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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID NICHOLS and EVERETT C. MOBLEY, JR.

Appeal 2017-002682
Application 13/666,801
Technology Center 3600

Before LYNNE H. BROWNE, ANNETTE R. REIMERS, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

BROWNE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from the rejection of claims 1–11, 13, 15–18, and 21–24. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

CLAIMED SUBJECT MATTER

Claims 1, 10, and 18 are independent. Claim 1, reproduced below, illustrates the claimed subject matter:

> 1. A method, comprising:
> receiving, by a system comprising a processor, acquired data that corresponds at least in part to a target structure;
> forming, by the system, one or more vector image partition (VIP) gathers from at least part of the acquired data, wherein the one or more VIP gathers comprise bins of the acquired data, the bins partitioned based on different values of an offset between a source location of a seismic source and a surface image location, the surface image location on a surface and projected from an image location within the target structure;
> converting, by the system, the one or more VIP gathers into one or more angle gathers; and
> applying, by the system, processing relating to the target structure using the one or more angle gathers.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Xioa-Bi Xie et al., *Wave-equation-base Siesmic Illumination Analysis*, GEOPHYSICS (Sept. 2006).

REJECTIONS

I. Claims 1–11, 13, 15–18, and 21–24 stand rejected under 35 U.S.C. 101.

II. Claims 1–11, 13, 15–18, and 21–24[1] stand rejected under 35 U.S.C. § 102(b) as anticipated by Xie.

DISCUSSION

Rejection of Claims 1–11, 13, 15–18, and 21–24 as Being Directed to Non-statutory Subject Matter

Claims 1–11, 13, 15–17, and 22

Appellants argue claims 1–11, 13, 15–17, and 22 together. *See* Appeal Br. 9–10. We select claim 1 as the illustrative claim, and claims 2–11, 13, 15–17, and 22 stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner determines that claim 1 is directed to the abstract idea of "data manipulation solely performed inside a general purpose computer." Final Act. 3. In support of this determination, the Examiner explains that the claim does not

> include additional elements that are sufficient to amount to significantly more than [an abstract idea] because selecting seismic traces from a set of global seismic traces which advantageously produce an image of a local target structure is known in the art and the steps of converting one gather to another using velocity models of various complexity and generating an image are considered post-solution activity.

Id. The Examiner further notes that "[n]o actual sensor or receiver is recited for receiving seismic reflection signals and no seismic source is present for generating seismic signals." *Id.*

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[1] Although the statement of this rejection indicates that claims 1–20 stand rejected under 35 U.S.C. § 102(b), the explanation that follows includes claims 21–24. Final Act. 4, 10. Furthermore, claims 12, 14, 19, and 20 are canceled. *See* Amendment filed October 13, 2015.

Noting that "[c]laim 1 recites 'applying, by the system, processing relating to the target structure using the one or more angle gathers['] that are produced according to the inventive process of claim 1," Appellants contend that "claim 1 recites a technique to perform processing that relates to a physical structure, namely the target structure of claim 1 . . . [such that], claim 1 is not 'directed to data manipulation solely performed inside a general purpose computer.'" Appeal Br. 9–10 (emphasis omitted). Based on this contention, Appellants argue that claim 1 is not directed to an abstract idea. *Id.* at 10.

Although Appellants are correct that claim 1 relates to a physical structure, Appellants do not contest the Examiner's finding that such structure is not claimed. Further, Appellants do not explain how the method set forth in claim 1 amounts to more than receiving data, analyzing data, manipulating data by converting it to another format, and then transmitting the converted data. *See* Appeal Br. i (Claims App.). Similar data manipulation steps have been held ineligible under § 101. *See Content Extraction and Transmission LLC v. Wells Fargo Bank, National Ass'n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (holding the concept of "1) collecting data, 2) recognizing certain data within the collected data set, and 3) storing that recognized data in a memory" abstract); *see also Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1370 (Fed. Cir. 2015) (*"Intellectual Ventures I")* (concluding that customizing information and presenting it to users based on particular characteristics is abstract as well). Accordingly, we agree with the Examiner that claim 1 is directed to the abstract idea of manipulating data.

Having determined that claim 1 is directed to an abstract idea, we must determine whether the additional elements of the claim transforms it into patent-eligible subject matter. Although claim 1 sets forth limitations directed to specific data to be collected (e.g., target structure data), indicating that an algorithm is to be used to manipulate the collected data (e.g., forming vector image partition gathers and converting those gathers into one or more angle gathers), and requiring the results of the application of this algorithm to be applied, these limitations do not specify how the data collection is accomplished or indicate what use is made of the result obtained. As such, claim 1, at most, requires only "mathematical algorithms to manipulate existing information to generate additional information." *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014). Moreover, on this record, we do not find that the claims are narrowly directed to application of particular rules for achieving an improved technological result. *Cf. McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1316 (Fed. Cir. 2016). Thus, these limitations of claim 1 do not transform the abstract ideas embodied in the claim. Rather, they simply implement those ideas.

