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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO. Includes details for application 13/295.002, inventor Robert William Cathcart, and examiner NGUYEN, LINH T.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROBERT WILLIAM CATHCART,
RAFAEL LINDEN SAGULA, CAMERON ALEXANDER MARLOW,
JONATHAN CHANG, SIDDHARTH KAR, and ERIC SUN

Appeal 2018-006543
Application 13/295,002¹
Technology Center 2400

Before TERRENCE W. McMILLIN, KARA L. SZPONDOWSKI, and
SCOTT B. HOWARD, *Administrative Patent Judges*.

HOWARD, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1, 2, and 4–17, which constitute all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ Appellants identify Facebook, Inc. as the real party in interest. App. Br. 2.

THE INVENTION

The disclosed and claimed invention is directed to “providing universal social context for concepts in a social networking system.” Spec.

¶ 1.²

Claim 1, reproduced below with the disputed limitations italicized, is illustrative of the claimed subject matter:

1. A method comprising:

maintaining, in a graph database by a social networking system, *a plurality of metapage objects, where each metapage object represents a unique entity and is connected in the graph database to a plurality of page objects that each represents a web page having a different website domain and is attributed to the same unique entity of the connected metapage object;*

maintaining a plurality of connections between users of the social networking system;

logging actions performed by the plurality of users on the plurality of page objects;

receiving, from a viewing user of the plurality of users, a request for social context information for a first page object of the plurality of page objects;

querying the graph database for a set of page objects that are connected to the same metapage object as the first page object;

determining a plurality of actions performed on one or more of the plurality of page objects in addition to the first page object by other users of the social networking system who are connected to the viewing user in the social networking system;

² We refer to the Specification filed November 11, 2011 (“Spec.”); the Final Office Action mailed July 18, 2016 (“Final Act.”); the Appeal Brief filed June 19, 2017 (“App. Br.”); the Examiner’s Answer mailed April 4, 2018 (“Ans.”); and the Reply Brief filed June 4, 2018 (“Reply Br.”).

aggregating the determined plurality of actions performed by other users of the social networking system who are connected to the viewing user in the social networking system;

determining the requested social context information based on the aggregated actions, the social context information comprising a textual description of the aggregated actions; and

providing the social context information to the viewing user in connection with the first page object.

REFERENCES

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

Lo et al. ("Lo")	US 2006/0195461 A1	Aug. 31, 2006
Luo et al. ("Luo")	US 2011/0022602 A1	Jan. 27, 2011
Howes et al. ("Howes")	US 2012/0215846 A1	Aug. 23, 2012
Frankel et al. ("Frankel")	US 2013/0046781 A1	Feb. 21, 2013
Singleton et al. ("Singleton")	US 8,996,625 B1	Mar. 31, 2015

REJECTIONS

Claims 1, 6, 7, 9, 13, 14, 16, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Singleton and Lo. Final Act. 5.

Claims 2 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Singleton, Lo, and Frankel. Final Act. 10.

Claims 4 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Singleton, Lo, and Howes. Final Act. 11.

Claims 5, 8, 12, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Singleton, Lo, and Luo. Final Act. 13.

Claims 1–2 and 4–17 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to patent-ineligible subject matter. Ans. 2.³

ANALYSIS

Section 101 Rejection

Patent-eligible subject matter is defined in § 101 of the Patent Act, which recites “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”

There are, however, three judicially created exceptions to the broad categories of patent-eligible subject matter in § 101: laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 215–17 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70–71 (2012). Although an abstract idea, itself, is patent-ineligible, an application of the abstract idea may be patent-eligible. *Alice*, 573 U.S. at 217. Thus, we must consider “the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (citing *Mayo*, 566 U.S. at 79, 78). The claim must contain elements or a combination of elements that are “sufficient to ensure that the

³ The rejection under Section 101 is a new ground of rejection. Ans. 2. Appellants elected to respond to the new ground in the Reply. *See generally* Reply Br.

patent in practice amounts to significantly more than a patent upon the [abstract idea] itself.” *Id.* (citing *Mayo*, 566 U.S. at 72–73).

The Supreme Court set forth a two-part “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 217.

