UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/252,453	04/14/2014	Kevin Rodgers	081806-8104.US03	8204

98783 7590 09/24/2019

Perkins Coie LLP - DEN General
P.O. Box 1247
Seattle, WA 98111-1247

EXAMINER
SUBRAMANIAN, NARAYANSWAMY

ART UNIT	PAPER NUMBER
3695	

NOTIFICATION DATE	DELIVERY MODE
09/24/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentprocurement@perkinscoie.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KEVIN RODGERS and JEFFREY DIRK WARD

Appeal 2018-007712
Application 14/252,453
Technology Center 3600

Before BARBARA BENOIT, JON M. JURGOVAN, and RUSSELL E. CASS, *Administrative Patent Judges*.

CASS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's rejection under 35 U.S.C. § 101 of claims 1–4 and 6–20, which constitute all of the claims pending in this Application. Appeal Br. 5.[2] Claim 5 has been cancelled. 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 lists Volbroker Limited of London as the real party in interest. Appeal Brief filed April 16, 2018 ("Appeal Br.") 3.

[2] Rather than repeat the Examiner's positions and Appellant's arguments in their entirety, we refer to the above mentioned Appeal Brief, as well as the following documents for their respective details: the Non-Final Action mailed March 20, 2017 ("Non-Final Act."); the Examiner's Answer mailed May 22, 2018 ("Ans."); and the Reply Brief filed July 20, 2018 ("Reply Br.").

BACKGROUND

The present invention relates to a system and method for trading option contracts, such as foreign currency option contracts. Abstract. Appellant's Specification explains that the prices for options are often quoted in terms of volatility, which is a measure of the change in value of an option contract. Spec. 3. Volatility may be calculated using the Black-Scholes equation based on the spot rate (the current market rate of the underlying transaction to the option contract), strike price (the price at which the option purchaser can exercise the underlying transaction), time to expiry, foreign currency interest rate, and domestic currency interest rate. *Id.* at 3, 14. After an option contract is bought or sold at a specified volatility, the volatility is converted into a monetary purchase price using the Black-Scholes equation. *Id.* at 3. A volatility surface may be created as a three-variable relationship in which a volatility price can be calculated as long as a given time to expire and given strike price are provided. *Id.* According to the Specification, many large banks have internally implemented volatility surface tradition system to allow small trades to be priced automatically and reduce the manual workload for traders. *Id.* at 3–4.

The Specification explains that the invention provides an interactive electronic trading system for options in financial instruments which enables users to trade options under controlled credit risk parameters and with mechanisms implemented which will maintain current pricing for option contract bids and offers. *Id.* at 7. It explains that the invention is also directed to a system for automatic price quotations for a requested option contract, in which each user has an internal volatility surface, and the system polls those internal volatility surfaces for prices on the requested option

contract in order to provide the lowest price to the user requesting the option contract. *Id.* at 8.

Claim 20 is illustrative of the claims at issue:

> 20. A method of operating a pricing system comprising:
>
> polling, by a processor of the pricing system, a plurality of workstations for preferences associated with an option contract and volatility data associated with the option contract, wherein the volatility data from each workstation is derived in real-time through an interpolation of a volatility surface associated with the option contract;
>
> storing, by the processor of the pricing system, the volatility data and the preferences in a database;
>
> receiving, by the processor of the pricing system, a request for a quote for the option contract from a requester;
>
> dynamically generating prices on the option contract to avoid holding a complete volatility surface in an associated memory of the system server;
>
> identifying, by the processor of the pricing system, from the dynamically determined prices, a best price for the request, wherein the best price is associated with one of the plurality of workstations and the requester satisfies a credit requirement associated with the best price that is indicated in the preferences; and
>
> communicating, by the processor of the pricing system, the best price to the requester in response to the request.

Appeal Br. 20–21 (Claims Appendix).

PRINCIPLES OF LAW

I. SECTION 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: "[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 Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012), and *Alice*. *Alice*, 573 U.S. at 217–18 (citing *Mayo*, 566 U.S. at 75–77). 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*, 130 S. Ct. 3218 (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*, 130 S. Ct. (2010)); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (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 183 n.7 (quoting *Corning v. Burden*, 56 U.S. 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 176; *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.*

II. USPTO SECTION 101 GUIDANCE

The United States Patent and Trademark Office ("USPTO") recently published revised guidance on the application of § 101. USPTO, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019 Guidance"). Under the 2019 Guidance, we first look to whether the claim recites the following:

> (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)).

See 2019 Guidance, 84 Fed. Reg. at 52–55.

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 2019 Guidance, 84 Fed. Reg. at 56.

