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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte VENKAT RAJEEV INDUKURU
and ALEXANDER ERIK MERICAS

Appeal 2017-006772
Application 12/858,497
Technology Center 2800

Before LINDA M. GAUDETTE, N. WHITNEY WILSON, and DEBRA L. DENNETT, *Administrative Patent Judges*.

DENNETT, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

STATEMENT OF THE CASE

Appellants[2] appeal under 35 U.S.C. § 134(a) from a non-final rejection of claims 1–7 and 10–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] In our Opinion, we refer to the Specification filed August 18, 2010 ("Spec."); the Non-Final Office Action mailed February 18, 2016 ("Non-Final Act."); the Appeal Brief filed July 13, 2016 ("App. Br."); the Examiner's Answer mailed January 26, 2017 ("Ans."); and the Reply Brief filed March 22, 2017 ("Reply Br.").

[2] Appellants identify International Business Machines Corporation as the real party in interest. App. Br. 4.

The invention is related to performance measurements in processing systems, in particular, a processor core having a saturating event counter. Spec ¶ 1. Performance monitoring can be implemented using counters that count occurrences of performance-related events indicative of low performance, high performance, or both. *See id.* ¶¶ 2–3. According to the Specification, a counter-based event monitoring approach typically requires frequency monitoring of the performance counter count values so that overflow of the counters and consequent wrap-around due to an occurrence of a large number of performance events is not missed. *Id.* ¶ 3. The invention uses saturating counters to provide an indication of the relative frequency of occurrence of performance-related events. *Id.* ¶ 5.

Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A method of monitoring performance of a computer system, the method comprising:
>
> within a processor core of the computer system, detecting events indicative of the performance of the computer system;
>
> within the processor core, responsive to detecting individual ones of the events, incrementing a saturating counter circuit integrated within the processor core;
>
> at first predetermined periods, updating a periodic counter that times a second predetermined period, wherein the second predetermined period has a duration greater than the first predetermined period;
>
> determining whether or not the periodic counter has reached a count indicating the second predetermined period has elapsed;
>
> responsive to determining that no event has been detected and that the periodic counter has reached the count indicating

the second predetermined period has elapsed, decrementing the saturating counter;

reading the saturating counter to obtain the count value; and

computing a performance level of the processor from the count value.

App. Br. 19 (Claims App.).

REFERENCES

The Examiner relies on the following prior art in rejecting the claims on appeal:

Floyd et al. ("Floyd")	US 7,340,378 B1	Mar. 4, 2008
Cota-Robles et al. ("Cota-Robles")	US 2008/0163254 A1	July 3, 2008

REJECTIONS

The Examiner maintains the following rejections: (1) claims 1–7 and 10–20 under 35 U.S.C. § 101 as directed to non-statutory subject matter; and (2) claims 1–7 and 10–20 under 35 U.S.C. § 103(a) over Cota-Robles in view of Floyd. Non-Final Act. 5, 9.

OPINION

Rejection of claims under § 101

A patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. The Supreme Court has "long held that this provision contains an important implicit exception: Laws 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) (internal quotations and citation omitted). The Supreme Court reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.,* 566 U.S. 66 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355. The first step "determine[s] whether the claims at issue are directed to one of those patent-ineligible concepts"—such as an abstract idea. *Id.* We determine whether the claims focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016).

The inquiry ends if the claims are not directed to an abstract idea. If the inquiry proceeds to the second step, the elements of the claims are considered "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.

The first-stage inquiry looks at the "'focus' of the claims, their 'character as a whole,'" and, if the second stage is reached, the second stage inquiry looks at what the claim elements add—whether they identify an "inventive concept" in the application of the ineligible matter to which the claim is directed. *Elec. Power Grp, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). Therefore, we look to: (1) whether the claims focus on a specific means or method that improves the relevant technology, or (2) are directed to a result or effect that itself is the abstract idea, in which the

claims merely invoke generic processes and machinery. *See Enfish*, 822 F.3d at 1336.

Under the first step of the *Alice/Mayo* framework, the Examiner finds that the claims amount to no more than mathematical concepts, which fall within the "abstract idea" judicial exception to patentable subject matter. Final Act. 6–7. The Examiner further finds that claim elements "a processor core of the computer system," "memory," "control logic," "functional elements," and "saturating counter" amount to no more than recitation of generic computer structure. *Id.* at 8. According to the Examiner, "the generic recitation [of] circuits, hardware or otherwise, do[es] not amount to significantly more than the abstract idea if it does not amount to more than a generic computer performing generic computer functions." *Id.* at 4. The Examiner finds that the recitations to, e.g., a computer system or processor, "merely amount to merely generally linking the use of the abstract idea to the particular technological environment of computer technology." *Id.* at 4–5.

Appellants argue that claims 10 and 17 are directed to a processing system and processor core having specific hardware features. App. Br. 8. Appellants argue that claim 1 is directed to specific operation of a control logic circuit and a saturating counter within a processor core. *Id.* at 9. Appellants contend, therefore, that the claims are not directed to an abstract idea, but instead are directed to improvements in computer technology. *Id.*

Nonetheless, according to Appellants, if the claims contain an abstract idea, they are patentable because they recite elements that are not mathematical algorithms or conventional business practices. *Id.* at 9. Appellants contend that the claims are directed to circuits and a method of

operation of those circuits. *Id.* at 10. Citing *Enfish*, Appellants argue that the claims fall within the domain of chip architecture and, therefore, are not directed to an abstract idea. *Id.* at 9.

We are unpersuaded by Appellants' arguments. Based on our comparison of the pending claims to similar claims previously before our reviewing court that were found to be directed to abstract ideas, we determine that the claims are directed to an abstract idea

Appellants argue the claims as a group. App. Br. 8–11. We find no meaningful distinction between the method and processing system/processor core claims for the purpose of our analysis under *Alice*.

Claim 1 is drawn to a method of monitoring performance of a computer system. App. Br. 19 (Claims App.). The claim recites the steps of "detecting events . . . ," "incrementing a saturating counter . . . ," "updating a periodic counter . . . ," "determining whether or not the periodic counter has reached a count . . . ," ". . . decrementing the saturating counter," "reading the saturating counter . . . ," and "computing a performance level . . . ." *Id.* The invention describes the concept of generating, gathering, and combining data with mathematical techniques. These steps are similar to those in *In re Grams*, 888 F.2d 835 (Fed. Cir. 1989), in which conditions were determined and parameters set. Like the claims in *Grams*, these steps are, in essence, a mathematical algorithm representing a procedure for solving a given type of mathematical problem. *See Gottschalk v. Benson*, 409 U.S. 63, 65 (1972).

The "realm of abstract ideas" includes "collecting information, including when limited to particular content." *Elec. Power Grp.*, 830 F3d at 1353. "[A]nalyzing information by steps people go through in their minds,

or by mathematical algorithms, without more, . . . [is] essentially mental processes within the abstract-idea category." *Id.* The claims in the instant case manipulate data, but not in a non-abstract way. *See Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1338 (Fed. Cir. 2017).

We turn to the second step under *Alice*, and consider the elements of the claim, both individually and as an ordered combination, to assess whether additional elements transform the nature of the claim into a patent-eligible application of the abstract idea. *Content Extraction & Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1347 (Fed. Cir. 2014). "Merely reciting the use of a generic computer or adding the words 'apply it with a computer' cannot convert a patent-ineligible abstract idea into a patent-eligible invention." *Two-Way Media*, 874 F.3d at 1338 (quoting *Alice*, 134 S. Ct. at 2358). Saving a patent application at step two requires that an inventive concept must be evident in the claims. *RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017).

Appellants contend that the claims are directed to a processing system and processor core, and circuits and methods of operating circuits. App. Br. 8, 10. Viewing the claims as a whole, as we must, we find these elements are no more than merely generic computer components performing generic computer functions. As such, they do not establish that the claims are directed to patentable subject matter. *Alice*, 134 S. Ct. 2359–60; *see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1364 (Fed. Cir. 2015) ("Just as *Diehr* could not save the claims in *Alice*, which were directed to 'implement[ing] the abstract idea of intermediated settlement on a generic computer', . . . it cannot save *OIP*'s claims directed to implementing the

abstract idea of price optimization on a generic computer") (internal citation omitted).

Appellants' contention that the claims are directed to improvements in computer technology is unpersuasive as well. The claims "comput[e] a performance level" (claim 1) or "provide[] an indication of [the] performance of the processor" (claims 10 and 17). *See* App. Br. 19, 21, 23 (Claims App.). These activities, however, do not improve the functioning of a computer itself. *See Enfish*, 822 F.3d at 1336. Appellants identify no technological improvement. It is well settled that arguments of counsel cannot take the place of factually supported objective evidence. *See, e.g., In re Huang*, 100 F.3d 135, 139–40 (Fed. Cir. 1996); *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984).

For the reasons above, we sustain the Examiner's rejection of claims 1–7 and 10–20 because the claimed subject matter is judicially excepted from patent eligibility under § 101.

Rejection of claims under § 103(a)

The Examiner rejects all pending claims as obvious over Cota-Robles in view of Floyd, specifically interpreting Cota-Robles' event counter **170** as the saturating counter of the claims. Non-Final Act. 9, 16, 23. Appellants' sole challenge to the rejection is that the cited prior art does not teach a saturating counter. App. Br. 12–13.

The Examiner finds that event counter **170** of Cota-Robles provides a relative measure of event frequency. Non-Final Act. 9. The Examiner finds that Appellants have not set forth any special definition of "saturating counter." Ans. 5. The Examiner further finds that the broadest reasonable

interpretation of "saturating counter" is "a counter that provides a relative measure of event frequency." *Id.* The Examiner finds that the features on which Appellants rely to distinguish the claimed saturating counter from Cota-Robles' event counter **170** are not recited in the rejected claims, and, thus, would improperly read limitations into the claims. *Id.* at 4–5.

While "saturating counter" is not explicitly defined in the Specification, Appellants point to instances in the Specification where properties of the saturating counter are identified. Reply Br. 10.

We determine the broadest reasonable interpretation of "saturating counter" consistent with the Specification. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). The words used in a claim must be read in light of the specification, as it would have been interpreted by one of ordinary skill in the art at the time of the invention. *Id.* The Specification clarifies that the saturating counter claimed saturates at a maximum value if it receives more performance event signals than may be recording the count value. Spec. ¶¶ 19, 22. On this basis, we find that Cota-Robles does not teach a saturating counter.

We reverse the Examiner's rejection of claims 1–7 and 10–20 as obvious over Cota-Robles in view of Floyd.

DECISION

The Examiner's decision to reject claims 1–7 and 10–20 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