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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* TOMAS BOK and DAVID CUSHING

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Appeal 2018-003795  
Application 13/668,566<sup>1</sup>  
Technology Center 3600

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Before JOHN A. JEFFERY, JOHN P. PINKERTON, and  
JASON J. CHUNG, *Administrative Patent Judges*.

CHUNG, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the Final Rejection of claims 1–8. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

INVENTION

The invention relates to executing an order to buy or sell a specified number of units of a certain item. Spec. ¶ 1. Claim 1 is illustrative of the invention and is reproduced below:

1. A system for continuous, automatic execution of electronic orders to trade securities, comprising:  
a data processing device comprising a processor configured to receive via an electronic communication network,

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<sup>1</sup> According to Appellants, ITG Software Solutions, Inc. is the real party in interest. App. Br. 2.

an electronic order to trade X shares of a security, to create, automatically without human intervention, an initial set of electronic orders to trade Y shares of the security, wherein Y is less than or equal to X, to electronically submit said initial set of electronic orders to an electronic trading venue, and at a plurality of selected points in time after the initial set of orders was submitted, automatically without human intervention:

to determine the total number out of the X shares that have been traded,

to determine an urgency score, wherein the urgency score is based, at least in part, on said total number of shares traded by said selected point in time,

to generate a new electronic order specifying a quantity and a target price or modify an existing electronic order, wherein the target price or modification is determined based, at least in part, on the urgency score, and

to submit, via the communication network to the electronic trading venue, the new electronic order or modified order.

#### REJECTIONS AT ISSUE

Claims 1–8 stand rejected under 35 U.S.C. § 101 as being directed to patent ineligible subject matter. Final Act. 3–6.

Claims 1–8 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Final Act. 2–3.

Claims 1, 7, and 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Merrin (US 8,055,576 B2; divisional priority Apr. 12, 2001) and Mahanti (US 2002/0052824 A1; published May 2, 2002). Final Act. 6–10.

Claims 2–6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Merrin, Mahanti, and Madhavan (US 2003/0233306 A1; filed June 12, 2002). Final Act. 11–13.

## ANALYSIS

### *I. Claims 1–8 Rejected Under 35 U.S.C. § 101*

#### *A. Legal Principles*

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: “[I]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).

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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 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, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. (15 How.) 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 187; *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 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 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.

*B. The Examiner's Conclusions and Appellants' Arguments*

The Examiner concludes the present claims are directed to fundamental economic practices. Final Act. 4; Ans. 5. The Examiner also determines the present claims do not amount to significantly more than an abstract idea because the Examiner finds the abstract idea is implemented on generic components that are well-understood, routine, and conventional previously known to the industry. Final Act. 5; Ans. 3.

Appellants argue, similar to *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1308–14 (Fed. Cir. 2016), and *Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc.*, 880 F.3d 1356 (Fed. Cir. 2018), the present claims are directed to an improvement to computer functionality by monitoring and performing automatically, without human intervention, electronic trading. App. Br. 7–13 (citing Spec. ¶¶ 5–7, 21–23, 35); Reply Br. 2–3.

Appellants argue there is no risk that the present claims would preempt anyone from performing the purported abstract idea. App. Br. 13. Appellants also argue, similar to the case in *Diamond v. Diehr*, 450 U.S. 175 (1981), the present claims are significantly more than any abstract idea because they improved a technological process. App. Br. 14. Appellants further argue, similar to *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014), the present claims are necessarily rooted in electronic trading technology that overcomes a problem specifically arising in the realm of electronic trading technology. App. Br. 14–15. We disagree with Appellants.

*C. Discussion*

*1. Step 2A, Prong 1 (Alice Step 1)*

The present claims, as a whole, are directed to monitoring and performing automatically, without human intervention, electronic trading. Thus, we determine these claims are directed to fundamental economic practices. According to the Memorandum, fundamental economic practices fall into the category of certain methods of organizing human activity, which the Memorandum explains is one category of abstract ideas. *See* Memorandum.

Appellants do not make any arguments pertaining to step 2A, prong 1. Because the present claims recite an abstract idea, we proceed to prong 2.

*2. Step 2A, Prong 2 (Alice Step 1)*

The present claims do not integrate the abstract idea into a practical application because they do not impose any meaningful limits on practicing the abstract idea. In particular, we disagree with Appellants' argument that the present claims recite an improvement to computer functionality by monitoring and performing automatically, without human intervention, electronic trading. App. Br. 7–13; Reply Br. 2–3.

Unlike the claims of *McRO*, the present claims are not directed to rules for lip sync and facial expression animation. Also unlike the claims of *Enfish*, the present claims are not directed to a specific improvement to the way computers operate, embodied in the self-referential table. And unlike the claims of *Core Wireless*, the present claims are not directed to graphical user interfaces for mobile devices that display commonly accessed data on a main menu. Instead, the present claims are directed to an abstract idea as discussed *supra* in § I.C.1.—not a technological improvement. The

Specification indicates the additional elements recited in the present claims are merely tools used to implement the abstract idea. Spec. ¶ 54 (“data processing device 602 (e.g., a general purpose computer . . . or other data processing device)”).

Appellants do not make any other arguments pertaining to step 2A, prong 2. Because the present claims are directed to an abstract idea, we proceed to Step 2B.