ANALYSIS

I. THE SECTION 101 REJECTION

A. The Examiner's Rejection and Appellant's Contentions

In the Non-Final Office Action, the Examiner determined that claim 20 "is directed to interactive pricing and trading of option contracts which is considered to be an abstract idea similar to the concepts that have been identified by the courts such as creating and fulfilling contractual relationships," citing *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350 (Fed. Cir. 2014). Non-Final Act. 3. According to the Examiner, claim 20 "fall[s] squarely within the realm of abstract ideas as interpreted in the *Alice* decision." Ans. 3–4. The Examiner further determines that the steps of the claimed process do not include "substantially more" than the abstract idea because they "employ a generic system comprising a generic database and a generic server suitably programmed to perform the claimed functions." *Id.* at 6.

Appellant argues that the claims are not directed to an abstract idea under *Alice* Step 2A. Appeal Br. 7–12. Appellant contends that the Examiner over-generalizes claim 20 by determining that it relates to "interactive pricing," "trading of options contracts," or creating and fulfilling contractual relationships." Appeal Br. 7–11. According to Appellant, the Examiner also "fails to consider the technical benefits of identifying a best price based on prices that are dynamically generated to avoid holding a complete volatility surface in a memory." *Id.* at 9. Appellant further contends that claim 20 is analogous to the claims found patent-eligible in *Trading Technologies Int'l, Inc. v. CQG, Inc.*, 675 Fed Appx. 1001 (Fed. Cir. 2017) and *Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc.*, 880

F.3d 1356 (Fed. Cir. 2018). *Id.* at 11–12. Finally, Appellant argues that the claims overcome *Alice* Step 2B because they "provide far more than routine and conventional functions" and do not wholly preempt any field. *Id.* at 12–15.

B. Analysis under Step 2A, Prong 1, of the 2019 Guidance

Under Step 2A, Prong 1, of the 2019 Guidance, we first must determine whether any judicial exception to patent eligibility is recited in the claim. The 2019 Guidance identifies three judicially excepted groupings: (1) mathematical concepts, (2) certain methods of organizing human activity such as fundamental economic practices, and (3) mental processes. 2019 Guidance, 84 Fed. Reg. at 52–53. Based on existing Supreme Court and Federal Circuit precedent, the 2019 Guidance has identified "methods of organizing human activity" that may constitute an abstract idea, including "fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions)." *See* 2019 Guidance, 84 F3d. Reg. at 52.

Here, claim 1 falls into the categories of fundamental economic practices and commercial or legal interactions, which are among the categories of "organizing human activity" recognized by the 2019 Guidance. *See id*. Claim 20 recites "a method of operating a pricing system" for "receiving . . . a request for a quote of [an] option contract," "identifying . . . a best price for the request," and "communicating . . . the best price to the

requester." Appeal Br. 20–21 (Claims Appendix). Buying and selling options contracts, and determining prices for such contracts, are longstanding economic practices. *See* Spec. 1. Buying and selling options contracts are also commercial and legal interactions in the form of contracts and legal obligations. These limitations therefore recite abstract ideas under the 2019 Guidance. *See* 2019 Guidance, 84 F3d. Reg. at 52.

Claim 20 also recites "polling a plurality of workstations . . . for preferences associated with an option contract and volatility data associated with the option contract." Appeal Br. 20 (Claims Appendix). Appellant's Specification explains that preferences can include credit filters defining the counterparties with which an entity can deal, and volatility data can include volatility prices on option contracts. Spec. 16, 17. Polling users to obtain credit requirements and prices is incidental to the buying and selling of options contracts, and thus qualifies as a fundamental economic practice and as commercial and legal interactions. This polling step also can be performed by a human through contacting different users to obtain the credit requirements for parties with which they can deal and to obtain the volatility prices on the requested option contract, and it therefore qualifies as a mental process under the 2019 Guidance.

Claim 20 further recites that "the volatility data from each workstation is derived in real-time through an interpolation of a volatility surface associated with the option contract." Appeal Br. 20 (Claims Appendix). This interpolation is a mathematical calculation which qualifies as a mathematical concept under the 2019 Guidance. It can also be performed in the human mind or with pencil and paper, and therefore also qualifies as a

mental process under the 2019 Guidance. Therefore, claim 20 recites one or more abstract ideas.

Appellant argues that claim 20 is distinguishable from the claims found to be patent-ineligible in previous cases, such as *buySAFE, Alice*, and *Bilski*, because "none of the elements in claim 20 obligates any party or entity to perform under a contract or to fulfill a contractual relationship." Appeal Br. 7; *see* Reply Br. 2–3. Appellant, however, misses the point of these decisions. The key inquiry is not whether the claim includes express language requiring a party to perform under a contract, but rather whether the claim recites a fundamental economic practice or commercial or legal interaction. Indeed, in *buySAFE*, the Court did not rely on the fact that the claim included limitations that required parties to perform under a contract, but rather that the contractual relations in the claim qualified as fundamental economic practice. *buySAFE*, 765 F.3d at 1533–34 (explaining that the Court in *Alice* and *Bilski* "relied on the fact that the contractual relations at issue constituted 'a fundamental economic practice log prevalent in our system of commerce'"). *See also Alice*, 573 U.S. at 219–20 (concluding that use of a third party to mediate settlement risk is a ''fundamental economic practice'' and thus an abstract idea); *Bilski*, 130 S. Ct. 3218 (2010) (claims reciting hedging found patent-ineligible because "[h]edging is a fundamental economic practice long prevalent in our system of commerce"); 134 84 Fed. Reg. 52 n.13 (citing cases in which a fundamental economic practice was deemed a patent-ineligible abstract idea). If Appellant's argument were accepted, a clever draftsman could transform claims directed to fundamental economic practices or commercial interactions into statutory subject matter merely by omitting from the claim language any requirements to perform

under a contract. *See Alice* at 224 (cautioning that the "determination of patent eligibility "should not "depend simply on the draftsman's art").

We also do not find persuasive Appellant's argument that the Examiner "over-generalizes claim 20 by contending that claim 20 relates to "interactive pricing," "trading of option contracts," or "creating and fulfilling contractual relationships." Appeal Br. 7–8; Ans. 2–3. Claim 20 recites "a method of operating a pricing system" for "receiving . . . a request for a quote of [an] option contract," "identifying . . . a best price for the request," and "communicating . . . the best price to the requester." These steps involve the pricing of options contract, which is a fundamental part of the trading of an options contract, which creates a contractual relationship. The additional limitations that Appellant points to, including polling for credit preferences and volatility data and identifying the best price among requesters that satisfy a credit requirement, were considered by the Examiner and merely provide further details of the options pricing method of the claim. *See* Ans. 4–6. We, therefore, disagree that the Examiner has mischaracterized the claim.

C. Analysis under Step 2A, Prong 2, of the 2019 Guidance

Having determined that the claims recite a judicial exception, we next determine whether the claims recite "additional elements that integrate the [judicial] exception into a practical application." *See* 2019 Guidance, 84 Fed. Reg. at 54; MPEP §§ 2106.05(a)–(c), (e)–(h). We agree with the Examiner that the present claims do not recite sufficient additional elements to integrate the claimed abstract ideas into a practical application. *See* Non-Final Act. 5–6; Ans.6–12. Specifically, the additional elements include a "processor," "a plurality of workstations," a "database," and a "memory."

Appeal Br. 21–21 (Claims Appendix). We agree with the Examiner that these are merely generic computer elements suitably programmed to execute the claimed steps and are insufficient to integrate the judicial exception into a practical application. Non-Final Act. 5; Ans. 6. The "mere recitation of a generic computer cannot transform a patent-ineligible idea into a patent-eligible invention." *Alice*, 573 U.S. 223. *See* MPEP § 2106.05(a); MPEP § 2106.05(f)(2).

Appellant argues that claim 20 integrates the judicial exception into a practical application because it "relate[s] to an efficient and particular implementation to solve a problem of limiting arbitration on volatility surface trading" by "polling preferences to obtain a credit requirement, and identifying a best price for an option contract from the dynamically determined prices where a '*requester satisfies a credit requirement associated with the best price* that is indicated in the preferences." Appeal Br. 11. Appellant argues that their Specification explains that a "benefit of the[se] 'credit filters [is that they] promote[] system efficiency by displaying only bids and offers on which the user may deal.'" *Id.* As discussed previously, however, using credit information to determine if a user should enter into an option contract with different requesters is an economic practice which qualifies as an abstract idea. It also involves commercial interactions because it is part of the process of pricing and trading option contracts. And, the user of credit information in this manner does not involve an improvement to the computer itself or other technology. Because this claim limitation itself recites an abstract idea, it is not sufficient to integrate the judicial exception into a practical application.

Appellant next argues that claim 20 "recites a particular implementation to improve a trading system's efficiency by 'dynamically generating prices on the option contract to avoid holding a complete volatility surface in an associated memory of the system server.'" *Id.* As discussed above, however, generating prices on an option contract is a fundamental economic practice and involves commercial interactions. Appellant has not established that generating such prices "dynamically" provides an improvement in the computer system itself or related technology that would integrate the abstract idea into a practical application. Rather, "dynamic" generation of prices on option contracts is merely a variant of a fundamental economic activity – pricing and trading option contracts – and therefore qualifies as an abstract idea.

