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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ZACHARY ETHAN CARPEN RAIT,
BLAKE A. ROSS, and BENJAMIN E. HILLER

Appeal 2017-008700
Application 13/455,506[1]
Technology Center 2400

Before BRUCE R. WINSOR, ADAM J. PYONIN, and
MICHAEL J. ENGLE, *Administrative Patent Judges*.

ENGLE, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1–3 and 5–19, which are all of the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

Technology

The application relates to "adding information to user profiles based on the addition of users to groups of users in the social network." Spec. ¶ 1.

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[1] Appellants state the real party in interest is Facebook, Inc. App. Br. 2.

Illustrative Claim

Claim 1 is illustrative and reproduced below with certain limitations at issue emphasized:

1. A computer-implemented method comprising:

storing, by a computer system, user profiles for users of a social networking system, the user profiles describing characteristics of the users of the social networking system;

storing, by the computer system, a social graph including nodes connected by edges, each node representing a distinct one of the users of the social networking system and each edge that connects a pair of nodes in the social graph describing a relationship of users represented by the pair of nodes;

creating, by the computer system, a group of other users of the social networking system who are connected to a user in the social graph based on the group of other users and the user all being associated with a common characteristic in the social networking system, the common characteristic associated with a geographical location;

storing, by the computer system, group data identifying the common characteristic and one or more connections included in the group of other users;

receiving, by the computer system, a request from the user to add an additional user of the social networking system to whom the user is connected in the group of other users;

accessing, by the computer system, a user profile for the additional user from the stored user profiles;

determining, by the computer system, that the user profile for the additional user lacks the common characteristic associated with the group of other users;

responsive to the user profile for the additional user lacking the common characteristic, calculating, by the computer system, a score for the common characteristic based on interactions in the social networking system between the additional user and at least one of the other users included in the

> group of other users, characteristics of other users to whom the additional user is connected in the social graph, and a comparison of the geographical location associated with the common characteristic and a plurality of geographical locations associated with the additional user, the score indicative of whether to add the common characteristic to the user profile for the additional user; and
>
> responsive to the score for the common characteristic exceeding a threshold value, updating the user profile for the additional user to include the common characteristic.

Rejections

Claims 1–3 and 5–19 stand rejected under 35 U.S.C. § 101 as being directed to ineligible subject matter. Final Act. 2–6.

Claims 1, 3, 5, 6, 9–11, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Lento et al. (US 2011/0246574 A1; Oct. 6, 2011), Chen et al. (US 2011/0314105 A1; Dec. 22, 2011), Priyadarshan et al. (US 2012/0042262 A1; Feb. 16, 2012), Darr (US 2007/0226248 A1; Sept. 27, 2007), and Aceves et al. (US 2010/0041378 A1; Feb. 18, 2010). Final Act. 7–18.

Claims 2, 7, 8, and 12 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Lento, Chen, Priyadarshan, Darr, Aceves, and Byrnes et al. (US 2002/0002705 A1; Jan. 3, 2002). Final Act. 18–20.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as obvious over the combination of Lento, Chen, Priyadarshan, Darr, Aceves, Byrnes, and Hull et al. (US 2011/0289574 A1; Nov. 24, 2011). Final Act. 21–22.

Claims 14, 15, and 17 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Lento, Chen, Priyadarshan, Darr, Aceves, and Baluja et al. (US 2012/0054205 A1; Mar. 1, 2012). Final Act. 22–23.

Claim 16 stands rejected under 35 U.S.C. § 103(a) as obvious over the combination of Lento, Chen, Priyadarshan, Darr, Aceves, Baluja, and Byrnes. Final Act. 24.

ISSUES

1. Did the Examiner err in concluding that claim 1 was directed to ineligible subject matter under § 101?

2. Did the Examiner err in finding Lento teaches or suggests "responsive to the user profile for the additional user lacking the common characteristic, calculating, by the computer system, a score for the common characteristic," as recited in claim 1?

ANALYSIS

§ 101

Section 101 defines patentable subject matter: "Whoever 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." 35 U.S.C. § 101. The Supreme Court, however, has "long held that this provision contains an important implicit exception" that "[l]aws of nature, natural phenomena, and abstract ideas are not patentable." *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012) (quotation omitted). To determine patentable subject matter, the Supreme Court has set forth a two part test.

"First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts" of "laws of nature, natural phenomena, and abstract ideas." *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014).

"The inquiry often is whether the claims are directed to 'a specific means or method' for improving technology or whether they are simply directed to an abstract end-result." *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1326 (Fed. Cir. 2017). A court must be cognizant 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), and "describing the claims at . . . a high level of abstraction and untethered from the language of the claims all but ensures that the exceptions to § 101 swallow the rule." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1337 (Fed. Cir. 2016). Instead, "the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter." *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015).

In the second step, 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." *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 566 U.S. at 79, 78). The Supreme Court has "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.* (quotation omitted). For computer-related technology, the Federal Circuit has held that a claim may pass the second step if "the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer [technology]." *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014) (e.g., "a challenge particular to the Internet").

"Eligibility under 35 U.S.C. § 101 is a question of law, based on underlying facts." *SAP Am., Inc. v. InvestPic, LLC*, 890 F.3d 1016, 1020 (Fed. Cir. 2018).

Here, for the first step, Appellants argue "the examiner has not identified how the present claims are similar to the methods of organizing human activity/mathematical formulas previously identified by the courts." App. Br. 6. The Examiner responds that the "Examiner did not assert that the proposed abstract idea is considered a method of organizing human activity." Ans. 3. Instead, the Examiner relies on the claim being "an idea of itself," specifically "a mental process (thinking) that can be performed in the human mind." *Id.* (quotation marks omitted); *see also* Final Act. 3–4.

The Federal Circuit treats "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." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016). We agree with the Examiner that "with the exception of generic computer-implemented steps, there is nothing in the claims themselves that foreclose them from being performed by a human, mentally or with pen and paper." *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016). In *Intellectual Ventures*, the Federal Circuit held the claimed filtering of email was the same abstract idea as the "long-prevalent practice for people receiving paper mail to look at an envelope and discard certain letters, without opening them, from sources from which they did not wish to receive mail based on characteristics of the mail." *Id.* at 1314. Moreover, "[t]he list of relevant characteristics could be kept in a person's head." *Id.* The same is true here where humans mentally keep track of different circles

of friends and their common characteristics. *See* Ans. 3, 6–9. For example, if you go to a party at Bob's house and you don't know where Bob went to college but all of Bob's friends went to the University of Wisconsin, it would be reasonable to conclude there is a high probability that Bob also went to the University of Wisconsin (i.e., calculating as in claim 1) and, when you talk to Bob, to ask him if he went to the University of Wisconsin (i.e., the suggestion process in claim 2). *See also* Ans. 7 (providing an example of running into Jack multiple times at locations near a college leading to a deduction that Jack may be a student at that college).

For the second step, Appellants argue that the claims recite significantly more because "the claims clearly do not tie up all possible ways of updating a user profile of a user in a social network system to include a common characteristic[] of a group to which the user was added." App. Br. 8. However, we agree with the Examiner (Ans. 4) that "[w]hile preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015). "Where a patent's claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, as they are in this case, preemption concerns are fully addressed and made moot." *Id.*

Appellants argue that the "calculating" step in particular adds significantly more. App. Br. 9. But as discussed above, we agree with the Examiner that other than a generic "computer system," Appellants fail to explain "how the argued limitation cannot be performed mentally by a human being." Ans. 6.

