UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte CHARLES A. VICE, THOMAS FARLEY,
EDWARD BAGINSKI, GREG HAMAMGIAN,
SIMON SHLYAYFER, MAYUR KAPANI, and
PETRE ALEXANDRESCU

_____

Appeal 2018-001560[1]
Application 13/625,423
Technology Center 3600

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Before MURRIEL E. CRAWFORD, JOSEPH A. FISCHETTI, and
PHILIP J. HOFFMANN, *Administrative Patent Judges*.

CRAWFORD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal from the final rejection of claims 1–24. We have
jurisdiction to review the case under 35 U.S.C. §§ 134 and 6.

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[1] The Appellants identify Intercontinental Exchange Holdings, Inc. as the
real party in interest. Appeal Br. 1.

The invention "is generally related to limiting unwanted price movement of a financial instrument." Spec. ¶ 2.

Claim 1 is illustrative:

> 1.   A method of limiting price movements in an electronic server system, comprising:
>
> providing an exchange server comprising at least one matching engine module, said exchange server comprising at least one processor executing instructions that cause the exchange server to perform the steps of:
>
> establishing an interval price limit (IPL) period that defines a predetermined length of time commencing at a start time;
>
> establishing an IPL amount that defines a permissible increase or decrease in an anchor price of a financial instrument during the IPL period, said anchor price being the price of the financial instrument at the start time;
>
> receiving and matching, via the at least one matching engine module, at least one buy order and at least one sell order for the financial instrument during the IPL period, thereby generating at least one matched trade having a trade price, said trade price comprising a price that is independent of the anchor price;
>
> comparing the trade price to the anchor price upon completion of said matching of the at least one buy order and the at least one sell order;
>
> determining that the trade price is within the IPL amount of the anchor price for a first of the at least one matched trade and executing the first of the at least one matched trade; and
>
> determining that the trade price is not within the IPL amount of the anchor price for a second of the at least one matched trade and preventing the second of the at least one matched trade from executing,
>
> said executing and preventing both occurring during the IPL period.

The Examiner rejected claims 1–24 under 35 U.S.C. § 101 as directed to ineligible subject matter in the form of abstract ideas.

The Examiner rejected claims 1–24 under 35 U.S.C. § 103(a) as unpatentable over Voigt (US 2012/0116942 A1, pub. May 10, 2012) and (hereinafter "Voigt"), in view of Bandman et al. (US 2007/0027788 A1, pub. Feb. 1, 2007) ("Bandman").

We AFFIRM.

ANALYSIS

Patentable subject matter

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: "[l]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 Alice*, 573 U.S. 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

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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, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 192 (1981)); "tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores" (*id.* at 184 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1854))); 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 176; *see also id.* at 192 ("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

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concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (quotation marks 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.* (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. USPTO's January 7, 2019 Memorandum, *2019 Revised Patent Subject Matter Eligibility Guidance* ("Memorandum"). 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 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)).

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 are 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, 84 F.R. 50 (2019).

Claim 1 recites steps that establish price limits and time intervals, and prevent matched trades that fall outside the price limits within the time intervals from executing, within a financial instrument trading system that

matches buy and sell orders. Claim 1 is thus directed to limiting price variations on matched trades in financial instrument trading. Because the claim is directed to the performance of financial transactions, it is thus directed to an abstract idea. *See* MANUAL OF PATENT EXAMINING PROCEDURE ("MPEP") § 2106.04(a)(2)(I)(A). In addition, other than the mention of a "server" with a "module" that performs the matching, the method could be performed mentally by a person looking at the information that represents the buy and sell orders. *See id.* at (III)(A)–(B).

The method does not integrate the abstract idea into a practical application. For example, the method does not improve the underlying computer by establishing and enforcing price limits, because any computer can be used to execute the claimed method. *See* Spec. ¶ 12. In addition, the method is directed to financial instrument trading, and as such the claimed method does not improve another technology. *See* MPEP ¶ 2106.05(a). Because a particular computer is not required, the claim also does not define or rely on a "particular machine." *See id.* at § 2106.05(b). Further, the method does not transform matter. *See id.* at § 2106.05(c). Instead, the claim matches offers, determines if they are within a range or not, and either executes a matched trade or not. As such, the method has no other meaningful limitations (*see id.* at § 2106.05(e)), and thus merely recites instructions to execute the abstract idea on a computer (*see id.* at § 2106.05(f)).

The only element, beyond the abstract idea of limiting price variations on matched trades in financial instrument trading, is an "exchange server comprising at least one matching engine module." The server, however, is a general purpose computer (Spec. ¶ 12), and the "module" is simply software

the server executes (*id.* at ¶ 26). The operations of storing, analyzing, receiving, and writing data are primitive computer operations found in any computer system. *See In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011). Thus, the only additional elements beyond the abstract idea are well-understood, routine, and conventional. *See* MPEP ¶ 2106.05(d).

