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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/715,476	12/14/2012	Eileen C. Smith	11927/244	8867

13136 7590 02/01/2019

BGL/CBOE
P.O. Box 10395
Chicago, IL 60610

EXAMINER
NGUYEN, LIZ P

ART UNIT	PAPER NUMBER
3696	

MAIL DATE	DELIVERY MODE
02/01/2019	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte EILEEN C. SMITH, ANTHONY MONTESANO, EDWARD T. TILLY, MARK A. ESPOSITO, STUART J. KIPNES, and ANTHONY J. CARONE

Appeal 2018-000064
Application 13/715,476[1]
Technology Center 3600

Before HUNG H. BUI, MICHAEL M. BARRY, and PHILLIP A. BENNETT, *Administrative Patent Judges*.

Opinion for the Board filed by *Administrative Patent Judge*, PHILLIP A. BENNETT.

Dissent by *Administrative Patent Judge* HUNG H. BUI.

BENNETT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–6. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

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[1] Appellants' Brief ("Br.") identifies Chicago Board Options Exchange, Incorporated as the real party in interest. Br. 2.

CLAIMED SUBJECT MATTER

The claims are directed to a hybrid trading system for concurrently trading securities or derivatives through both electronic and open-outcry trading mechanisms. Spec. ¶ 2. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A method of trading derivatives in a hybrid exchange system comprising:
>
> collecting orders, via a communication network and order routing system, for derivatives and placing them in an electronic book database;
>
> identifying at an electronic trade engine a new quote from a first in-crowd market participant, wherein one of a bid or an offer price in the new quote matches a respective price in an order in the electronic book database from a public customer;
>
> removing at least a portion of the order in the electronic book database, delaying automatic execution of the new quote and the order, and starting a timer;
>
> reporting, via the communication network and an electronic reporting system, a market quote indicative of execution of the at least a portion of the order while delaying automatic execution;
>
> receiving at the electronic trade engine a second quote from a second in-crowd market participant after receiving the new quote from the first in-crowd market participant and before an expiration of the timer, wherein the second quote matches the respective price of the public customer order in the electronic book database; and
>
> allocating the order between the first and second in-crowd market participants at the electronic trade engine, wherein the order is not executed until expiration of the timer.

Br. 7 (Claims Appendix).

REJECTION

Claims 1–6 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 3–5.

ANALYSIS

Standard for Patent Eligibility

In issues involving subject matter eligibility, our inquiry focuses on whether the claims satisfy the two-step test set forth by the Supreme Court in *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014). The Supreme Court instructs us to "first determine whether the claims at issue are directed to a patent-ineligible concept," *id.* at 216–18, and, in this case, the inquiry centers on whether the claims are directed to an abstract idea. If the initial threshold is met, we then move to the second step, in which we "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Id.* at 217 (*quoting Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 79, 78 (2012)). The Supreme Court describes the second step as a 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.* (quoting *Mayo*, 566 U.S. at 72–73).

The USPTO 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 interactions 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 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.

Examiner's Findings and Conclusion

In the first step of the *Alice* inquiry, the Examiner determines the claims are directed to "the abstract idea of comparing new and stored information and using rules to identify options" because the claims recite steps such as "collecting, identifying, and reporting," embodying such a concept. Final Act. 3. The Examiner further determines the claims are directed to "an abstract idea of trading derivatives in a hybrid exchange system which is a concept within the realm of 'fundamental economic practices' because the concept relates to the economy and commerce, such as agreements between people in the form of contracts, legal obligations, and business relations." Ans. 5.

At *Alice* step 2, the Examiner determines the claims do not recite elements sufficient to amount to significantly more than the abstract idea because "the computer as recited is a generic computer component that performs functions . . . [which] are generic computer functions . . . that are well-understood, routine, and conventional activities previously known to the industry." Final Act. 4. The Examiner further finds that "[a]lthough a computer system acts as the intermediary in the claimed method, the claims do no more than implement the abstract idea on a generic computer." Ans. 8. The Examiner further analyzes each of the limitations individually and as an ordered combination, and determines that they do not amount to significantly more because the derivative trading system "is stated at a high level of generality" and that in performing the various recited functions, "[t]he computer is employed for its most basic functions and does not impose meaningful limits on the scope of the claims." Ans. 9.