Appellants also analogize to *DDR Holdings* in arguing that "[t]he claims of this application address the problem of updating user profiles of users in a social networking system." App. Br. 10. But we agree with the Examiner that claim 1 merely is "automating the process of human thinking" by using a computer. Ans. 8. "[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention." *Alice*, 134 S. Ct. at 2358.

Accordingly, we sustain the Examiner's rejection under § 101 of claim 1, and claims 2, 3, and 5–19, which Appellants do not argue separately. *See* App. Br. 5–11; 37 C.F.R. § 41.37(c)(1)(iv).

§ 103

Claim 1 recites "responsive to the user profile for the additional user lacking the common characteristic, calculating, by the computer system, a score for the common characteristic." Independent claims 7 and 14 recite commensurate limitations.

The Examiner relies on Lento for teaching or suggesting this limitation. Final Act. 9. Lento relates to "facilitating a user's creation of a group of other users from among the user's connections in the user's social network." Lento ¶ 1. In particular, Lento discloses:

> [A]fter a user has started to create a new group of connections, other existing connections of that user are suggested while the user continues to add connections to the group. The connections to suggest to the user are selected based on their similarity to a common characteristic among the connections that have already been added to the group. . . . The common characteristic is determined . . . based on the characteristic having the highest degree of similarity among the users in the new group. . . . As additional connections are added to the group, the social

> networking system may update the suggestions of connections to add to the group.

Lento ¶ 4. Thus, Lento discloses an iterative process in which every time a user adds a new connection to a group, the social networking system looks for common characteristics in the revised group and suggests other connections based on those common characteristics.

The Examiner relies on paragraph 26 of Lento, which discloses "[t]he common characteristic may be defined as the characteristic shared by a *majority* of the selected connections" (as opposed to a characteristic "absolutely shared by the entire set"). Lento ¶ 26 (emphasis added); Ans. 27. Thus, there may be instances when not every connection in the group has the common characteristic, but that characteristic nonetheless is "the characteristic shared by a majority of the selected connections." Lento ¶ 26.

The Examiner further finds "Lento [0033] provides for determining a common characteristic or lack of between a group of users, and in response to that and based on weights [0035] making a calculation." Final Act. 9. Specifically, paragraph 35 of Lento discloses "the determined common characteristics may be defined to select a subset of the shared characteristics" and "[t]he selection of the subset may be based on weights." Thus, paragraph 35 of Lento applies when there are *multiple* common characteristics and the social networking system wants to select only a subset of them.

However, the use of weights in Lento is responsive to there being multiple common characteristics, not "responsive to the user profile for the additional user lacking the common characteristic" as claimed. For example, suppose a user creates a group of connections that are (A) aged 18–25 and (B) with "Green Bay Packers" listed in their interests. *See* Lento

¶¶ 34–35. If the user adds another connection whose profile indicates she is aged 18–25 but does not indicate whether she is interested in the Packers, then the new sole common characteristic is "aged 18–25" and the system does not calculate any weights. Thus, there is no calculating a score for the Packers characteristic "responsive to the user profile for the additional user lacking the common characteristic." Moreover, the same weighting would occur if the profile of the added connection either matched *all* the prior common characteristics or *none* of them. Thus, the calculating of weights is responsive to multiple common characteristics, regardless of whether the new connection's profile indicated an interest in the Packers.

The Examiner therefore has not shown that Lento teaches or suggests "responsive to the user profile for the additional user lacking the common characteristic, calculating, by the computer system, a score for the common characteristic," as recited in claim 1.

Accordingly, we do not sustain the Examiner's rejections under § 103 of independent claims 1, 7, and 14, and their dependent claims 2, 3, 5, 6, 8–13, and 15–19.

DECISION

For the reasons above, we affirm the decision rejecting claims 1–3 and 5–19 under § 101.

We reverse the decision rejecting claims 1–3 and 5–19 under § 103.

Because we affirm at least one rejection for every appealed claim, we designate this Decision an affirmance.

No time for taking subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 41.50(f).

AFFIRMED