Appellant next argues that claim 20 is analogous to the claims found patent-eligible in *Trading Technologies* and *Core Wireless*. *See* Appeal Br. 11–12; Reply Br. 3–4. We do not find this argument persuasive. In *Trading Technologies*, the Court found the claims patent-eligible because they "require a specific, structured graphical user interface paired with a prescribed functionality directly related to the graphical user interface's structure that is addressed to and resolves a specifically identified problem in the prior state of the art." *Trading Technologies*, 675 Fed. Appx. at 1004. Similarly, in *Core Wireless*, the Court found that the claims at issue were directed to "an improved user interface for electronic devices, particularly those with small screens." *Core Wireless*, 880 F.3d at 1362–63. Here, by contrast, claim 20 is not directed to a graphical user interface but instead recites steps for improving how the pricing of option contracts is carried out. Claim 20 is therefore distinguishable from the claims at issue in those cases.

Appellant further asserts that even if claim 20 is different from the claims in *Trading Technologies* and *Core Wireless*, the underlying rationale in those cases applies here because the Court in those cases stated that the claimed invention "improved system efficiency" or created a "better and specific" system. Reply Br. 3–4. Appellant argues that here too the claims "promote system efficiency" by "recit[ing] a specific manner of limiting arbitration on volatility surface trading. *Id.* We disagree. In *Trading Technologies* and *Core Wireless*, the Court did not find the claims patent-eligible merely because the claimed system was "better" or "improved system efficiency," but rather because they recited a specific user interface that improved the functioning of the computer itself. *See Trading Technologies*, 675 Fed. Appx. at 1004; *Core Wireless*, 880 F.3d at 1362–63. Here, by contrast, the limitations of claim 20 relate to purported improvements in pricing option contracts, not to improvements to a user interface or to other functions of the computer itself.

Finally, Appellant's argument that claim 20 "does not preempt every way of providing 'a trading system for option contracts'" is unpersuasive. *See* Appeal Br. 15. We recognize that 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*, 573 U.S. at 216. However, characterizing preemption 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: "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*, 573 U.S. at 216). Although "preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Id.*

D. Analysis under Step 2B

Under Step 2B, we determine whether claim 20 includes additional elements individually or in combination that provide an inventive concept and, therefore, amount to significantly more than the exception itself. Here, Appellant has not established that claim 20 includes any such "inventive concept," or that it adds any limitations beyond the judicial exception that are not "well-understood, routine, or conventional" in the field. *See* MPEP § 2106.05(d).

We agree with the Examiner that the additional computer elements in claim 20 that go beyond the judicial exception, namely a "processor," "a plurality of workstations," a "database," and a "memory," are all well-understood, routine and conventional. *See* Ans. at 5–6. Thus, claim 20 simply appends well-understood, routine, and conventional components previously known to the industry, specified at a high level of generality, to the judicial exception, which do not amount to not significantly more than the judicial exception itself. *See* 2019 Guidance, 84 Fed. Reg. at 56.

Appellant again relies on Claim 20's limitations of (1) "polling of preferences to obtain a credit requirement," (2) identifying a best price based on a "requester satisfying a credit requirement associated with the best price that is indicated in the preferences," and (3) dynamically generating prices on the option contract to avoid holding a complete volatility surface in an associated memory of the system server," arguing that these are "non-

conventional" and "solve a problem with trading of options contract[s]." Appeal Br. 13–14. As discussed previously, however, polling preferences to obtain a credit requirement, identifying a best price among requesters who satisfy the credit requirement, and dynamically generating prices on an option contract are all fundamental economic practices and involve commercial interactions for pricing and trading options contracts. Appellant, therefore, has failed to sufficiently establish that claim 20 includes an inventive concept that goes *beyond the abstract ideas recited in the claim* and therefore that amounts to significantly more than the judicial exception itself.

Consequently, Appellant has not established that the Examiner erred in rejecting claim 20 as being directed to patent-ineligible subject matter. We likewise sustain this rejection, as well as the rejection of independent claim 1 and dependent claims 2–4 and 6–19, which Appellant does not argue separately.

DECISION

We affirm the Examiner's rejection of claims 1–4 and 6–20 under 35 U.S.C. § 101 as directed to non-statutory subject matter.

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).

CONCLUSION

In summary:

Claims Rejected	Basis	Affirmed	Reversed
1–4, 6–20	§ 101	1–4, 6–20	

AFFIRMED