Appellants' Contentions

Appellants argue their claims "stand apart from cases holding claims were patent ineligible abstract ideas 'because they do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet.'" Br. 4 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1264 (Fed. Cir. 2014)). Appellants further contend the claims provide a technological improvement because they allow for in-crowd market participant input in automated trade processing that would ordinarily bypass such participants. Br. 4. Appellants assert that this technological improvement is provided through the "removal of a portion of an order from a database while delaying automated execution and communicating via a network that the portion has

been traded to permit another in-crowd market participant to submit quotes during the delay." Br. 4. Appellants further argue the Examiner's characterization of the abstract idea is overly broad because it focuses narrowly on certain claim limitations but not the claims as a whole. Br. 5.

Appellants also challenge the Examiner's step 2 determination. Appellants argue "the claims are directed to solving technical problems first encountered when trying to concurrently trade securities through both an electronic system and open-outcry (i.e., trading in the pits)." Br. 6. Appellants challenge the Examiner's finding that the claimed hybrid trading system is a general purpose computer, arguing that "the computer components of the hybrid trading system are designed, configured, and implemented in order to facilitate the complex transactions of the financial exchange . . . [and] include both the specialized hardware and the proprietary exchange software." Br. 6.

Appellants also argue their claims compare favorably to those found eligible in *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016). In particular, Appellants argue "[t]he process recited in claim 1 uses a combination of specific rules that provides for the integration of floor-based trading and screen-based trading that were previously separate." Br. 7. According to Appellants, "it is the combination of rules that renders information into a specific format that is then used and applied to create desired results of integrating floor-based trading in screen-based trading." *Id.*

Our Review

Applying the guidance set forth in the Memorandum, we conclude the Examiner has erred in rejecting the claims as being directed to patent-

ineligible subject matter. The Memorandum instructs us first to determine whether any judicial exception to patent eligibility is recited in the claim. The guidance identifies three judicially-excepted groupings: (1) mathematical concepts, (2) certain methods of organizing human behavior such as fundamental economic practices, and (3) mental processes. We focus here on the second grouping—certain methods of organizing human behavior such as fundamental economic practices.

Claim 1 recites the following limitations: (1) "[a] method of trading derivatives," (2) "collecting orders . . . for derivatives," (3) "identifying . . . a new quote from a first in-crowd market participant, wherein one of a bid or an offer price in the new quote matches a respective price in an order in the electronic book database from a public customer," (4) "removing at least a portion of the order," (5) "reporting . . . a market quote indicative of execution of the at least a portion of the order," (6) "receiving . . . a second quote from a second in-crowd market participant after receiving the new quote from the first in-crowd market participant." These limitations, under their broadest reasonable interpretation, recite the fundamental economic practice of derivative trading because the limitations all recite the operations that would ordinarily take place in a derivatives trading environment.

For example, collecting orders for derivatives, as recited in limitation (2), is an activity which would take place in any derivatives trading market. Similarly, identifying new quotes from market participants and matching those to orders, as recited in limitation (3), is also a characteristic of a long-known derivative trading market. Also, when orders are filled and trades are conducted, they are removed and reported to the market as recited in limitations (4) and (5). Thus, like the concept of intermediated settlement in

Alice, and the concept of hedging in *Bilski*, the concept of trading derivatives recited in Appellants' claims "is a fundamental economic practice long prevalent in our system of commerce." *Alice*, 573 U.S. 216 (citations and internal quotation marks omitted). Accordingly, we conclude the claims recite a judicial exception of a fundamental economic practice.

Having determined that the claims recite a judicial exception, our analysis under the Memorandum turns now to determining whether there are "additional elements that integrate the judicial exception into a practical application." S*ee* MPEP § 2106.05(a)–(c), (e)–(h). Appellants' claim 1 recites various computer-related limitations, including a "hybrid exchange system," a "communication network and order routing system," an "electronic trade engine," an "electronic book database," and an "electronic reporting system." Although these computer-related limitations are not wholly generic in nature and are specific to electronic derivatives trading, they are described at a high level in the Specification without any meaningful detail about their structure or configuration. As such, we do not find the computer-related limitations are sufficient to integrate the judicial exception into a practical application.

However, claim 1 also recites additional limitations which focus on addressing problems arising in the context of a hybrid derivatives trading system in which trades are made both electronically and on a trading floor (i.e., "in the pits"). These limitations include: (1) "delaying automatic execution of the new quote and the order, and starting a timer," (2) while "delaying automatic execution" of the order, and "before expiration of the timer," receiving a second matching quote "wherein the second quote matches the respective price of the public customer order," and (3)

"allocating the order between the first and second in-crowd market participants at the electronic trade engine, wherein the order is not executed until expiration of the timer."

We conclude that these limitations integrate the recited judicial exception of derivative trading into a practical application. In particular, these additional elements limit the conventional practice of automatically executing matching market orders by reciting a specific timing mechanism in which the execution of a matching order is delayed for a specific period of time. This delay allows for other matching orders to be received from the in-market participants so that the order can be allocated between the first and second and executed upon expiration of the delay period.

As explained in the Specification, "[t]he purpose of the temporary restraint on execution is to allow a preset grace period within which other in-crowd market participant quotes or orders [may be] submitted at the best price represented by the new in-crowd market participant quote." Spec. ¶ 55. The Specification further explains "[a]dvantages of temporarily restraining this type of trade include[] encouraging more in-crowd market participants to quote at the best price and the removal of any communication or computer hardware advantage among the in-crowd market participants." *Id.* Thus, the use of the claimed timing mechanisms and the associated temporary restraints on execution of trades provide a specific technological improvement over prior derivatives trading systems.

The dissent finds these features do not amount to a technological improvement because delays in market order execution are inherent in any market trade, and therefore conventional. (Dissent 16.) The claimed timing mechanisms are not so trivial. The use of the recited "timer" does not occur

with each and every trade. Rather, it is implemented in specific circumstances in a specific trading environment, namely when a matching market order is received from an *in-crowd* market participant in a *hybrid* trading system. As the Specification explains, the problem of inequitable access to information arises only in the context of hybrid trading platforms where trades occur both "in the pits" and electronically. Spec. ¶ 55. Thus, like the claim and *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014), Appellants' claims "overcome a problem specifically arising in the realm of computer networks." *Id.* at 1257. Accordingly, we conclude claim 1 is integrated into a practical application, and under the guidance provided in the Memorandum, the claim is eligible because it is not *directed to* the recited judicial exception.[2]

DECISION

We reverse the Examiner's rejection of claims 1–6.

REVERSED

[2] Because we have determined the claim is not directed to the recited judicial exception, we need not reach the question of whether the claim provides an inventive concept under the second step of the *Alice* inquiry.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte EILEEN C. SMITH, ANTHONY MONTESANO, EDWARD T. TILLY, MARK A. ESPOSITO, STUART J. KIPNES, and ANTHONY J. CARONE

Appeal 2018-000064
Application 13/715,476[3]
Technology Center 3600

Before HUNG H. BUI, MICHAEL M. BARRY, and PHILLIP A. BENNETT, *Administrative Patent Judges*.

BUI, *Administrative Patent Judge*.

I respectfully disagree with the majority's reversal of claims 1–6 under 35 U.S.C. § 101.

Based on the Federal Circuit precedent post *Alice* and the newly published 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 ("PTO § 101 Memorandum") that governs all patent-eligibility analysis under *Alice* and § 101 effective as of January 7, 2019, I agree with the majority's conclusion that the claims recite "the fundamental economic practice of derivative trading because the limitations all recite the operations that would ordinarily take place in a derivatives trading environment"— a

[3] Appellants' Brief ("Br.") identifies Chicago Board Options Exchange, Incorporated as the real party in interest. Br. 2.

subject matter that falls within the three types of abstract ideas identified by the PTO § 101 Memorandum, 84 Fed. Reg. at 54–55. Dec. 8. Such activities are squarely within the realm of abstract ideas, like (1) the risk hedging in *Bilski v. Kappos*, 561 U.S. 593 (2010); (2) the intermediated settlement in *Alice*, 573 U.S. at 220; (3) verifying credit card transactions in *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed. Cir. 2011); (4) guaranteeing transactions in *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1354 (Fed. Cir. 2014); (5) distributing products over the Internet in *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014); (6) determining a price of a product offered to a purchasing organization in *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306 (Fed. Cir. 2015); and (7) pricing a product for sale in *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015). Trading derivatives in an exchange system is a building block of a market economy and, like risk hedging and intermediated settlement, is an "abstract idea" beyond the scope of § 101. *See Alice*, 573 U.S. at 220.

