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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte GREGORY J. BOSS, RICK A. HAMILTON II,
JULIANNE F. HAUGH, and ANNE R. SAND

Appeal 2018-005133
Application 14/032,246
Technology Center 3600

Before BIBHU R. MOHANTY, MICHAEL C. ASTORINO, and
PHILIP J. HOFFMANN, *Administrative Patent Judges*.

HOFFMANN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellants¹ appeal from the Examiner's rejection of claims 24–30. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ According to Appellants, the real party in interest is International Business Machines Corporation. Appeal Br. 1.

According to Appellants, “[t]he . . . invention relates to the field of AC power grid load management; more specifically, it relates to a method and device for frequency responsive load management using frequency regulation credits.” Spec. ¶ 2. Claim 24 is the sole independent claim on appeal. Below, we reproduce claim 24 as illustrative of the appealed claims.

24. A power and frequency regulation meter to which AC power is supplied from an AC power supplier through an AC power line, said power and frequency regulation meter comprising:

a case;

an AC frequency meter that receives AC power from the AC power line;

an AC power consumption meter that receives AC power from the AC power line;

an AC power consumption display that receives AC power from the AC power line and displays power consumption;

a frequency regulation credits display that displays a frequency regulation credit;

a processor to which the AC frequency meter, the AC power consumption meter, AC power consumption display, and frequency regulation credits display are coupled;

a memory device coupled to the processor; and

a communication device coupled to the processor,

wherein the case encases the AC frequency meter, the AC power consumption meter, the AC power consumption display, the frequency regulation credits display, the processor, the memory, and the communication device,

wherein the AC frequency meter measures a current AC frequency on the AC power line;

wherein the AC power consumption meter measures a current power consumption on the AC power line over a period of time equal to a first sampling interval;

wherein the processor is configured to calculate a power consumption moving average of a last N power current power consumptions measured by the AC power consumption meter such that N is a positive integer greater than 1;

wherein the processor is configured to generate credits or debits based on the current power consumption, the current AC frequency and the power consumption moving average;

wherein the processor is configured to add the credits or debits to a frequency regulation credit and store the credits, debits, or credits and debits on the memory device;

for each next sampling interval of multiple sampling intervals, the power and frequency regulation meter is configured to repeat measuring the current AC frequency, measuring the current power consumption, calculating the power consumption moving average, generating the credit or debit, adding the credits or debits to the frequency regulation credit, and storing the frequency regulation credit or debit on the memory device;

wherein a credit is generated when the current power consumption when compared to the power consumption moving average is driving the current AC frequency of the AC power line toward a nominal AC frequency of the AC power line;

wherein a debit is generated when the current power consumption when compared to the power consumption moving average is driving the current AC frequency of the AC power line away from the nominal AC frequency of the AC power line;

wherein the generation of the credit or debit includes:

generation of a debit in response to a first condition in which the current AC frequency is greater than or equal to an upper threshold frequency and the current power consumption is less than the power consumption moving average, wherein the first condition drives the current AC frequency of the AC power line away from the nominal AC frequency of the AC power line;

generation of a credit in response to a second condition in which the current AC frequency is greater than or equal to the upper threshold frequency and the

current power consumption is greater than the power consumption moving average, wherein the second condition drives the current AC frequency of the AC power line toward the nominal AC frequency of the AC power line;

generation of a debit in response to a third condition in which the current AC frequency is less than or equal to a lower threshold frequency and the current power consumption is greater than the power consumption moving average, wherein the third condition drives the current AC frequency of the AC power line away from the nominal AC frequency of the AC power line;

generation of a credit in response to a fourth condition in which the current AC frequency is less than or equal to the lower threshold frequency and the current power consumption is less than the power consumption moving average, wherein the fourth condition drives the current AC frequency of the AC power line toward the nominal AC frequency of the AC power line;

wherein a credit or a debit is not generated when the current AC frequency is between the upper threshold frequency and the lower threshold frequency;

wherein the power consumption is dynamically and simultaneously displayed via the AC power consumption display and the frequency regulation credit is dynamically and simultaneously displayed via the frequency regulation credits display;

wherein the displayed frequency regulation credit is a cumulative net credit or debit;

wherein the first sampling interval and the multiple sampling intervals collectively includes a time T1 at which the fourth condition prevails with a first credit being generated, a time T2 at which the third condition prevails with a first debit being generated, a time T3 at which the second condition prevails with a second credit being generated, and a time T4 at which the first condition prevails with a second debit being generated, subject to $T1 < T2 < T3 < T4$;

wherein after the time T2 at which the first debit is generated and before the time T3, the current AC frequency of the AC power line engages in a first movement toward the nominal AC frequency of the AC power line;

wherein after the time T4 at which the second debit is generated, the current AC frequency of the AC power line engages in a second movement toward said nominal AC frequency of the AC power line;

wherein the first movement and the second movement of the current AC frequency of the AC power toward the nominal AC frequency of the AC power line increases an efficiency of running the AC power grid comprising the AC power line; and

wherein the communication device is configured to transmit a frequency regulation credit from the power and frequency regulation meter to the AC power supplier.

REJECTION

The Examiner rejects claims 24–30 under 35 U.S.C. § 101 as patent-ineligible subject matter.

ANALYSIS

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. The Supreme Court, however, has long interpreted § 101 to include an implicit exception: “[l]aws of nature, natural phenomena, and abstract ideas” are not eligible for patenting. *See, e.g., Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014).

The Supreme Court, in *Alice*, reiterated the two-step analysis 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 Corp.*, 134 S. Ct. at 2355. The first step in that analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* If the claims are not directed to a patent-ineligible concept, e.g., an abstract idea, the inquiry ends. Otherwise, the inquiry proceeds to the second step, where the elements of the claims are considered “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*, 566 U.S. at 78, 79).

In this case, even assuming arguendo that independent claim 24, for example, is directed to an abstract idea, the rejection of record fails to show that the additional elements do not transform the claim into a patent-eligible application. Thus, we do not sustain the § 101 rejection of claims 24–30.

The Supreme Court explains that the second step of the *Alice/Mayo* analysis “requires more than recognizing that each claim element, by itself, was known in the art,” because an “inventive concept” that satisfies the second step “can be found in the non-conventional and non-generic arrangement of known, conventional pieces.” *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016). The Examiner does not support adequately the finding that “[c]ontrary to *BASCOM*, claim 24 does not include any recitation directed to the non-conventional and non-generic arrangement of the [claimed] elements.” Answer 11; *see also id.* at 11–13; *see also* Reply Br. 4.

Notwithstanding the above, the Examiner also does not support adequately that the claimed meters, displays, processors, memory, and

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communication device are well-understood, routine, or conventional, such that their inclusion in the claim fails to transform the nature of the claim into a patent-eligible application. *See, e.g.*, Answer 11–13; *see Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018), *pet. reh'g en banc den'd*, 890 F.3d 1369 (Fed. Cir. 2018) (whether an element is well-understood, routine, or conventional is an issue of fact, which must be supported by the preponderance of the evidence).

Thus, based on the going, we do not sustain the Examiner's rejection of independent claim 24, or its dependent claims 25–30, under § 101.

DECISION

We REVERSE the Examiner's rejection of claims 24–30.

REVERSED