3. *Step 2B (Alice Step 2)*

We agree with the Examiner’s determination that the abstract idea is implemented on generic components that are well-understood, routine, and conventional previously known to the industry. Final Act. 5; Ans. 3. Also, the Specification supports the determination that “data processing device” is a generic component. Spec. ¶ 54 (“data processing device 602 (e.g., a general purpose computer . . . or other data processing device)”).

Appellants’ Specification indicates these elements were well-understood, routine, and conventional components previously known to the industry because it describes them at a high level of generality and in a manner that indicates that they are sufficiently well-known.

Additionally, we disagree with Appellants’ argument that the present claims are patent eligible because they do not preempt any abstract idea (App. Br. 13); while preemption may denote patent ineligibility, its absence does not demonstrate patent eligibility. *See FairWarning, IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1098 (Fed. Cir. 2016). For claims covering a patent-ineligible concept, preemption concerns “are fully addressed and made moot” by an analysis under the *Mayo/Alice* framework. *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015).

We disagree with Appellants' argument that the present claims are significantly more than any abstract idea because they improved a technological process. App. Br. 14. And we disagree with Appellants' argument that the present claims are necessarily rooted in electronic trading technology that overcomes a problem specifically arising in the realm of electronic trading technology. *Id.* at 14–15. Instead, the present claims are directed to an abstract idea using additional generic elements as tools to implement the abstract idea as discussed *supra* in §§ I.C.1., I.C.2.

Appellants do not argue claims 2–8 separately with particularity, but assert the rejections of those claims should be withdrawn for at least the same reasons as argued for independent claim 1. App. Br. 5–16. Accordingly, we sustain the Examiner's rejection of: (1) independent claim 1; and (2) dependent claims 2–8 under 35 U.S.C. § 101.

*II. Claims 1–8 Rejected Under 35 U.S.C. § 112, first paragraph*

The Examiner finds that claims 1–8 fail to comply with the written description requirement because the Specification lacks written description support for the limitation “without human intervention” recited in claim 1. Final Act. 2–3.

Appellants argue a dictionary definition and paragraphs 5, 31, and 54 provide sufficient support to meet the written description requirement. App. Br. 17–18 (citing Spec. ¶¶ 5, 31, 54). We disagree with Appellants.

Although the Specification provides support for the limitation “automatically” (Spec. ¶ 6), we conclude it does not provide adequate support for the limitation “without human intervention.” Appellants' Specification and dictionary definition are insufficient to show possession. Moreover, Appellants added the limitation “without human intervention”

recited in claim 1 in the Amendment filed on January 11, 2017—i.e., after the filing date of November 5, 2012. At best, Appellants' Specification and dictionary definition render "without human intervention" obvious, which is insufficient to show possession. That is, it is well settled that a description that merely renders the invention obvious does not satisfy the written description requirement. *See Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1352 (Fed. Cir. 2010) (en banc). As such, Appellants did not have possession of the limitation "without human intervention" recited in claim 1 at the time of filing the application.

Appellants do not argue claims 2–8 separately with particularity, but assert the rejections of those claims should be withdrawn for at least the same reasons as argued for independent claim 1. App. Br. 17–18. Accordingly, we sustain the Examiner's rejection of: (1) independent claim 1; and (2) dependent claims 2–8 under 35 U.S.C. § 112, first paragraph.

### *III. Claims 1–8 Rejected Under 35 U.S.C. § 103*

The Examiner finds Merrin teaches a trader wishing to purchase 1,000,000 shares of IBM stock places an order for 300,000 shares with one broker and places an order for the remaining shares with other brokers, which the Examiner maps to the limitation "to create, automatically without human intervention, an initial set of electronic order to trade Y shares of the security, wherein Y is less than or equal to X" recited in claim 1. Final Act. 7–8 (citing Merrin, 9:29–53, 2:39–53, 5:47–56, 11:25–35); Ans. 14–18.

Appellants argue Merrin fails to teach the aforementioned limitation because Merrin teaches *manually* inputting several trades of IBM stock such that the aggregate of the IBM stock trades add up to 1,000,000 shares. App. Br. 20–21. We agree with Appellants.

Merrin teaches a trader wishing to purchase 1,000,000 shares of IBM stock manually places an order for 300,000 shares with one broker and places an order for the remaining shares with other brokers. Final Act. 7–8 (citing Merrin, 9:29–53). However, claim 1 recites “to create, automatically *without human intervention, an initial set of electronic order to trade Y shares of the security, wherein Y is less than or equal to X*” (emphasis added). Put another way, we interpret claim 1 as the initial order of Y shares (i.e., in Merrin, Y is 300,000 shares of IBM stock) must be partitioned from the X shares (i.e., in Merrin, X is 1,000,000 shares of IBM stock) “automatically, *without human intervention*” (emphasis added), which Merrin fails to teach.

Accordingly, we do not sustain the Examiner’s rejection of: (1) independent claim 1; and (2) dependent claims 2–8 under 35 U.S.C. § 103. We have only considered those arguments that Appellants actually raised in the Briefs. Arguments Appellants could have made, but chose not to make, in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

## DECISION

We affirm the Examiner’s decision rejecting claims 1–8 under 35 U.S.C. § 101.

We affirm the Examiner’s decision rejecting claims 1–8 under 35 U.S.C. § 112, first paragraph.

We reverse the Examiner’s decision rejecting claims 1–8 under 35 U.S.C. § 103.

Appeal 2018-003795  
Application 13/668,566

Because we affirm on at least one ground of rejection with respect to each claim on appeal, we affirm the Examiner's decision to reject claims 1–8. *See* 37 C.F.R. § 41.50(a)(1).

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