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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/452,769	08/06/2014	Aaron K. Baughman	END920140078US1	4645

87334 7590 12/31/2018

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ART UNIT	PAPER NUMBER
2122	

NOTIFICATION DATE	DELIVERY MODE
12/31/2018	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte AARON K. BAUGHMAN, BRIAN W. JENSEN, and MAURO MARZORATI

Appeal 2018-004717[1]
Application 14/452,769[2]
Technology Center 2100

Before JOHN D. HAMANN, JOYCE CRAIG, and MATTHEW J. McNEILL, *Administrative Patent Judges*.

HAMANN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants file this appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] Our Decision relies upon Appellants' Appeal Brief ("App. Br.," filed Sept. 28, 2017), Reply Brief ("Reply Br.," filed Apr. 2, 2018), and Specification ("Spec.," filed Aug. 6, 2014), as well as the Examiner's Answer ("Ans.," mailed Feb. 28, 2018) and the Final Office Action ("Final Act.," mailed May 17, 2017).

[2] According to Appellants, the real party in interest is International Business Machines Corporation. App. Br. 2.

THE CLAIMED INVENTION

Appellants' claimed invention relates to serving content in a data network, including predictively adjusting resource refresh in a Content Delivery Network ("CDN"). Spec. ¶ 1. Claim 1 is representative of the subject matter on appeal and is reproduced below.

> 1. A method for predictive adjustment of resource refresh in a Content Delivery Network (CDN), the method comprising:
>
> identifying a set of features in a resource, the resource being served from a cache in the CDN, the CDN comprising a set of data processing systems and data storage devices spread across a data network to provide a caching function in content delivery, a feature in the set of features causing a first information available in the resource at a first time to change to a second information in the resource at a second time responsive to an event;
>
> determining a set of weights corresponding to the set of features, wherein a weight in the set of weight is related to a corresponding feature in the set of features;
>
> computing, using a processor and a memory, and using the set of weights and the set of features, an entropy, the entropy comprising a probability that the resource is going to change;
>
> computing, using the entropy, a stale probability, the stale probability comprising a probability that an outdated version of the resource is going to be served from the cache in the CDN at the second time; and
>
> adjusting a refresh information responsive to the stale probability exceeding a threshold probability, wherein adjusting the refresh information changes at least one of the entropy and an other component used in computing the stale probability.

REJECTION ON APPEAL

The Examiner rejected claims 1–20 under 35 U.S.C. § 101 as being directed to patent ineligible subject matter. Final Act. 2–11.

ANALYSIS

We have reviewed the Examiner's rejection in light of Appellants' contentions that the Examiner erred. We disagree with Appellants' contentions for the reasons discussed below.

(1) Claim Grouping

Appellants substantively argue the pending claims as a group, with independent claim 1 being representative. *See* App. Br. 10. Thus, we decide the appeal of the § 101 rejection on the basis of representative claim 1, and refer to the rejected claims collectively herein as "the claims." *See* 37 C.F.R. § 41.37(c)(1)(iv); *In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986).

(2) § 101 Rejection

Appellants contend the Examiner improperly rejected the claims under 35 U.S.C. § 101. *See* App. Br. 10–13; Reply Br. 2–3. According to Appellants, the claims do not concern an abstract idea, and even if they did, the claims would be patent eligible because the claims amount to significantly more than an abstract idea. *See id.* We find Appellants' arguments unpersuasive.

Section 101 of the Patent Act provides that "[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." 35 U.S.C. § 101. The Supreme Court has explained that this

provision is subject to a long-standing, implicit exception: "[l]aws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014). The Court has set forth a two-part inquiry to determine whether this exception applies. First, we must determine if the claim at issue is directed to one of those patent-ineligible concepts. *Alice*, 134 S. Ct. at 2355. Second, if the claim is directed to one of those patent-ineligible concepts, we must consider the elements of the 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 (quotation marks omitted) (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72 (2012)).

(i) Abstract ideas

We first consider whether the Examiner properly concluded the claims are directed to one or more abstract ideas. The Examiner concluded that the claims are directed to a mental process (i.e., identifying, determining and calculating), which amounts to "[o]rganizing information through mathematical correlations" or "[m]athematical [r]elationships/[f]ormulas." *See* Final Act. 4, 11 (citing *Digitech Image Tech., LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014)); *see also* Ans. 5.

Appellants argue the claims are not directed to an abstract idea. App. Br. 10–11. Appellants argue that "claim 1 is directed to an inventive operation in a CDN, which satisfies an 'article of manufacture' or 'machine' requirement for patentability." App. Br. 10 (citing Spec. ¶ 4). For example, Appellants argue that "[c]laim 1 specifically recites a machine limitation, i.e., 'a processor and a memory,' that performs the steps of claim 1." *Id.* In

addition, Appellants argue that the steps of identifying, determining, and calculating are not part of a mental process because they "cannot be performed manually by a human, especially in the specific manner in which the steps are tied to a CDN." App. Br. 11 (citing *In Ex parte Balestrieri,* Appeal No. 2013-007305 (PTAB Oct. 23, 2015) (non-precedential)).

