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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CAROLINE BRUN

Appeal 2017-006453
Application 13/600,329[1]
Technology Center 2600

Before ELENI MANTIS MERCADER, NORMAN H. BEAMER, and ADAM J. PYONIN, *Administrative Patent Judges*.

BEAMER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–26. We have jurisdiction over the pending rejected claims under 35 U.S.C. § 6(b).

We affirm.

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[1] Appellant identifies Xerox Corporation as the real party in interest. (App. Br. 1.)

THE INVENTION

Appellant's disclosed and claimed invention is directed to extracting opinion-related patterns and includes receiving a corpus of reviews, the reviews each including an explicit rating of a topic. (Abstract.) Claims 1, 21 and 24 are independent.

Independent claim 1, reproduced below, is illustrative of the subject matter on appeal:

> 1. A method for extracting opinion-related patterns, comprising:
>
> receiving a corpus of user reviews, each of the reviews in the corpus including an explicit rating of a topic selected by the respective user from a plurality of possible ratings;
>
> partitioning at least a portion of the reviews among a predefined plurality of classes, based on the explicit ranking;
>
> identifying syntactic relations in a text portion of each of the reviews in the portion of the reviews, each of the identified syntactic relations including a first term in the text portion comprising an adjective and a second term in the text portion comprising a noun, the adjective serving as a modifier or attribute of the respective noun;
>
> generating a set of patterns, each of the patterns having at least one of the identified syntactic relations as an instance;
>
> assigning a set of at least four features to each pattern;
>
> with a processor, clustering the patterns into a set of clusters based on the set of features, at least one of the features in the set of features being based on occurrences, in the predefined classes, of the instances of the patterns;
>
> selecting a subset of the clusters and assigning a polarity to patterns in the respective clusters in the subset.

App. Br. 20 (Claims Appendix).

REJECTION

The Examiner rejected claims 1–26 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. (Final Act. 5.)

ISSUE ON APPEAL

Appellant's arguments in the Appeal Brief present the following dispositive issue:[2]

Whether the pending claims are directed to non-statutory subject matter. (App. Br. 7–18.)

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellant's arguments the Examiner erred. We disagree with Appellant's arguments, and we adopt as our own (1) the pertinent findings and reasons set forth by the Examiner in the Action from which this appeal is taken (Final Act. 2–9) and (2) the corresponding findings and reasons set forth by the Examiner in the Examiner's Answer in response to Appellant's Appeal Brief. (Ans. 2–5.) We concur with the applicable conclusions reached by the Examiner, and emphasize the following.

The Examiner concludes the pending claims are invalid under 35 U.S.C. § 101, because the claims are generally "directed to the abstract

[2] Rather than reiterate the arguments of Appellant and the positions of the Examiner, we refer to the Appeal Brief (filed Oct. 27, 2016) (herein, "App. Br."); the Reply Brief (filed Mar. 15, 2017) (herein, "Reply Br."); the Final Office Action (mailed July 8, 2016) (herein, "Final Act."); the Advisory Action (mailed Aug. 5, 2016) (herein, "Advisory Act."); and the Examiner's Answer (mailed Feb. 24, 2017) (herein, "Ans.") for the respective details.

idea of learning opinion related patterns for contextual and domain-dependent opinion detection" (Final Act. 5), in which the Examiner provides "[a] detailed description how each step can be performed by [a user]" (Final Act. 5; *see* for example, Final Act. 5–6 describing how each step in claim 1 can be performed by a user.) Akin to the analysis provided in *Electric Power Group, LLC v. Alstom S.A.*, 830 F3d. 1350 (Fed. Cir. 2016), the Examiner additionally finds that

> [t]he claims focus on collecting information, analyzing it and displaying certain results of the collection and analysis. The claims collect information, which does not change its character as information. The analyzing can be done by steps that goes through one's mind, or by mathematical algorithms, which is essentially mental processes within the abstract-idea category. Presenting results of abstract processes of collecting and analyzing information is abstract as an ancillary part of collection and analysis. Here, the claims are clearly focused on the combination of those abstract idea processes.

(Ans. 4.)

Appellant argues that "[t]he claims do not fall within the Abstract Ideas exception" (Reply Br. 8), because the claims "do not fall within the category of 'mental process.'" (Reply Br. 8.)

Regarding claims 1–20, Appellant contends that "at least four features are to be considered in the clustering" and "[s]uch a task is not known to be performed in the head of a person or with pen and paper." (Reply Br. 9.) Appellant distinguishes the result in *SmartGene, Inc. v. Advanced Biological Laboratories, SA,* 555 Fed.Appx. 950 (Fed. Cir. 2014), noting that "the *SmartGene* decision was 'limited to the circumstances presented here, in which every step is a familiar part of the conscious process that doctors can and do perform in their heads.'" (Reply Br. 7–8, quoting *SmartGene* at

955.) Appellant makes related arguments based on the claimed clustering techniques with respect to claim 25 (Reply Br. 11–12), claims 21–23 (Reply Br. 12), claims 24 and 26 (Reply Br. 13).

We are not persuaded by Appellant's arguments. We adopt the Examiner's findings and conclusions provided in the Final Office Action and Answer. (Final Act. 2–9; Ans. 2–5.) The Supreme Court has long held that "[l]aws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2116 (2013)). The "abstract ideas" category embodies the longstanding rule that an idea, by itself, is not patentable. *Alice Corp.*, 134 S. Ct. at 2354-55 (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)).

In *Alice*, the Supreme Court sets 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. The first step in the analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts," such as an abstract idea. *Id*. If the claims are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims "individually and 'as an ordered combination"' to determine whether there are additional elements that "'transform the nature of the claim' into a patent-eligible application." *Id*. (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 79, 78 (2012)). In other words, the second step is to "search for an 'inventive concept'—*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the

[ineligible concept] itself.'" *Id*. (brackets in original) (quoting *Mayo*, 566 U.S. at 73.) The prohibition against patenting an abstract idea "'cannot be circumvented by attempting to limit the use of the formula to a particular technological environment' or adding 'insignificant postsolution activity.'" *Bilski v. Kappos*, 561 U.S. 593, 610-11 (2010) (internal citation omitted.)

Appellant's arguments focus on claim 1—accordingly we select claim 1 as representative in evaluating whether the claims are patent-eligible under Section 101. Independent claims 21 and 24 recite additional steps that are readily performable by a human being, and these claims follow the same analysis as claim 1.[3] *See* 37 C.F.R. § 41.37(c)(1)(iv). Turning to the first step of the *Alice* inquiry, we agree with the Examiner that Appellant's claim 1 is reasonably characterized as directed to an abstract idea of "learning opinion related patterns for contextual and domain-dependent opinion detection." (Final Act. 5.) All the components recited in claim 1 — including: (i) receiving a corpus of user reviews; (ii) partitioning at least a portion of the reviews; (iii) identifying syntactic relations; (iv) generating a set of patterns; (v) assigning a set of at least four features to each pattern; (vi) clustering the patterns; and (vii) selecting a subset of the clusters and assigning a polarity—are consistent with the Examiner's correct characterization of the "learning opinion related patterns for contextual and domain-dependent opinion detection" abstract idea that is the subject of the

[3] We note that Appellant's arguments regarding the second step of the *Alice* test makes reference to claim 1 (*see* Reply Br. 15) with only passing remarks regarding claims 20, 21, and 23 (*see* Reply Br. 17.)

claims, which is a sequence of steps readily performed by a human being using index cards or the like.

There is no definitive rule to determine what constitutes an "abstract idea." Rather, the Federal Circuit has explained that "both [it] and the Supreme Court have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016); *see also Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016) (explaining that, in determining whether claims are patent-eligible under § 101, "the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided"). The Federal Circuit also noted that "examiners are to continue to determine if the claim recites (i.e., sets forth or describes) a concept that is similar to concepts previously found abstract by the courts." *Amdocs*, 841 F.3d at 1294 n.2 (internal citation omitted.)

We are not persuaded by Appellant's arguments that "[h]ere the steps are clearly not performable purely mentally" (Reply Br. 9) as Appellant provides no factual support for the assertion that "clustering in a multidimensional feature space (of at least four features) is not a trivial operation" that could not be performed manually, at least for smaller populations of reviews within the scope of the claims. (Reply Br. 10.) Here, the claims are similar to the claims that the Federal Circuit determined are patent ineligible in *Electric Power Group*, 830 F.3d at 1353–54 (collecting information and "analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, [are] essentially

mental processes within the abstract-idea category"). The Federal Circuit has also held similar data manipulation claims to be directed to patent-ineligible abstract idea—*see Digitech Image Techs., LLC v. Elecs. For Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) (employing mathematical algorithms to manipulate existing information); *OIP Tech., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015) (offer-based price optimization); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1370 (Fed. Cir. 2015) (tailoring information presented to a user based on particular information); *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1346 (Fed. Cir. 2013) (generating tasks in an insurance organization); and *Versata Dev. Grp. v. SAP Am.*, 793 F.3d 1306, 1333–34 (Fed. Cir. 2015) (price-determination method involving arranging organizational and product group hierarchies).

Turning to the second step of the *Alice* inquiry, we find nothing in the claims that adds anything "significantly more" to transform the abstract concept of learning opinion related patterns for contextual and domain-dependent opinion detection. *Alice*, 134 S. Ct. at 2357. Beyond that abstract idea, the claims merely recite "'well-understood, routine, conventional activit[ies],"' either by requiring conventional computer activities (such as clustering) or routine data-gathering steps. *Alice*, 134 S. Ct. at 2359 (quoting *Mayo*, 566 U.S. at 73.) Considered individually or taken together as an ordered combination, the claim elements fail "to 'transform' the claimed abstract idea into a patent-eligible application." *Id*. at 2357 (quoting *Mayo*, 566 U.S. at 72–73, 78.)

Appellant argues that "even if the claims are directed to an Abstract idea, they recite significantly more." (Reply Br. 14.) Appellant contends

that in claim 1, "the clustering of patterns, not merely data, is based on at least four features" and that the claim "recites the additional step of *selecting a subset of the clusters and assigning a polarity to patterns in the respective clusters in the subset*." (Reply Br. 15, italics in original.) Appellant further contends that "the specification clearly describes how the method claimed provides advantages in performance by providing contextual rules that are useful in detecting opinions in an opinion detection system" through patterns in which "each pattern includes a syntactic relationship between a first term with an ambiguous polarity ('ambiguous term') and a second term ('supporting term') each of which has been assigned a predefined part of speech within an expression in which the two terms are found." (Reply Br. 18, citing Spec. ¶¶ 6, 27, 122, 129, Table 5, for an improvement of "about 3.3%" when using patterns. Spec ¶¶ 129–130.)

We are not persuaded that Appellant's claim limitations and "advantages in performance" described in the specification, serve to add significantly more, because the claims are not "directed to a specific improvement to computer functionality" but instead relate to "use of [] abstract mathematical formula[s] on any general purpose computer." *Enfish,* 822 F.3d at 1338. The limitations identified by Appellant appear to enlarge and refine the ability of a general purpose computer to perform the mathematical calculations used to "extract[] opinion-related patterns" as recited in the preamble of claim 1.

Further, the "advantages in performance" cited by Appellant requires a "first term with an ambiguous polarity" and Appellant identifies no such limitation in the claims; this additionally contradicts Appellant's assertion that "As in *McRO,* where the claims at issue were found to satisfy §101, the

rules ('patterns') claimed here provide improvements over the existing process, as demonstrated in the Examples." (Reply Br. 19, citing *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016).)

Appellant finally argues that the claims do not preempt the field, because "very particular steps must be carried out and/or claim features must be satisfied" and because there are "numerous non-infringing alternatives that are significant and substantial." (Reply Br. 21.) That the claims do not preempt all forms of the abstraction or may be limited to opinion-related pattern extraction, does not make them any less abstract. *See OIP Techs., Inc.* v. *Amazon.com, Inc.*, 788 F.3d 1359, 1360-61 (Fed. Cir. 2015).

Because Appellant's claims are directed to a patent-ineligible abstract concept and do not recite something "significantly more" under the second prong of the *Alice* analysis, we sustain the Examiner's 35 U.S.C. § 101 rejection of the pending claims.

DECISION

The Examiner's decision rejecting claims 1–26 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