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Lempia Summerfield Katz LLC/CME
20 South Clark Street
Suite 600
Chicago, IL 60603

EXAMINER	
LIU, I JUNG	

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOSÉ ANTONIO ACUÑA-ROHTER and
PEARCE PECK-WALDEN

Appeal 2018-004928
Application 12/559,215
Technology Center 3600

Before JEAN R. HOMERE, CAROLYN D. THOMAS and
CARL W. WHITEHEAD JR., *Administrative Patent Judges*.

WHITEHEAD JR., *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants are appealing the final rejection of claims 1–24 under 35 U.S.C. § 134(a). Appeal Brief 2. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Introduction

The invention is directed to "software, systems and methods for electronic trading in a commodities exchange, derivatives exchange or similar business involving tradable items where orders from buyers are matched with orders from sellers." Specification ¶ 1.

Illustrative Claim

1. A computer implemented method of optimizing the computation of implied orders to a electronic trading system, the method comprising:

representing, by a processor, three or more financial products using a plurality of vectors having a number of columns, wherein the number of columns is equal to a number of unique legs making up the financial products;

defining, by the processor, a first order as a first vector of the plurality of vectors;

identifying, by the processor, a list of candidate vectors from the plurality of vectors, each candidate vector having at least one nonzero column in common with the first vector;

selecting, by the processor, a second vector from the list of candidate vectors;

adding, by the processor, the first vector to the second vector to define a first intermediate vector;

removing, by the processor, the second vector from the list of candidate vectors;

outputting, by the processor to the electronic trading system, an implied order corresponding to the second vector, if the first intermediate vector has no nonzero columns;

not outputting, by the processor to the electronic trading system, the implied order corresponding to the second vector, if the first intermediate vector has nonzero columns; and

whereby the electronic trading system processes less than all implied orders corresponding to the candidate vectors.

Appeal Brief 19 (Claims Appendix).

Rejection on Appeal

Claims 1–24 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to patent ineligible subject matter. Final Action 2–4.

ANALYSIS

Rather than reiterate the arguments of Appellants and the Examiner, we refer to the Appeal Brief (filed October 18, 2017), the Reply Brief (filed April 9, 2018), the Final Action (mailed May 3, 2017) and the Answer (mailed February 9, 2018), for the respective details.

The Examiner determines:

> The current implementation is based on a "the series of steps of representing, by a processor; defining, by the processor; identifying, by the processor; selecting, by the processor; adding, by the processor; removing, by the processor; outputting, by the processor are methods of organizing human activities, and an idea with mathematical relationships/formulas as part of fundamental economic practices and thus directed to an abstract idea." Such an abstract idea relating to the economy and commerce form the basis of a fundamental economic practice".

Final Action 2; *see Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 217 (2014) (describing the two-step framework "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.").

After the mailing of the Answer and the filing of the Briefs in this case, the USPTO published revised guidance on the application of § 101. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (hereinafter "Memorandum"). Under the Memorandum, the Office first looks to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity 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. 2018).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, does the Office 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 Memorandum.

We are not persuaded the Examiner's rejection is in error. Unless otherwise indicated, we adopt the Examiner's findings and conclusions as our own, and we add the following primarily for emphasis and clarification with respect to the Memorandum.

Alice/Mayo—Step 1 (Abstract Idea)
Step 2A–Prongs 1 and 2 identified in the Revised Guidance

Step 2A, Prong One

Appellants argue the pending claims are not directed to an abstract idea because:

> [T]he claims are directed to a specific, novel and patentable system for efficiently generating implied orders to an electronic trading system which improves the efficiency and computational capacity of that system, as well as the transaction processing systems implemented thereby, by, instead of blindly computing all possible trading combinations, using rules to selectively reduce the computational load on the system by only computing tradeable implied combinations while avoiding computing those combinations which are not tradeable.
> Appeal Brief 4.

Appellants' argument is not persuasive. Instead, we agree with the Examiner's determination that the claims are directed to an abstract idea. Final Action 2–4.

> Claim 1 recites, "A computer implemented method of optimizing the computation of implied orders to [an] electronic trading system," "representing, by a processor, three or more financial products using a plurality of vectors having a number of columns, wherein the number of columns is equal to a number of unique legs making up the financial products," "outputting, by the processor to the electronic trading system, an implied order corresponding to the second vector, if the first intermediate vector has no nonzero columns," "not outputting, by the processor to the electronic trading system, the implied order corresponding to the second vector, if the first intermediate vector has nonzero columns" and "whereby the electronic trading system processes less than all implied orders corresponding to the candidate vectors."

These steps comprise fundamental economic principles or practices and/or commercial or legal interactions; thus, the claim recites the abstract idea of "certain methods of organizing human activity." Memorandum, Section I (Groupings of Abstract Ideas); *see* Specification ¶¶ 16–22 ("One of the advantages of quickly identifying tradable combinations is that the exchange can execute trades that would not have previously occurred. An increase in trading volume is an increase in revenue for the exchange."). Our reviewing court has found claims to be directed to abstract ideas when they recited similar subject matter. *See 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 . . . ."); *Ultramercial, Inc. v. Hulu,*

LLC, 772 F.3d 709, 715 (Fed. Cir. 2014) (sequence of receiving, selecting, offering for exchange, display, allowing access, and receiving payment recited an abstraction); *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1378 (Fed. Cir. 2017) (holding that sequence of data retrieval, analysis, modification, generation, display, and transmission was abstract). Therefore, we conclude the claims recite an abstract idea pursuant to Step 2A, Prong One of the guidance. *See* Memorandum, Section III(A)(1) (Prong One: Evaluate Whether the Claim Recites a Judicial Exception).