Appellants have not persuaded us that the Examiner errs. The Federal Circuit has explained that the abstract-idea inquiry requires "looking at the 'focus' of the claims, their 'character as a whole,'" to determine if the claims are directed to an abstract idea. *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). We agree with the Examiner that the claims are directed to the abstract ideas of identifying, determining, and calculating, which are akin to the claims directed to image data processing discussed in *Digitech*, 758 F.3d at 1351 (finding "a process that employs mathematical algorithms to manipulate [data or information] to generate additional information is not patent eligible"). The instant claims also are akin to the claims in *Electric Power*, which "though lengthy d[id] not go beyond requiring the collection, analysis, and display of available information in a particular field, stating those functions in general terms, without limiting them to technical means for performing the functions that are arguably an advance over conventional computer and network technology." 830 F.3d at 1351.

We find that *Digitech* and *Electric Power* are sufficiently analogous to establish that the instant claims are directed to an abstract idea. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (explaining that when determining whether claims are directed to an abstract idea, "both this court and the Supreme Court have found it sufficient to compare [the]

claims at issue to those claims already found to be directed to an abstract idea in previous cases").

Moreover, contrary to Appellants'' arguments, implementing an abstract idea using a "physical machine" does not impart patent eligibility. *See Mayo*, 566 U.S. at 84. Simply put, "not every claim that recites concrete, tangible components escapes the reach of the abstract-idea inquiry." *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016). In *Alice*, for example, "[a]ll of the claims [we]re implemented using a computer." 134 S. Ct. at 2353, 2360. In addition, the inability of a human to accomplish each step "does not alone confer patentability." *See FairWarning, IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1098 (Fed. Cir. 2016).

(ii) Inventive concept

We next consider whether the Examiner correctly concluded the claims do not include 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." *Alice*, 134 S. Ct. at 2355 (quotation marks omitted) (quoting *Mayo, Inc.*, 566 U.S. at 72–73). The Examiner finds that the claims provide "no indication that the limitations improve the functioning of a computer or improve any other technology." Ans. 14. Rather, the Examiner finds that the claims recite using a computer having generic components (e.g., "a processor and a memory"), "to perform all of the claim steps[, which] does not impose any meaningful limit on the computer implementation of the abstract idea." *See* Final Act. 4. Accordingly, the Examiner concludes that

the claims do not amount to significantly more than the abstract ideas. Ans. 14; Final Act. 4.

Appellants contend that the claims add significantly more to the abstract ideas. App. Br. 10–13; Reply Br. 2–3. To wit, Appellants argue that claim 1 "specifically recites operations performed using a computer or parts thereof, which improve the efficacy of the computer and implement the claimed functions that perform a specific method to solve a problem unique to the CDN." App. Br. 10; *see also id.* (citing Spec. ¶ 17) (arguing that *DDR*[3] applies). More specifically, Appellants argue that a problem — the delivery of stale content to users — exists in the technological field of CDNs, and that the claims provide a solution by which the delivery of stale content can be mitigated (i.e., "adjusting a refresh information responsive to the stale probability exceeding a threshold probability"). Reply Br. 3.

We agree with the Examiner that the claims do not amount to significantly more than the abstract ideas. Rather, the claims simply recite generic computer systems (e.g., data processing systems and data networks), generic components (e.g., a processor, a memory, and a cache), and generic functions (e.g., identifying, determining and calculating, and adjusting data). *See buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (finding the invocation of computers and generic functionality adds no inventive concept). Moreover, nothing in the claims, understood in light of the Specification (*see, e.g.*, Spec. ¶¶ 43–50), requires anything other than off-the-shelf, conventional computers and devices used for collecting, calculating, comparing, and adjusting various data.

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[3] *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014).

In addition, we are not persuaded by Appellants' reliance on *DDR*. In *DDR*, the claims "specif[ied] how interactions with the Internet [we]re manipulated to yield a desired result—a result that *overrides the routine and conventional sequence of events* ordinarily triggered by the click of a hyperlink." *See DDR*, 773 F.3d at 1257–58 (emphasis added). Appellants' claims are more akin to a generic computer programmed with conventional steps (e.g., computing, computing, and adjusting), and, thus, fail to provide an inventive concept. *See Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1332 (Fed. Cir. 2015) (quoting *Alice*, 134 S. Ct. at 2358) (finding an inventive concept "requires more than simply stating an abstract idea while adding the words 'apply it' or 'apply it with a computer'"). Adjusting data (i.e., a refresh) based on calculations does not override the normal operations of a CDN, but instead simply adjusts the refresh frequency.

For the above reasons, we sustain the Examiner's rejection of representative claim 1, as well as claims 2–20, grouped therewith.

DECISION

We affirm the Examiner's § 101 rejection of claims 1–20.

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