First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts. [*Mayo*, 566 U.S. at 75–77] If so, we then ask, “[w]hat else is there in the claims before us?” *Id.* To answer that question, we consider the elements of each claim both individually and “as an ordered combination” to determine whether the additional elements “transform the nature of the claim” into a patent-eligible application. *Id.* [at 79, 77–78]. . . . We have described step two of this analysis as a 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.* [at 72–73]

Id. at 217–18.

“The ‘abstract idea’ step of the inquiry calls upon us to look at the ‘focus of the claimed advance over the prior art’ to determine if the claim’s ‘character as a whole’ is directed to excluded subject matter.” *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257–58 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016). 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*, 822 F.3d at 1334; *see also Amdocs (Isr.) Ltd. v. Openet*

Telecom, Inc., 841 F.3d 1288, 1294 (Fed. Cir. 2016) (explaining that, in determining whether claims are patent-ineligible 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”).

Concepts determined to be abstract ideas, and, thus, patent-ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski v. Kappos*, 561 U.S. 593, 611 (2010)); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 69 (1972)). Concepts determined to be patent-eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that “[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula.” *Diehr*, 450 U.S. at 187; *see also id.* at 191 (“We view respondents’ claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula.”). Having said that, the Supreme Court also indicated that a claim “seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological

environment.” *Id.* (citing *Benson* and *Flook*); *see, e.g., id.* at 187 (“It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”).

If the claim is “directed to” an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where “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.” *Alice*, 573 U.S. at 221 (internal citation omitted). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* (quoting *Mayo*, 566 U.S. at 77). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.*

The PTO recently published revised guidance on the application of § 101. USPTO’s January 7, 2019 Memorandum, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Memorandum”). Under that guidance, we first look to whether the claim recites:

- (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes); and
- (2) additional elements that integrate the judicial exception into a practical application (*see* MANUAL OF PATENT EXAMINING PROCEDURE (MPEP) § 2106.05(a)–(c), (e)–(h) (9th Ed., Rev. 08.2017, Jan. 2018)).

See Memorandum at 52, 55–56. Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

(3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)); or

(4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

See id. at 56.

Furthermore, the Memorandum “extracts and synthesizes key concepts identified by the courts as abstract ideas to explain that the abstract idea exception includes the following groupings of subject matter, when recited as such in a claim limitation(s) (that is, when recited on their own or *per se*)”:

(a) Mathematical concepts—mathematical relationships, mathematical formulas or equations, mathematical calculations;

(b) Certain methods of organizing human activity—fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions); and

(c) Mental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion).

Id. at 52 (footnotes omitted).

The Examiner concludes that claims are similar to those found to be patent-ineligible in *Electric Power* and identifies the abstract idea as

“collecting information, analyzing it, and displaying certain results of the collection and analysis.” Ans. 4 (citing *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016)).

Appellants argue that the claims are not directed to an abstract idea; instead, Appellants argue the claims are directed to “a specific type of data structure—a graph database—that stores metapage objects and page objects,” and provide “a specific implementation to a solution to a problem in the software arts—how to organize [the] user preference information expressed through actions taken across multiple domains and use this data to provide social context information.” Reply Br. 7–8 (citing Spec. ¶¶ 4, 5); *see* Reply Br. 6–7.

On the current record, we are persuaded that the Examiner failed to identify a patent-ineligible abstract idea. In *Electric Power*, relied on by the Examiner, the Federal Circuit recognized that “analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.” *Electric Power*, 830 F.3d at 1354. For example, claim 12 in *Electric Power* involved analyzing events based on measurements. *See id.* at 1351–52. That is the type of activity that can be, and often is, performed in the human mind.

In contrast, the instant claims involve “a graph database by a social networking system” and “a plurality of metapage objects, where each metapage object represents a unique entity and is connected in the graph database to a plurality of page objects that each represents a web page having a different website domain and is attributed to the same unique entity of the connected metapage object.” The collection and analysis of such data

cannot easily be performed by a human being, either mentally or with pen and paper.