Step 2A, Prong Two (Integration into a Practical Application)

Under Prong Two of the Revised Guidance, we must determine whether there are "additional elements that integrate the judicial exception into a practical application." *See* MPEP § 2106.05(a)--(c), (e)--(h).

Appellants argue, "[T]he claims are directed to a specific, novel and patentable system for efficiently generating implied orders to an electronic trading system which improves the efficiency and computational capacity of that system." Appeal Brief 4. However, as the Federal Circuit has explained, a "claim for a *new* abstract idea is still an abstract idea." *Synopsis, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016). Even assuming the technique claimed was "[g]roundbreaking, innovative, or even brilliant," that would not be enough for the claimed abstract idea to be patent eligible. *See Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013).

Appellants argue, "While not entirely dispositive, as opposed to preempting the entire idea of optimizing the computation of implied orders, the claims, instead, are directed to a specific, novel and patentable system for computing an optimized subset of implied orders according to a specific

set of rules, i.e. if the claimed intermediate vector has no nonzero columns." Appeal Brief 7.

We agree the Supreme Court has described "the concern that drives this exclusionary principle [i.e., the exclusion of abstract ideas from patent eligible subject matter] as one of pre-emption." *Alice*, 134 S. Ct. at 2354. However, characterizing pre-emption as a driving concern for patent eligibility is not the same as characterizing preemption as the sole test for patent eligibility. As our reviewing court has explained, "[t]he Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability" and "[f]or this reason, questions on preemption are inherent in and resolved by the § 101 analysis." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice*, 134 S. Ct. at 2354). And although "preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Id.* Moreover, "[w]here a patent's claims are deemed only to disclose patent ineligible subject matter under the *[Alice/Mayo]* framework . . ., preemption concerns are fully addressed and made moot." *Id.; see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015), *cert. denied*, 136 S. Ct. 701 (2015)("[T]hat the claims do not preempt all price optimization or may be limited to price optimization in the e-commerce setting do not make them any less abstract.").

Appellants argue:

> [T]he claimed invention improves upon the technical field of electronic trading and transaction processing by offering a novel mechanism for efficiently and selectively computing implied combinations, as opposed to merely computing all such combinations, thereby improving the technical process of

> electronic order processing. *See* Appellants' Specification at paras. 3-6, 17-20 and 29.
> Appeal Brief 8.

Appellants' arguments are not persuasive because the claims merely recite a method for trading securities within an electronic trading system using a processor wherein the claims do not recite supporting technology for improving a computer system. *See* Specification ¶¶ 32–35 ("Terminals 301 include a central processor that controls the overall operation of the computer, a user interface that allows the trader or market participant to enter and/or receive information, and a communication device such as a network card or a modem that allows communication with the electronic trading system 300."); s*ee also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016):

> ([W]e find it relevant to ask whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea . . . the focus of the claims is on the specific asserted improvement in computer capabilities (i.e., the self-referential table for a computer database) or, instead, on a process that qualifies as an "abstract idea" for which computers are invoked merely as a tool.).

The claims do not recite an additional element or elements that reflect an improvement in the functioning of a computer, or an improvement to other technology or technical field. S*ee Alice*, 573 U.S. at 222 ("In holding that the process was patent ineligible, we rejected the argument that 'implement[ing] a principle in some specific fashion' will 'automatically fal[l] within the patentable subject matter of § 101.'" (alterations in original) (quoting *Parker v. Flook*, 437 U.S. 584, 593 (1978))).

Accordingly, we determine the claim does not integrate the judicial exception into a practical application. *See* Memorandum, Section III(A)(2)

(Prong Two: If the Claim Recites a Judicial Exception, Evaluate Whether the Judicial Exception Is Integrated Into a Practical Application).

Alice/Mayo—Step 2 (Inventive Concept)
Step 2B identified in the Revised Guidance

Step 2B

Next, we determine whether the claim includes additional elements that provide significantly more than the recited judicial exception, thereby providing an inventive concept. *Alice*, 573 U.S. at 217–18 (quoting *Mayo*, 566 U.S. at 72–73). Appellant contends, "[T]hat lack of preemption is indicative of the claims including 'something more' under the two-part Alice test." Appeal Brief 7.

We are not persuaded, as we find the claim does not include a specific limitation or a combination of elements that amounts to significantly more than the judicial exception itself. *See* Memorandum, Section III(B) (Step 2B: If the Claim Is Directed to a Judicial Exception, Evaluate Whether the Claim Provides an Inventive Concept); *see also Aatrix Software, Inc. v. Green Shades Software, Inc.*, 890 F.3d 1354, 1359 (Fed. Cir. 2018) (Moore, J., concurring) ("the 'inventive concept' cannot be the abstract idea itself"); *see* Final Rejection 3–4 ("The claim elements in addition to the abstract idea are processor with memory that performs the steps of comparing and organizing information for transmission to a remote computer.").

Accordingly, we conclude claims 1–24 are directed to a fundamental economic practice, which is one of certain methods of organizing human activity identified in the Memorandum and thus an abstract idea, and the claims do not recite limitations that amount to significantly more than the

abstract idea itself. We sustain the Examiner's § 101 rejection of claims 1–24.

DECISION

The Examiner's patent ineligible subject matter rejection of claims 1–24 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). *See* 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED