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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RICHARD CO, BRETT VIETMEIER, and
JOHN LABUSZEWSKI

Appeal 2018-007489
Application 12/827,426
Technology Center 3600

Before KRISTEN L. DROESCH, JENNIFER L. McKEOWN, and
SCOTT B. HOWARD, *Administrative Patent Judges*.

DROESCH, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant¹ seeks review under 35 U.S.C. § 134(a) from the Examiner’s Final Rejection of claims 39–45, all of the pending claims.² We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant indicates the real party-in-interest is Chicago Mercantile Exchange, Inc. App. Br. 1.

² Claims 1–38 have been cancelled.

BACKGROUND

The disclosed invention relates to a system and method for implementing and managing trading of basis futures contracts that are reflective of a perceived fair value. Spec. ¶ 2, Abstract.

CLAIMED SUBJECT MATTER

Independent claim 39, which is representative of the subject matter of the appeal and is reproduced from the Claims Appendix of the Appeal Brief, reads as follows:

39. A system comprising:
- an all trades database that contains records of trades for basis futures contracts that are each based on a spot index contract and a futures index contract;
 - a computer device that executes a clearing application configured to receive and trade records from the all trades database,
 - a first match server at a first geographic location that includes:
 - a match module configured to match orders;
 - a cache configured to store previous trades of basis future contracts;
 - an aging queue configured to store unmatched orders for a predetermined time period;
 - a second match server at a second geographic location geographically distributed from the first geographic location that includes:
 - a match module configured to match orders;
 - a cache configured to store previous trades of basis future contracts;
 - an aging queue configured to store unmatched orders for a predetermined time period;
 - a hub connected to the first and second match servers and that allows communication between the first and second match servers; and

a computer device that executes a match client that facilitate communications between the clearing application and the first and second match servers.

REJECTIONS ON APPEAL AND APPLIED PRIOR ART

Claims 39–45 stand rejected under 35 U.S.C. § 101 as directed to patent ineligible subject matter.

Claims 39–45 stand rejected under 35 U.S.C. § 103 as unpatentable over Seidel et al. (US 2009/0254471 A1, pub. Oct. 8, 2009, “Seidel”), Labuszewski & Lucy Wang (UNDERSTANDING EOM FAIR VALUE SETTLEMENTS, CME Group, March 11, 2009, “Labuszewski”), and Van Roon (US 7,194,481 B1, March 20, 2007).

ANALYSIS

We have reviewed Appellant’s arguments in the Briefs, the Examiner’s rejection, and the Examiner’s response to Appellant’s arguments. Appellant’s arguments have persuaded us of error in the Examiner’s rejection of claims 39–45 under 35 U.S.C. § 101. Appellant’s arguments, however, have not persuaded us of error in the Examiner’s rejection of claims 39–45 under 35 U.S.C. § 103.

REJECTION UNDER 35 U.S.C. § 101

Standard for Patent Eligibility under § 101

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[I]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g.*, *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court’s two-step framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is “directed to.” *See id.* at 219 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk.”).

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67–68 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. (15 How.) 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that “a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula.” *Diehr*, 450 U.S. at 187; *see also id.* at 191 (“We view respondents’ claims as nothing more than a process for molding rubber

products and not as an attempt to patent a mathematical formula.”). Having said that, the Supreme Court also indicated that a claim “seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment.” *Id.* (citing *Benson and Flook*); *see, e.g., id.* at 187 (“It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”).

If the claim is “directed to” an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where “we must examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent eligible application.” *Alice*, 573 U.S. at 221 (citation omitted). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.*

The PTO recently published revised guidance on the application of § 101. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (USPTO Jan. 7, 2019) (“Guidance”). Under that guidance, we first look to whether the claim recites:

- (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing

human activities such as a fundamental economic practice, or mental processes); and

- (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

- (3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)); or

- (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

See Guidance, 84 Fed. Reg. at 56.

Examiner’s Findings and Conclusion

In the first step of the *Alice* inquiry, the Examiner determines independent claim 39 is directed to “the abstract idea of matching orders.” Final Act. 2. The Examiner further determines the claims are directed to “an abstract idea because it is a concept relating to the economy and commerce such as agreements between people in the form of contracts, legal obligations, and business relations.” *Id.* The Examiner points out that the courts have found such agreements between people to be examples of abstract ideas “because they are a fundamental economic practice (e.g. matching orders in the trading of securities is a longstanding commercial practice).” *Id.* According to the Examiner, the claims are similar to the claims at issue in *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350 (Fed. Cir.

2014) (creating a contractual relationship), *Bilski v. Kappos*, 561 U.S. 593 (2010) (hedging), and *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014) (managing settlement risk). *See id.* at 2–3. The Examiner further finds that the claims are directed to an abstract idea because they “recite a concept relating to interpersonal activities, such as managing transactions between people. . . . methods of organizing human activities.” *Id.* at 3.

In the second step of the *Alice* inquiry, the Examiner finds that two servers located geographically apart performing similar functions are routine and conventional in both the computer and trading industries. *See Final Act.* 4–5. The Examiner further finds:

It is well-understood that any set of servers located apart from each other would allow a plurality of transactions to be “be handled” more efficiently (e.g. faster) by the different servers, if for no other reason than two computers of the same type can perform more work than just one. Whether the servers are in the same rack or on different continents does not change this. Neither does the fact that the information being handled by the servers comprises “. . . basis futures related to individual stock indexes . . .” alter this point.

Ans. 4.

The Examiner further determines that “[v]iewed as a whole, these additional claim elements . . . do not provide meaningful limitations to transform the abstract idea into a patent eligible application of the abstract idea such that the claims amount to significantly more than the abstract idea itself.” *Final Act.* 4. The Examiner asserts that unlike *BASCOM Glob. Internet Servs. Inc. v. AT&T Mobility, LLC*, 827 F.3d 1341 (Fed. Cir. 2016), there is no inventive step involved which overcomes an unsolved problem. *See id.* at 5. The Examiner also points out that the Specification at paragraph 40 teaches that the match servers may be in the same location or

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geographically distributed with no apparent advantage to either configuration other than the well-understood advantage of distributed computing which is employed so that the workload is distributed across servers. *See id.* (quoting Spec. ¶ 44; citing Spec. ¶ 40).

Appellant's Arguments

Referencing the holding of *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018), Appellant argues that the Examiner does not provide sufficient evidence to support the Examiner's assertion that "the current invention appears to be nothing more than conventional architecture of conventional components arranged to trade a particular type of security." *See Reply Br. 4* (quoting Ans. 5). According to Appellant, "the initial burden is on the Office to showcase evidence to prove that the claimed features are 'well-known, routine, and conventional' with clear and convincing evidence." *Id.* (citing *Berkheimer, Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121 (Fed. Cir. 2018), *Berkheimer v. HP Inc.*, 890 F.3d 1369 (Fed. Cir. 2018) (rehearing en banc denied)).

Our Review

The principal issue raised by Appellant's arguments is: whether the Examiner has sufficiently supported the determination that "a first match server at a first geographic location . . ." and "a second match server at a second geographic location geographically distributed from the first geographic location . . .," recited in claim 39 is "well-understood, routine, conventional" in the field.

After the Final Office Action was mailed and the Appeal Brief was filed, the Federal Circuit, addressing step two of the *Mayo/Alice* framework in *Berkheimer*, held that the question of whether a claim element or

combination of elements is well-understood, routine, and conventional to a skilled artisan in the relevant field is a question of fact. *Berkheimer*, 881 F.3d at 1368. Shortly after the Federal Circuit issued its decision in *Berkheimer*, and before the Examiner's Answer was mailed, the USPTO issued an April 19, 2018 Memorandum to the Patent Examining Corps entitled, "Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*)" ("*Berkheimer* Memorandum"), in which the Office revised the procedures set forth in the Manual of Patent Examining Procedure ("MPEP") § 2106.07(a) (Formulating a Rejection For Lack of Subject Matter Eligibility) and MPEP § 2106.07(b) (Evaluating Applicant's Response). *Berkheimer* Memorandum 3–4. According to the *Berkheimer* Memorandum, examiners must provide specific types of evidence to support a finding that an additional element of a claim is well-understood, routine, and conventional. *Id.* To this end, examiners must provide one or more of the following: (1) a citation to the specification or statement made by applicant during prosecution that demonstrates the well-understood, routine, conventional nature of the additional element; (2) a citation to court decisions discussed in MPEP § 2106.05(d)(II) as noting the well-understood, routine, conventional nature of the additional element; (3) a citation to a publication that demonstrates the well-understood, routine, conventional nature of the additional element; and (4) a statement that an examiner is taking official notice of the well-understood, routine, conventional nature of the additional element. *Id.*

Appellant's argument that the Examiner's Answer fails to provide any factual support for its position that a first match server at a first location and

a second match server at a second location geographically distributed from the first location is well-understood, routine, and conventional (Reply Br. 4), has persuaded us of error in the Examiner's rejection. In the case before us, even if the Examiner's determination that claim 39 is directed to an abstract idea of matching orders akin to a fundamental economic practice, we agree that the Examiner erred by failing to offer evidence, as set forth in the *Berkheimer* Memorandum, to support the assertions that "a first match server at a first location" and "a second match server at a second location geographically distributed from the first location" is well-understood, routine, and conventional in the field (e.g., computer trading industries). *See* Ans. 4; Final Act. 4–5. Moreover, contrary to the Examiner's finding that the Specification discloses the match servers may be in the same location or geographically distributed (*see* Final Act. 5), "[a] finding that an element is well-understood, routine, or conventional cannot be based only on the fact that the specification is silent with respect to describing such element." *Berkheimer* Memorandum 3–4.

Accordingly, based on the record before us, we are constrained to reverse the Examiner's rejection of claim 39, and claims 40–45 dependent therefrom, under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter.

Request for Additional Briefing

Appellants requests, for the first time in the Reply Brief, that we enter an order under 37 C.F.R. § 41.50(d) to permit additional briefing closer to the time when we consider the substance of the appeal, but before our decision. Reply Br. 1. Appellant's request for additional briefing appears to

be moot in view of the reversal of the Examiner's rejection of claims 39–45 under 35 U.S.C. § 101.

REJECTION UNDER 35 U.S.C. § 103

The Examiner finds that the combination Seidel, Labuszewski, and Van Roon teach each of the limitations of claim 39. *See* Final Act. 5–10. In particular, addressing the first and second match servers, the Examiner finds that Seidel teaches a trading and matching system that may comprise one or more servers. *See id.* at 8 (citing Seidel ¶ 17); *id.* at 9 (citing Seidel ¶ 17, Fig. 1:105). The Examiner also finds that Van Roon teaches a trading and matching system connected to multi-jurisdictional partners that may run their own web site allowing use by trading customers to access the invention. *See id.* at 8 (citing Van Roon ¶¶ 37, 49, 52, Figs. 3A–3B). The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to include one of the multiple servers disclosed by Seidel at any of the jurisdiction partners running their own web site to facilitate matching and clearing of customer orders and trades across borders. *See id.* at 9 (citing Van Roon ¶¶ 49–50).

Appellant contends that a person of ordinary skill in the art would not have modified Seidel and Labuszewski in view of Van Roon to obtain the claimed “first match server at a first geographic location” and “second match server at a second geographic location geographically distributed from the first geographic location,” because Van Roon shows a single “match server cluster” in Figure 3A and does not indicate that the match server cluster of Fig. 3A or the matching system server 9 of Fig. 3B includes a first match at a first location and a second match server at a second location geographically distributed from the first location. *See id.* at 8–9

(reproducing Van Roon Figs. 3A, 3B). Appellant further argues the web sites and web site servers of Van Roon, on which the Final Office Action relies, are different from the match server cluster of Figure 3A and the matching system server of Figure 3B. App. Br. 9. According to Appellant, “[a] person of ordinary skill in the art would not have placed servers from Seidel at Van Roon’s ‘jurisdiction partners.’” *Id.* at 9–10. Appellant asserts that there is no apparent advantage or other motivation to modify Van Roon by substituting Seidel’s servers for Van Roon’s match server cluster of Figure 3A and matching system server of Figure 3B that already provide matching. *See id.* at 10. Finally, Appellant contends that placing Seidel’s servers at Van Roon’s jurisdiction partners would not facilitate matching and clearing of customer orders and trades across borders because trades across borders would already be facilitated by Van Roon’s system without further modification. *See id.*

In the Answer, the Examiner asserts that the broadest reasonable interpretation of “geographically distributed” could include any servers that are not the same server; might comprise two servers located in the same server room in a single building; two servers on different floors of the building, two servers in different buildings of the same corporate complex, etc. *See Ans.* 6. The Examiner notes that “geographically distributed” has not been clearly defined by Appellant. *See id.*; *see also Spec.* ¶ 40 (brief description of geographically distributed match servers). Utilizing this interpretation, the Examiner finds that Seidel’s disclosure of the trading system comprising one or more servers meets the limitations of the claims because one of ordinary skill in the art would have recognized that more than one server, as broadly and reasonably interpreted, could be

geographically distributed. *See id.* at 6. Appellant does not provide a reply to the Examiner's additional findings in the Answer. *See Reply Br.* 1–5.

We agree with the Examiner's broadest reasonable interpretation for "geographically distributed." Appellant's Specification does not provide any enlightenment regarding the meaning for "geographically distributed." *See Spec.* ¶ 40. Dictionary definitions also fail to provide meaningful enlightenment regarding the meaning for "geographically distributed." For example, "geographic" is defined as (1) "of or relating to geography"; (2) "belonging to or characteristic of a particular region." MERRIAM WEBSTER ONLINE DICTIONARY, <https://www.merriam-webster.com/dictionary/geographically> (based on the print edition of the Merriam-Webster's Collegiate Dictionary, Eleventh ed. (2003); last accessed Sept. 9, 2019). And "distributed" is defined as "characterized by a statistical distribution of a particular kind." MERRIAM WEBSTER ONLINE DICTIONARY, <http://www.merriam-webster.com/dictionary/distributed> (based on the print edition of the Merriam-Webster's Collegiate Dictionary, Eleventh ed. (2003); last accessed Sept. 9, 2019). With the Examiner's broadest reasonable interpretation in mind, we agree with the Examiner's finding that Seidel discloses, teaches, or suggests a first match server at a first location and a second match server at a second location geographically distributed from the first location based on Seidel's matching system that may comprise one or more servers. Appellant does not address the Examiner's updated position set forth in the Answer. *See Reply Br.* 1–5. Arguments not made in the briefs are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

For the foregoing reasons, we are not persuaded of error in the rejection of claim 39 under 35 U.S.C. § 103. Appellant does not present

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separate substantive arguments addressing dependent claims 40–45. *See* App. Br. 6–10. Accordingly, for the same reasons as those explained above with respect to claim 39, we are not persuaded of error in the rejection of claims 40–45 under 35 U.S.C. § 103.

DECISION

We REVERSE the rejection of claims 39–45 under 35 U.S.C. § 101.

We AFFIRM the rejection of claims 39–45 under 35 U.S.C. § 103.

Claims Rejected	Basis	Affirmed	Reversed
39–45	§ 101		39–45
39–45	§ 103 Seidel, Labuszewski, and Van Roon	39–45	
Outcome		39–45	

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