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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ANDREW MILNE

Appeal 2016-006582
Application 14/304,471
Technology Center 3600

Before ANTON W. FETTING, MICHAEL C. ASTORINO, and
AMEE A. SHAH, *Administrative Patent Judges*.

SHAH, *Administrative Patent Judge*.

DECISION ON APPEAL¹

The Appellant² appeals under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 1–6 and 8–20, which are all of the pending claims,³ under 35 U.S.C. § 101 as being directed to non-statutory subject matter.⁴ We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

¹ Throughout this decision, we refer to the Appellant's Appeal Brief ("Appeal Br.," filed Oct. 28, 2015), Reply Brief ("Reply Br.," filed June 17, 2016), and Specification ("Spec.," filed June 13, 2014), and to the Examiner's Answer ("Ans.," mailed Apr. 19, 2016) and Final Office Action ("Final Act.," mailed Apr. 30, 2015).

² According to the Appellant, the real party in interest is Chicago Mercantile Exchange Inc. Appeal Br. 2.

³ Claim 7 is cancelled. Appeal Br. 10; *see* Ad. Act. 1 (mailed July 7, 2015).

⁴ The Examiner has withdrawn the rejection under 35 U.S.C. § 112. Ans. 2.

STATEMENT OF THE CASE

The Appellant's invention "relate[s] to providing liquidity in a full size contract to a trader of one or more small contracts" and "to generating ratio spreads that may be used in implied market trading." Spec. ¶ 24.

Claims 1, 10, and 15 are the independent claims on appeal. Claim 1 (Appeal Br. 9 (Claims App.)) is illustrative of the subject matter on appeal and is reproduced below:

1. A computer implemented method comprising:

receiving, by a hardware matching processor in a data transaction processing system in which data items are transacted by the hardware matching processor that matches electronic data transaction request messages for the same one of the data items based on multiple transaction parameters from different client computers over a data communication network, from a client computer, a first electronic data transaction request message having data indicating a first order to trade a first quantity of at least a first contract, the first contract being characterized by an underlier and a first size indicative of a first volume of the underlier represented by the first contract;

comparing, by the hardware matching processor, the data indicating the first order with one or more other electronically stored data records stored in a database coupled with the hardware matching processor and indicating orders which are counter to the first order and that have been previously received as data transaction request messages by the hardware matching processor from client computers coupled therewith;

determining, by the hardware matching processor, that the one or more other electronically stored data records indicate orders that have been previously received which are counter to the first order and are for at least a collective second quantity of a second contract or a combination of at least the first contract and the second contract, the second contract being characterized by the underlier and a second size indicative of a second volume

of the underlier represented by the second contract, the second size being different from the first size;

determining, by the hardware matching processor, when the previously received one or more orders are for the second contract, whether a first product of the first quantity multiplied by the first size is equivalent to a second product of the collective second quantity multiplied by the second size; and

executing, by the hardware matching processor, a transaction between the first order and the one or more other orders when the first product is equal to the second product, removing the electronically stored data records of the orders having been transacted, and generating a new electronically stored data record that indicates the transaction.

ANALYSIS

The Appellant argues claims 1–6 and 8–20 as a group. *See* Appeal Br. 5, 8. We consider claim 1 as representative of the group; claims 2–6 and 8–20 stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Under 35 U.S.C. § 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.” 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) (quoting *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 588–89 (2013)).

The Supreme Court in *Alice* reiterated the two-step framework, set forth previously in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 78–79 (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 in that analysis is to “determine whether the claims at issue are *directed to* one of those patent-ineligible concepts.” *Id.* (citing *Mayo*, 566 U.S. at 79) (emphasis added). If so, the second step is to consider the elements of the claims “individually and ‘as an ordered combination’” to determine whether the additional elements “‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo*, 566 U.S. at 79, 78).

In other words, the second step is to “search for an ‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Id.* (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73). The Court acknowledged in *Mayo*, that “all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Mayo*, 566 U.S. at 71. We, therefore, look to 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, *i.e.*, “whether the focus of the claims is on [a] specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.” *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016).

Under the first step of the *Mayo/Alice* framework, the Examiner determines that claim 1 is directed to “a series of steps instructing how to match and execute trades which is a fundamental economic practice and thus

an abstract idea.” Final Act. 5. Conversely, the Appellant contends that the claims are not directed to an abstract idea but “to a tangible arrangement and communication between claimed physical components.” Appeal Br. 5. We disagree with this contention, but agree with the Appellant’s contention that “[u]ltimately, the claim is directed towards executing transactions.” *Id.* at 6.