"[A]fter *Alice*, there can remain no doubt: recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible. The bare fact that a computer exists in the physical rather than purely conceptual realm is beside the point." *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014) (internal citations and quotation marks omitted). Here, independent claim 13 merely recites a system that comprises processors configured to execute instructions that correspond to the steps of method claim 1, and is also directed to an abstract idea.

Thus, claims 1 and 13 are directed to abstract ideas and do not recite limitations that transform the abstract ideas into eligible subject matter. The dependent claims further limit the rules employed in the matching and price-limiting process, such as "preventing entry of new orders that would result in a matched trade having a trade price beyond the IPL amount of the anchor price," in claim 4, and "wherein at least one of the orders received is a stop-limit order having a limit price" in claim 9. The dependent claims thus do not alter the analysis that the claims are directed to ineligible subject matter.

We are not persuaded by the Appellants' argument, citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), that the claimed method and system improve computer systems, by changing software to implement

different trading rules, which leads to an increase in computer efficiency and throughput, and avoiding unnecessary operations. Appeal Br. 7–10. Asking a computer to do less work, by stopping some trades, and improving throughput by not imposing rules that stop all trades, does not alter the function of the computers asked to perform the instructions. The computers asked to execute the claimed processes are still are capable of the same throughput in computer operations, even if the trading rules change. Merely asking the computer to do less work, or not stopping the computer from working, does not improve the computer, whose capabilities remain unchanged with the software that embodies different trading rules.

We are not persuaded by the Appellants' argument, citing *McRO, Inc. v. Bandai Namco Games America, Inc.* 837 F.3d 1299 (Fed. Cir. 2016), that because the claimed method changing trading rules that humans would use if the method were not computerized, the method is eligible subject matter. Appeal Br. 10–11. Changing an abstract idea to a different abstract idea does not convert the abstract idea into eligible subject matter under *McRO*.

We are not persuaded by the Appellants' argument, citing *BASCOM Global Internet v. AT&T Mobility, LLC*, 827 F.3d 1341 (Fed. Cir. 2016), that because the claims present an inventive concept that provides a technical improvement over prior art processes, by blocking some trades while permitting trading to continue unstopped when offers are matched outside of a defined price range, the claims recite eligible subject matter. Appeal Br. 11–12. Changing an abstract idea to a different abstract idea, by altering the rules by which trading is conducted, does not convert the abstract idea into eligible subject matter under *BASCOM*.

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The Appellants also argue the claims improve the field of electronic trading, which allegedly is "another" technical field, and thus the claims recite patent eligible. Appeal Br. 12. We are not persuaded by the argument, because the claims are directed to trading financial instruments and thus are not in a different field than the abstract idea. Spec. ¶ 2–4. We also are not persuaded that the claims are patent-eligible because they do not preempt all ways of performing the abstract idea. Appeal Br. 14. While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility. *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) ("Where a patent's claims are deemed only to disclose patent ineligible subject matter under the Mayo framework, as they are in this case, preemption concerns are fully addressed and made moot.").

Because the Appellants have not shown error in the Examiner's rejection of claims as directed to abstract ideas, we sustain the rejection of claims 1–24 under 35 U.S.C. § 101.

Obviousness Rejection

We are persuaded by the Appellants' argument that Voigt fails to disclose comparing a trade price at which a trade is matched to an anchor price to determine if the matched trade will be executed, as claimed, because Voigt instead compares an order before a match is made. Appeal Br. 19–20. The Examiner asserts the process in Voigt is "not substantially different" than the claimed process, because in Voigt the matching is "the mere identification of a potential trade transaction based on a possible matching of terms and prices." Answer 11. We agree with the Appellants.

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The Examiner finds the claimed "comparing the trade price to the anchor price upon completion of said matching of the at least one buy order and the at least one sell order" in paragraphs 9 and 10 of Voigt. Final Act. 15. Voigt discloses a system that is configured only to transmit an order to an exchange if the price of the order is within an acceptable range. Voigt ¶ 9. This comparison is done before matching, which does not meet the claim language. Voigt also discloses a system that determines a call auction price, but compares the call auction price at which a match would be made to a price range in the order itself. *Id.* at ¶ 10. This also does not meet the claim language, because the price range in the order does not correspond to a price range based on "the price of the financial instrument at the start time," as claimed.

The Examiner has thus failed to support adequately the obviousness of claims 1 and 13 over Voigt and Bandman, because at least one feature is not disclosed as asserted. For this reason, we do not sustain the rejection of claims 1–24 under 35 U.S.C. § 103(a).

DECISION

We affirm the rejection of claims 1–24 under 35 U.S.C. § 101.

We reverse the rejection of claims 1–24 under 35 U.S.C. § 103(a).

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