Instead, the claims are more similar to those found patent-eligible in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). In *DDR*, the Federal Circuit held that the claims were patent-eligible “because they do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet.” *DDR*, 773 F.3d at 1257. Unlike claims courts had previously found patent-ineligible, the Federal Circuit found that *DDR*’s claims “overcome a problem specifically arising in the realm of computer” technology. *Id.*

Like the claims in *DDR*, the instant claims are not patent-ineligible because they do not “recite a commonplace business method aimed at processing business information, applying a known business process to the particular technological environment of the Internet, or creating or altering contractual relations using generic computer functions and conventional network operations.” *Id.* at 1259. Instead, the claims are directed to solving a problem related to computer technology associated with social networking systems, for which there is no pre-Internet analogy.

In light of the above analysis, and because organizing user preference information expressed through actions taken across multiple domains as metapage objects connected to page objects and using the metapage objects to provide social context information is not a mathematical concept, an identified method of organizing human activity, or a mental process, we conclude the claimed invention is not directed to an abstract idea. *See* Memorandum at 52; *see also id.* at 53 (“Claims that do not recite matter that

falls within these enumerated groupings of abstract ideas should not be treated as reciting abstract ideas, except” in rare circumstances.).

Accordingly, we do not sustain the Examiner’s rejection.

Section 103 Rejections

Appellants contend “Lo does not show a metapage object that represents a unique entity and is connected to page objects that are attributed to the same unique entity.” App. Br. 6–7. Specifically, Appellants argue “Lo’s ‘topic connection mode’ links disparate keywords to create a single topic, for which the disparate keywords cannot be attributed as representing the same unique entity.” App. Br. 7. According to Appellants, Lo’s examples “demonstrate that Lo’s keywords (e.g., ‘ice’) are not attributed to the same unique entity as the topics in the topic connection node (e.g., ‘ice cream’ and ‘ice skate rink’).” App. Br. 7 (emphases omitted). Appellants further argue “Lo’s Contexts and topics are not attributed to the same unique entity” (App. Br. 9), and instead Lo’s “context connecting node (e.g., ‘chocolate ice cream recipe’) collects together disparate topics (e.g., ‘ice cream’ and ‘recipe’) and does not represent a single entity attributed to these topics.” App. Br. 8–9 (emphases omitted).

We agree with the Examiner’s findings that Lo’s connecting nodes presenting “context and linking members,” and “content members relat[ing] to a topic,” teaches the claimed metapage objects representing unique entities and connected to page objects that are attributed to the same unique entities of the connected metapage objects. Final Act. 7 (citing Lo Fig. 2, ¶¶ 68, 115–123, 130–131, 139–143). As cited by the Examiner (Final Act. 7), Lo teaches

interrelated members (topics, content members, preexisting Contexts, and the combination thereof) may be cross-linked together into a single Context connecting node to form a Context . . . connecting node C1 relates to the topics “ice cream” (from topic connecting node T1), “recipe” and “chocolate” (from topic connecting nodes T2 and T3, each comprises of a single keyword) to form the meaning of “chocolate ice cream recipe” for the Context.

Lo ¶ 130 (emphases omitted). Lo further discloses “content members 51, 53, and 55, cross-linked to the node C1,” which may each “be of any type or format, for instance . . . a web page.” Lo ¶ 131 (emphases omitted). In other words, Lo teaches a Context (i.e., “chocolate ice cream recipe”) represented by connecting node C1 and web pages (i.e., content members 51, 53, 55, as web pages) each connected to the Context (i.e., “chocolate ice cream recipe”) by Context connecting node C1. Appellants have not persuasively argued why Lo’s Context represented by connecting node C1 does not teach the claimed “metapage objects,” each representing “a unique entity,” or why Lo’s content members 51, 53, 55, as web pages, each connected to Context by connecting node C1, do not teach the claimed plurality of page objects that is each attributed to the same unique entity of the connected metapage object.

Accordingly, we sustain the Examiner’s rejection of claim 1, along with the rejections of commensurate claim 9, for which Appellants rely on the same arguments as discussed above for claim 1, along with dependent claims 2, 4–8, and 10–17, which are not argued separately.

DECISION

We reverse the Examiner’s rejection of claims 1, 2, and 4–17 under 35 U.S.C. § 101.

Appeal 2018-006543
Application 13/295,002

We affirm the Examiner's rejection of claims 1, 2, and 4–17 under 35 U.S.C. § 103.

Because we affirm at least one ground of rejection with respect to each claim on appeal, we affirm the Examiner's decision to reject all of the pending claims.

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED