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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DANIEL JENSEN and URBAN ARVIDSSOM

Appeal 2017-000732
Application 12/757,106
Technology Center 3600

Before ALLEN R. MacDONALD, ROBERT E. NAPPI and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

MacDONALD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 1–16 and 19–22. Claims 17 and 18 have been cancelled. Final Act. 2. We have jurisdiction under 35 U.S.C. § 6(b).

Representative Claim¹

Representative claim 1 under appeal reads as follows (emphases and bracketed material added):

1. A computerized method for transmitting broadcast data in a computerized distributed trading system, the method comprising:

[A.] receiving, by a passive matching engine of a first computerized exchange system, an order entry message from a first trader terminal of a first group of computerized trading terminals connected to the passive matching engine of the first computerized exchange system;

[B.] *creating*, by the passive machine engine, ***a modified order entry message by adding status data***, including at least a sequence number related to an order, and relating to an operating state of the passive matching engine to the received order entry message;

[C.] forwarding the modified order entry message, including the sequence number, to ***an active matching engine*** of a second computerized exchange system for matching;

[D.] *creating*, by the passive matching engine, ***broadcast data*** by processing the received order entry message;

[E.] *generating*, by ***the active matching engine***, ***confirmation data*** by comparing an operation state of ***the active matching engine*** to the operating state of the passive

¹ Although step B of claim 1 recites “the passive machine engine” (added by amendment on July 27, 2012), for purposes of this appeal we read this as—the passive matching engine—. Appropriate correction is required.

matching engine based on at least the sequence number included in the modified order entry message;

[F.] transmitting the confirmation data from **the active matching engine** to the passive matching engine upon receiving the modified order entry message comprising the status data;

[G.] receiving, by the passive matching engine, the confirmation data from **the active matching engine**; and

[H.] transmitting, by the passive matching engine, the broadcast data to the first group of computerized trading terminals when the received confirmation data comprises an acknowledgement of the status data.

Rejections on Appeal

The Examiner rejected claims 1–16 and 19–22 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Alderucci et al. (US 2010/0191638 A1; July 29, 2010) and Shimazaki et al. (US 5,596,706; Jan. 21, 1997).²

The Examiner rejected claims 1–16 and 19–22 under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. That is, the claims are directed to patent ineligible subject matter because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more.³

² We select claim 1 as representative for claims 1–15 and 20–22. Appellants argue separate patentability for claims 16 and 19. However, our claim 1 decision is determinative as to these §103 rejections of claims 16 and 19. Except for our ultimate decision, claims 2–16 and 19–22 are not discussed further herein.

³ Separate patentability is not argued for claims 2–16 and 19–22. Therefore, our claim 1 decision is determinative as to this §101 rejection of these

Issues on Appeal

Did the Examiner err in rejecting claim 1 as being obvious?

Did the Examiner err in rejecting claim 1 as being directed to patent-ineligible subject matter?

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' arguments that the Examiner has erred.

A. Section 103

Appellants contend⁴ that the Examiner erred in rejecting claim 1 under 35 U.S.C. § 103(a) because:

Independent claim 1 . . . recites “creating, by the passive machine engine, a modified order entry message by adding status data, including at least a sequence number related to an order []” and “generating, by the active matching engine, confirmation data by comparing an operation state of the active matching engine to the operating state of the passive matching engine based on at least the sequence number included in the modified order entry message.” This, Shimazaki and Alderucci taken alone, or in combination, fail to disclose or suggest.

App. Br. 21 (emphasis omitted).

Essentially, Appellants argue there is insufficient articulated reasoning to support the Examiner's final conclusion that claim 1 would have been

claims. Except for our ultimate decision, these claims are not discussed further herein.

⁴ This contention is determinative as to the rejections on appeal. Therefore, Appellants' other contentions are not discussed herein.

obvious to one of ordinary skill in the art at the time of Appellants' invention given the teachings of Alderucci and Shimazaki. We agree.

As articulated by the Federal Circuit, the Examiner's burden of proving non-patentability is by a preponderance of the evidence. *See In re Caveney*, 761 F.2d 671, 674 (Fed. Cir. 1985) ("preponderance of the evidence is the standard that must be met by the PTO in making rejections"). "A rejection based on section 103 clearly must rest on a factual basis[.]" *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967). "The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not . . . resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis." *Id.*

Here, the Examiner's analysis fails to meet this standard because it does not adequately explain why (even if we accept the Examiner's findings) an artisan would significantly modify the teachings of Alderucci and Shimazaki to arrive at the claimed invention. Rather, the Examiner repeatedly points to the same paragraphs (e.g., Final Act. 6, Ans. 7) of the references with minimal (or no) explanation as to how the teachings are to be modified or why they would be modified. Further, as to the motivation asserted by the Examiner (*Id.*), we find it unsupported by sufficient reasoning to justify its conclusion.

B. *Section 101*

Eligibility under 35 U.S.C. § 101 is determined using the *Alice/Mayo* framework. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014). The first step involves determining whether the claims at issue are directed to a patent-ineligible concept. *Id.* at 2355. The second step involves determining

whether the elements of the claim contain an inventive concept sufficient to transform a claimed abstract idea into a patent-eligible application. *Id.* at 2357. The “inventive concept” may arise in one or more of the individual claim limitations or in the ordered combination of the limitations. *Id.* at 2355.

In *Bascom*, the Federal Circuit deferred consideration of the specific claim limitations’ narrowing effect for *Alice* step two. *Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349 (Fed. Cir. 2016). The Federal Circuit held that determining whether the claimed inventive concept is a technical improvement can aid in evaluating the second step in the *Alice/Mayo* framework:

The district court thus concluded [wrongly] that BASCOM had not asserted adequately that the claims disclose an inventive concept because the limitations, “considered individually, or as an ordered combination, are no more than routine additional steps involving generic computer components and the Internet, which interact in well-known ways to accomplish the abstract idea of filtering Internet content.” [*District Court Order*, 107 F. Supp.3d at 655.]

We agree with the district court that the limitations of the claims, taken individually, recite generic computer, network and Internet components, none of which is inventive by itself. BASCOM does not assert that it invented local computers, ISP servers, networks, network accounts, or filtering. Nor does the specification describe those elements as inventive.

However, we disagree with the district court’s analysis of the ordered combination of limitations. . . . As is the case here, an inventive concept can be found in the nonconventional and non-generic arrangement of known, conventional pieces. . . . [T]he patent ***describes how its particular arrangement of elements is a technical improvement*** over prior art ways of filtering such content.

Bascom, 827 F.3d at 1349–50, bracket and emphasis added.

Alice/Mayo - Step 2

Appellants contend claim 1 *recites significantly more* because:

As noted in the USPTO Guidance, features that may qualify as “something more” involve “improvements to [technology] or [a technical field]” or “improvements to the functioning of the computer itself.”

Here, the subject matter of Appellant’s claims provides a technical solution to a technical problem. In particular, the claims are directed to solving problems related to latency and bandwidth between distributed exchange systems. The claimed approach improves upon conventional techniques by, at least, using a passive matching engine to create broadcast data while waiting for the active matching engine to send back an acknowledgment that the passive matching engine can distribute broadcast messages. In sending the acknowledgment, the active matching engine will compare status data provided from the passive matching engine to the status of the active matching engine to determine whether to send a positive acknowledgement (or alternatively send status data related to the status of the active matching engine). The claimed approach thus reduces latency and improves bandwidth between the two systems as the passive matching engine can begin safely processing orders while waiting for the acknowledgement from the active matching engine (and rolling back orders where the status is in question). One of ordinary skill would understand that improvements to latency and bandwidth are clearly technical issues. Thus, the claimed features are directed to technical solutions to technical problems presented, at least, in the area of distributed computerized exchange systems. As such, the claimed features provide “significantly more” as required for eligibility. For at least these reasons, the claims are directed to patent eligible subject matter.

App. Br. 15–16.

The Examiner responses:

The Examiner, as one skilled in the art, do[es] not see how such one computer system processing data while waiting for a second

system acknowledge would provide the particular improvement of (1) reducing latency and (2) improving bandwidth. The alleged “technical solution” is done by modifying a message with a sequence number and comparing the sequence number at a second system to generate confirmation data. Not only it is unclear how adding more data to an original message can improve latency, but it is also counter-intuitive that adding more data would improve bandwidth.

Ans. 4.

We agree with Appellants’ argument. Appellants’ Specification is specific that the problem being solved is one of (1) reducing latency and (2) improving bandwidth.

A general problem with distributed exchange systems is latency and bandwidth. Minimizing latency and bandwidth has become more and more important aspects of computerized exchange systems, especially with the introduction of algorithmic traders. A primary root cause to latency is the distance between the actual central matching engine and the connecting parties.

Spec. 2.

The Examiner concludes one skilled in the art would “not see how [] one computer system processing data while waiting for a second system acknowledge would provide the particular improvement of (1) reducing latency and (2) improving bandwidth.” However, we conclude that one skilled in the art would readily see that distributing the required data processing between a first matching engine and a second matching engine achieves this improvement. We further conclude, an artisan would recognize that such distributed processing reduces the communication required between the two matching engine as compared to a system that transfers all data processing from the first matching engine to the second matching engine, performs all data processing at the second matching

engine, and then transfers all data processing results back to first matching engine.

We do not reach whether the claims are directed to patent-ineligible concepts because, even if the claims are so directed, they would nonetheless survive Alice’s “step two” because the Examiner has not shown that the claims do not contain an inventive concept. Essentially, Appellants’ argue the particular distributed arrangement of the data processing system is non-conventional. We do not find anywhere the record contradicts Appellants’ argument. This requires the Examiner to show that the arrangement does not actually constitute a non-conventional arrangement, thus showing it does not present a sufficiently inventive concept to transform the claims into patent-eligible subject matter. *See BASCOM Glob. Internet Servs.*, 827 F.3d at 1350 (“[A]n inventive concept can be found in the nonconventional and non-generic arrangement of known, conventional pieces.”). We do not find such an Examiner showing.

CONCLUSIONS

(1) Appellants have established that the Examiner erred in rejecting claims 1–16 and 19–22 as being unpatentable under 35 U.S.C. § 103(a).

(2) Appellants have established that the Examiner erred in rejecting claims 1–16 and 19–22 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter.

(3) On this record, claims 1–16 and 19–22 have not been shown to be unpatentable.

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DECISION

The Examiner's rejections of claims 1–16 and 19–22 are reversed.

REVERSED