However, I respectfully disagree with the majority's conclusion that the additional elements recited in Appellants' claims actually integrate the judicial exception of derivative trading into a practical application. *See* PTO § 101 Memorandum, 84 Fed. Reg. at 54–55 ("Prong Two"). For example, the majority explains that additional elements that integrate the recited judicial exception into a practical application include: (1) "delaying automatic execution of the new quote and the order, and starting a timer," (2) while "delaying automatic execution" of the order, and "before expiration of the timer," receiving a second matching quote "wherein the second quote matches the respective price of the public customer order," and

(3) "allocating the order between the first and second in-crowd market participants at the electronic trade engine, wherein the order is not executed until expiration of the timer." Dec. 9.

According to the PTO § 101 Memorandum, even if the claims recite a fundamental economic practice, these claims are still not "directed to" a judicial exception and, thus, are "patent-eligible" if "the claim as a whole integrates the recited judicial exception into a practical application of that [judicial] exception." 84 Fed. Reg. at 53. "Integration into a practical application" requires an additional element or a combination of additional elements in the claim to apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the exception. 84 Fed. Reg. at 53.

For example, limitations that are indicative of "integration into a practical application" include:

1) Improvements to the functioning of a computer, or to any other technology or technical field — *see* MPEP § 2106.05(a);
2) Applying the judicial exception with, or by use of, a particular machine — *see* MPEP § 2106.05(b);
3) Effecting a transformation or reduction of a particular article to a different state or thing — *see* MPEP § 2106.05(c); and
4) Applying or using the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception — *see* MPEP § 2106.05(e).

In contrast, limitations that are **not** indicative of "integration into a practical application" include:

> 1) Adding the words "apply it" (or an equivalent) with the judicial exception, or mere instructions to implement an abstract idea on a computer, or merely uses a computer as a tool to perform an abstract idea — *see* MPEP § 2106.05(f);
> 2) Adding insignificant extra-solution activity to the judicial exception — *see* MPEP § 2106.05(g); and
> 3) Generally linking the use of the judicial exception to a particular technological environment or field of use — *see* MPEP § 2106.05(h).

See PTO § 101 Memorandum, 84 Fed. Reg. at 54–55 ("Prong Two").

For business-centric inventions such as Appellants' invention involving derivative trading, the Federal Circuit's precedential decisions in (1) *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014) and (2) *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016) are more instructive. For example, the Federal Circuit found *DDR's* claims are patent-eligible under § 101 because *DDR's* claims (1) do not merely recite "the performance of some business practice known from the pre-Internet world" previously disclosed in *Bilski* and *Alice*, but instead (2) provide a technical solution to a technical problem unique to the Internet, *i.e.*, a "solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." *DDR*, 773 F.3d at 1257. Likewise, the Federal Circuit also found *Amdocs*' claims patent-eligible under § 101 because like *DDR*, *Amdocs*' claims "entail[] an unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases)" and

"improve the performance of the system itself." *Amdocs*, 841 F.3d at 1300, 1302. According to MPEP § 2106.05(a), both the Federal Circuit's precedential decisions in *DDR* and *Amdocs* are incorporated into the "integration into a practical application" prong of the PTO § 101 Memorandum. For example, the "integration into a practical application" prong also requires consideration of whether the claims purport to provide "a technical solution to a technical problem." *See* MPEP § 2106.05(a).

I do not agree with the majority that the "use of the claimed timing mechanisms and the associated temporary restraints on execution of trades" "provide[s] a specific improvement over prior derivatives trading systems" and "limit[s] the conventional practice of automatically executing matching market orders." Instead, the delay of matching market orders, whether 10 minutes, 10 seconds, or even 1 millisecond, is a necessary requirement for both the conventional trading practice or Appellants' derivative trading practice of automatically executing matching market orders, whether on a trading floor (i.e., "in the pits") of New York Stock Exchange (NYSE) or NASDAQ, or electronically via a brokerage firm such as Charles Schwab, TD Ameritrade, or Fidelity. As one skilled in the art would appreciate, electronic trading has already replaced the trading floor of human brokers in order to minimize the delay of executing matching market orders of securities or derivatives and thereby maximize the price of the trade. These timing features themselves are not technical in nature and do not provide any "technical solution to a technical problem" as contemplated by the Federal Circuit in *DDR* and *Amdocs*. *See* MPEP § 2106.05(a).

Based on these findings and the fundamental of trading of securities or derivatives, I would conclude that Appellants' claims are not "integrated

into a practical application" and, as such, are not patent-eligible under § 101 and the PTO § 101 Memorandum.