 11 (not argued separately from claim 9) are directed to patent-ineligible subject matter.

DECISION

The rejection of claims 1–3, 5–11, 13–17, 19, and 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)(iv).

AFFIRMED