The Specification is titled “Ratio Spreads for Contracts of Different Sizes in Implied Market Trading” and provides that the invention “relate[s] to providing liquidity in a full size contract to a trader of one or more small contracts” and “to generating ratio spreads that may be used in implied market trading.” Spec. ¶ 24. A “ratio spread includes a spread between two contracts of different sizes” and is “created with tradable volumes being determined by lot points assigned to each linked contract.” *Id.* The size, e.g., volume, of the contract is “defined by an exchange, government entity, or other organization group.” *Id.* Claim 1 provides for a computer implemented method comprising the steps of receiving, by a system in which data items are transacted, a first data transaction request having data, comparing, by the processor, the data with data stored in a database, determining, by the processor, that one or more stored data records are counter to the first data and are for a collective second quantity of a second contract, determining, by the processor, a mathematical correlation between the first and second data, and based on the correlation, executing a transaction, removing the stored records, and generating a new record. *See* Appeal Br. 9. The system “may be a server, supercomputer, personal computer, central processing system, or other processor that receives and matches orders,” i.e., a generic computer/processor. Spec. ¶ 33. The Specification does not specifically provide for a “hardware matching

processor,” as claimed, but does provide for the system to receive orders and transmit data (*id.* ¶ 40), for the system to “be implemented with one or more mainframe, desktop or other computers” (*id.*), and for the order matching function to be performed by one or more specialized modules, i.e., Match Engine Modules 106, that comprises program code (*id.* ¶¶ 43, 45, 46). “The operations of the Match Engine 106 may be performed in more than one part of a trading network 1000 or in related systems.” *Id.* ¶ 44. The Specification envisions that the operations can be performed without the Match Engine, in that calculation of implied orders can be performed by traders at their stations and “outside the trading network 1000 for the evaluation of possible trading strategies, for instruction, regulation or in the solution of other problems where trading is used as a model.” *Id.* As such, the Specification provides for a generic computer programmed to perform specific functions and not for a technologically-specific arrangement.

In that context, considering the claim in light of the Specification and on its “character as a whole” (*Enfish*, 822 F.3d at 1335), the claim is directed to receiving, comparing, and determining data to generate ratio spreads for market trading, and conditionally executing a transaction based on the spread.⁵ In this manner, the claim is similar to those deemed to be abstract ideas by our reviewing courts in *Bilski v. Kappos*, 561 U.S. 593, 609–611 (2010) (hedging risk as applied to energy markets and mathematical formula thereto), *In re Chorna*, 656 Fed. Appx. 1016, 1019–20 (Fed. Cir. 2016)

⁵ We note that “[a]n abstract idea can generally be described at different levels of abstraction.” *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). The Board’s “slight revision of its abstract idea analysis does not impact the patentability analysis.” *Id.* at 1241.

(trading of hindsight financial instruments, i.e. contractual relations), and *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (process of gathering and analyzing information of a specified content and displaying the result). Here, the claim involves nothing more than receiving, comparing, and determining data and conditionally executing a transaction and removing and generating data records without any particular inventive technology — an abstract idea. *See Electric Power*, 830 F.3d at 1354. The mere presence of physical components in a tangible arrangement (*see* Appeal Br. 5) in the claim does not preclude the claim from being directed to an abstract idea at least because the Court has instructed that the significance of these elements is determined in step two of the *Mayo/Alice* framework. The claims in *Alice*, for example, were not devoid of technical elements, but were determined to be directed to an abstract idea. *Cf. In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016) (“[N]ot every claim that recites concrete, tangible components escapes the reach of the abstract-idea inquiry.”).

We find unpersuasive the Appellant’s argument that the claim provides a technical solution to a technical problem. Appeal Br. 6 (citing Example 1 of the Office Examples of January 27, 2015 (“2015 Examples”)); *see also* Reply Br. 2–4 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). In *DDR Holdings*, the Federal Circuit determined that the claims addressed the problem of retaining website visitors who, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be transported instantly away from a host’s website after clicking on an advertisement and activating a hyperlink. *DDR Holdings*, 773 F.3d at 1257. The Federal Circuit, thus, held that the claims

were directed to statutory subject matter because they claim a solution “necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” *Id.* The court cautioned that “not all claims purporting to address Internet-centric challenges are eligible for patent.” *Id.* at 1258. And the court contrasted the claims to those at issue in *Ultramercial Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014), in that, in *DDR Holdings*, the computer network was not operating in its “normal, expected manner” and the claims did not “recite an invention that is . . . merely the routine or conventional use of the Internet.” *Id.* at 1258–59.

In contrast, here, the solution asserted by the Appellant of “comparing, generating, and removing data related to orders of multiple sizes” (Appeal Br. 6) requires only a generic computer, as discussed above. The Appellant does not direct attention to, and we do not see, where the Specification provides that the components act in an abnormal manner. Rather, the claims “recite an invention that is . . . merely the routine or conventional use of the Internet.” *DDR Holdings*, 773 F.3d at 1258–59. Although the communication is network-centric, the Appellant does not provide reasoning or support that the problem of “allowing orders of different sizes to be effectively traded” (*id.*) is a problem rooted in technology arising out of computer networks. The Specification discusses that previously, “[t]raders of small contracts [were] limited to trading with other traders of small contracts,” and that it was “not possible for small contracts to be exchanged with full size contracts nor for small contracts to participate in trades with combination contracts defined in terms of the full size contract,” (Spec. ¶ 12), but does not explain or discuss how or why

small contracts were not exchanged with large contracts because of technical or technological issues. Unlike Example 1, the claimed invention here is not “directed towards performing isolation and eradication of computer viruses, worms, and other malicious code, a concept inextricably tied to computer technology and distinct from the types of concepts found by the courts to be abstract.” 2015 Examples 3.

We disagree with the Appellant’s contention that claim 1 is not directed to an abstract idea because the “‘additional steps’ may add meaningful limitations.” Appeal Br. 6 (citing Example 3 of 2015 Examples). In Example 3, the court deemed the claims to be directed to an abstract idea. 2015 Examples 8. Based on the second step, the court determined that the claim’s additional steps that tied the mathematical operation to the processor’s ability to process digital images went beyond simply retrieving and combining data using a computer. *Id.* at 9. The Appellant makes no such assertion here.

We also find unpersuasive the Appellant’s argument that the claim is not directed to an abstract idea because, like *Enfish*, the claim is “directed to ‘a specific improvement to the way computers operate,’” providing a system which facilitates the ability to non-homogenous transactions, e.g. transactions characterized by different sizes, by implementing the technical solution of evaluating transactions for equivalence based, not only on size, but quantity to establish when transactions may be equivalent when evaluated in the aggregate.⁶ See Reply Br. 2–3. The claims at issue in *Enfish* were directed to a specific type of data structure, i.e., a self-referential

⁶ The Appellant may present a new argument based on a recent relevant decision of either the Board or a federal court.

table for a computer database, designed to improve the way a computer carries out its basic functions of storing and retrieving data. *Enfish*, 822 F.3d. at 1335–36. There, in rejecting a § 101 challenge, the court held that “the plain focus of the claims is on an improvement to computer functionality itself, not on economic or other tasks for which a computer is used in its ordinary capacity.” *Id.* at 1336. The Appellant has not adequately explained here how the court’s holding in *Enfish* impacts the present analysis under the *Mayo/Alice* framework. For example, the Appellant does not point to anything in the claims that resembles the inventive self-referential data structure at issue in *Enfish*. We also find nothing in the Appellant’s Specification, nor does the Appellant direct us to anything in the Specification, to indicate that the invention provides an improvement in computer functionality. And, as discussed above, evaluating, by a generic computer, transactions based on quantity is not a technical solution.

Under the second step of the *Mayo/Alice* framework, we adopt and find supported the Examiner’s determination that the claim limitations, taken individually or as an ordered combination, do not recite an inventive concept. *See* Final Act. 5; Ans. 4, Ad. Act. We are unpersuaded by the Appellant’s arguments to the contrary. *See* Appeal Br. 7.

We find unpersuasive the Appellant’s arguments that the claim is patent-eligible under § 101 because claim 1 is “directed to transactions whose size increments are not the same, e.g. the underlier size is different” and because “[t]he specific environment in which the claimed invention operates is indicative of the claims being significantly more than the abstract idea.” Appeal Br. 7; *see also* Reply Br. 3. The Appellant does not provide support or reasoning as to how the size of the transactions or trading

environment affect the recited steps of receiving, comparing, and determining data, and conditionally executing a transaction, or technologically improves the generic computer that implements the steps.

Similarly, the Appellant does not provide adequate reasoning or support as to how the “claims as a whole result in an improvement to the specific transaction processing systems utilized to match transactions.”

Appeal Br. 7. As discussed above, the Specification provides for the method of claim 1 to be implemented by generic computer components. *See Spec.* ¶¶ 33–38, 40, 42–44. We note that a general purpose computer programmed to perform conventional functions does not amount to an inventive concept such that the claims are significantly more than the abstract idea. *See Alice*, 134 S. Ct. at 2357–60 (Applying an abstract idea, such as an algorithm, on a general purpose computer is not enough to transform a patent-ineligible abstract idea into a patent-eligible invention.) and *EON Corp. IP Holdings LLC v. AT & T Mobility LLC*, 785 F.3d 616, 623 (Fed. Cir. 2015) (“A microprocessor or general purpose computer lends sufficient structure only to basic functions of a microprocessor. All other computer-implemented functions require disclosure of an algorithm.”).

In response to the Appellant’s argument that the claim “would not preempt the general technology of transaction processing systems” (Appeal Br. 7), we note that although 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 preemption” (*see Alice*, 134 S. Ct. at 2354), characterizing preemption as a driving concern for patent eligibility is not the same as characterizing preemption as the sole test for patent eligibility. “The 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). Although “preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.” *Id.* The aforementioned concept is not sufficiently limiting so as to fall clearly on the side of patent-eligibility.

Based on the foregoing, we are not persuaded that the Examiner erred in rejecting independent claim 1 under 35 U.S.C. § 101, and we sustain the rejection of claim 1 and of claims 2–6 and 8–20, which fall with claim 1.

DECISION

The Examiner’s rejection of claims 1–6 and 8–20 under 35 U.S.C. § 101 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