Thus, claim 1, when considered "both individually and 'as an ordered combination,'" amounts to nothing more than an attempt to patent the abstract ideas embodied in the steps of this claim. *See Alice*, 134 S. Ct. 2347, 2355 (2014) (quoting *Mayo*, 132 S. Ct. 1289, 1298 (2012)). The limitations of claim 1 fail to transform the nature of these claims into patent-eligible subject matter. *See id.* (citing *Mayo*, 132 S. Ct. at 1297, 1298). Accordingly, we sustain the Examiner's decision rejecting claim 1 as being directed to non-statutory subject matter. Further, as Appellants do not

separately contest the Examiner's determination that the limitations recited in independent claim 10 or the dependent claims at issue here are directed to non-statutory subject matter, we also sustain the Examiner's decision rejecting claims 2–11, 13, 15–17, and 22 on this ground.

Claims 18, 21, 23, and 24

Appellants argue claims 18 and 24 together. Appeal Br. 9. Accordingly, claim 24 stands or falls with claim 18. Further, although claims 21 and 23 depend from claims 1 and 10, respectively, Appellants refer to the arguments pertaining to claim 18 in contesting the rejection of claims 21 and 23. *See id.* at 11. Accordingly, our determination with respect to whether 18 is directed to non-statutory subject matter is dispositive with respect to claims 21 and 23 as well.

Claim 18 is similar to claims 1 and 10, in that it also recites steps requiring the receipt of data, manipulation and conversion of data, and the application of data. *See* Appeal Br. iii (Claims App.). Claim 18 further includes the step of producing an image of the target structure using the data. *See id.* However, this additional step, like the displaying step in *Electric Power Group*, is still directed to an abstract idea. *See Electric Power Group* LLC v. Alstom S.A, 830 F.3d 1350, 1354 (Fed. Cir. 2016). Having determined that claim 18 is directed to an abstract idea, we must determine whether the additional elements of the claim transforms it into patent-eligible subject matter. As in *Electric Power Group* the additional step of merely creating an image does not transform the abstract idea embodied in claim 18.

Accordingly, we sustain the Examiner's decision rejecting claim 18, and claim 24 which falls therewith as being directed to non-statutory subject

matter. As our decision is also dispositive for claims 21 and 23, we also sustain the Examiner's decision rejecting these claims on this ground.

Rejection of claims 1–11, 13, 15–18, and 21–24
as Anticipated by Xie

The Examiner finds that Xie discloses each and every limitation of claims 1, 10, and 18. Final Act. 4–6. In particular, the Examiner finds that Xie discloses "converting, by the system, the one or more VIP gathers into one or more angle gathers." *Id.* at 5 (citing Xie, p. S169, S172).

Appellants argue "[t]here is absolutely nothing in Xie that even remotely teaches or hints at converting the CRP gathers (which the Examiner equated with the 'one or more VIP gathers' of claim 1) to one or more angle gathers." Appeal Br. 17. In support of this contention, Appellants explain that "[s]ince Xie refers to use of CRP gathers and angle-dependent illumination as **alternative** techniques, Applicant respectfully submits that Xie would provide no teaching or hint of the converting of one or more VIP gathers to one or more angle gathers that is recited in claim 1." *Id.*

Responding to this argument, the Examiner asserts that Figure 1 of the instant Application illustrates the converting step and compares Figure 1 of the instant Application to Figure 1 of Xie. *See* Ans. 6. However, Figure 1 of the instant Application does not illustrate converting VIP gathers into angle gathers as claimed. *See* Reply Br. 12. Rather, as Appellants further note, "Fig. 1 depicts an example that includes a source location s and an image location x that is in a subsurface formation 104 underneath an earth

surface 102. The image location x is the location of a seismic trace representing an element in the subsurface formation 104." Spec. ¶ 34. Thus, the Examiner's finding is in error.

For this reason, we do not sustain the Examiner's decision rejecting claims 1, 10, 18, and claims 2–9, 11, 13, 15–17, and 21–24, which depend therefrom, as anticipated by Xie.

DECISION

The Examiner's rejection of claims 1–11, 13, 15–18, and 21–24 under 35 U.S.C. § 101 is AFFIRMED.

The Examiner's rejection of claims 1–11, 13, 15–18, and 21–24 under 35 U.S.C. § 102(b) is REVERSED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED