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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PAUL RADLE, TORSTEN RAUSCH, and ACHIM BALASCH

Appeal 2017-010920¹
Application 12/029,143²
Technology Center 3600

Before NINA L. MEDLOCK, BRADLEY B. BAYAT, and
TARA L. HUTCHINGS, *Administrative Patent Judges*.

BAYAT, *Administrative Patent Judge*.

DECISION ON APPEAL

Paul Radle et al. (Appellants) appeal under 35 U.S.C. § 134(a) from the Examiner’s final decision rejecting claims 1–6, 8–18, 20, and 21 under 35 U.S.C. § 101 as directed to a judicial exception without significantly more. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ Our Decision references Appellants’ Appeal Brief (“Br.,” filed Feb. 1, 2017), the Examiner’s Answer (“Ans.,” mailed May 4, 2017) and Final Office Action (“Final Act.,” mailed June 8, 2016).

² According to the Appellants, the real party in interest is “DEUTSCHE BORSE AG.” Br. 2.

STATEMENT OF THE CASE

Claimed Subject Matter

“The present invention generally relates to electronic trading systems for financial products and, in particular, relates to the calculation and visualization of stop order volumes.” Spec. ¶ 1.

Independent claim 1, reproduced below with added formatting, is illustrative of the subject matter on appeal.

1. A computer-implemented method of visualizing trading data using a graphical user interface of a computer system, the method comprising:
 - displaying by a graphical user interface of a display in a computing device a price range comprising graduated price levels for a tradable item;
 - receiving by a processor of a computing device data of at least one stop order for the tradable item;
 - evaluating by a processor the data of the at least one stop order to determine price levels associated with each of the at least one stop order; and
 - displaying by a graphical user interface a graphical representation of the at least one stop order in the price range according to the evaluated price levels, wherein said displaying step comprises for each displayed price level:
 - determining an accumulated executable order volume of stop orders;
 - determining a stop volume class into which the determined accumulated executable order volume falls;
 - and
 - displaying a graphical representation corresponding to the determined stop volume class.

Br. 12, Claims App.

ANALYSIS

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. But 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, first described in *Mayo* and further clarified in *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). According to 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, 192 (1981)); “tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 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.* (internal citation omitted) (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.* (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.*

Under the first step of the *Alice* framework, the Examiner determines that “claim 1 is directed to an abstract idea of visualizing trading data using a graphical representation . . . which can be performed mentally and is an idea of itself.” Ans. 2.

Appellants argue³ the claims do not recite “a mental process such as comparing or categorizing information that can be performed in the human mind, or by a human using a pen and paper.” Br. 6–7. Relying on *Trading Technologies*,⁴ Appellants argue that “[s]imilarly, the claims at issue in this appeal improve trading by allowing traders to efficiently assess stop orders.” *Id.*

The Examiner responds that unlike claim 1 in *Trading Technologies*, here, “there is no improvement to previous GUIs by dynamically relocating obscured textual information of an underlying window to become automatically viewable to the user. The claimed invention does not offer any improvement to the GUI. It simply uses the GUI to display data.” Ans. 3. We agree with the Examiner.

Judicial Exception

Representative claim 1 recites a “method of visualizing trading data” comprising: (1) “displaying . . . a price range comprising graduated price levels for a tradable item,” (2) “receiving . . . at least one stop order for the tradable item,” (3) “evaluating . . . the at least one stop order to determine

³ Appellants argue all independent claims together as a group. *See* Br. 5–11. We select claim 1 as the representative claim for the group. Thus, claims 18 and 21 stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

⁴ *Trading Technologies International Inc. v. CQG, Inc.*, 675 F. App’x 1001 (Fed. Cir. 2017) (hereinafter “*Trading Technologies*”).

price levels associated with each of the at least one stop order,” (4) “displaying . . . a graphical representation of the at least one stop order in the price range according to the evaluated price levels, wherein said displaying step comprises for each displayed price level: (a) determining an accumulated executable order volume of stop orders, (b) determining a stop volume class into which the determined accumulated executable order volume falls, and (c) displaying a graphical representation corresponding to the determined accumulated executable stop volume class.” Br. 12 (Claims App.). These limitations, under their broadest reasonable interpretation, recite calculating and visualizing trading data for trading securities because the limitations all recite the operations that would ordinarily take place in assessing stop orders in trading of financial securities.

For example, “displaying . . . a price range comprising graduated price levels for a tradable item,” as recited in step (1), is an activity which would take place whenever one is trading securities. Similarly, “receiving . . . at least one stop order for the tradable item,” as recited in step (2), is an instruction to buy or sell a tradable item (e.g., stock) once the price of the tradable item reaches a specified price. Also, “evaluating . . . the at least one stop order to determine price levels associated with each of the at least one stop order,” as recited in step (3), is a comparison of the stop order in step (2) to assess corresponding price levels. “Determining an accumulated executable order volume of stop orders” and “determining a stop volume class into which the determined accumulated executable order volume falls, as recited in steps (a) and (b), are calculations that represent characteristics of tradable units and an important indicator about the market’s activity and liquidity. And, “displaying a graphical representation corresponding to the

determined accumulated executable stop volume class,” as recited in step (c), is a visual depiction used by a trader to measure the relative worth of a market move. Calculating and visualizing trading data based on instructions for buying or selling securities, is an economic act for facilitating a financial transaction. Thus, like the concept of intermediated settlement in *Alice*, and the concept of hedging in *Bilski*, the concept of calculating and visualizing trading data for trading securities recited in Appellants’ claims “is a fundamental economic practice long prevalent in our system of commerce.” *Alice*, 573 U.S. at 216 (citations and internal quotation marks omitted). Accordingly, we conclude the claims recite a fundamental economic practice, which is one of certain methods of organizing human activity identified in the Guidance,⁵ and thus an abstract idea. *See* Guidance 52.

Furthermore, the “receiving” of data recited in step (2) is merely insignificant extra-solution activity in the form of data gathering. *See In re Bilski*, 545 F.3d 943, 963 (Fed. Cir. 2008) (*en banc*), *aff’d sub nom Bilski v. Kappos*, 561 U.S. 593 (2010) (characterizing data gathering steps as insignificant extra-solution activity). The “displaying” of price data and a graphical representation under steps (1) and (4) are merely output steps, and also insignificant extra-solution activity. *See Bilski, Id.* at 610–11. Besides a processor and a graphical user interface, claim 1 encompasses only data gathering and output steps, as well as steps that can be performed mentally. The remaining “evaluating” and “determining” steps (3), (4a) and (4b), which are calculations that can be performed with a pen and paper, are

⁵ USPTO recently published revised guidance on the application of § 101. *See 2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Guidance”).

mental processes under the Guidance, and thus, an abstract idea. *See* Guidance 52.

Practical Application

Under the Guidance, if a claim recites a judicial exception (i.e., mental processes), it must then be analyzed to determine whether the recited judicial exception is integrated into a practical application of that exception, e.g., an additional element reflects an improvement in the functioning of a computer, or an improvement to other technology or technical field.

In that regard, Appellants' reliance on *Trading Technologies* is unavailing (Br. 7 (citing Spec. ¶¶ 5, 28)) because claim 1, in light of the cited paragraphs in the Specification, does not support an improvement to the claimed graphical user interface. In *Trading Technologies*, the Federal Circuit accepted the lower court's holding, that the claims provided "an inventive concept that allows traders to more efficiently and accurately place trades using this electronic trading system." 675 F. App'x at 1004. "The court distinguished this system from the routine or conventional use of computers or the Internet, and concluded that the specific structure and concordant functionality of the graphical user interface are removed from abstract ideas, as compared to conventional computer implementations of known procedures." *Id.* Thus, the distinguishing feature for the claims in *Trading Technologies* was an advance in efficiency provided by an improved graphical user interface as compared to other computer processes.

In contrast to *Trading Technologies*, no such distinguishing features are recited in claim 1, and the method before us does not concern an improvement to a technology, because although the method is performed using a processor and a graphical user interface, this purported improvement

reflects how visualizing trading data can be improved utilizing that technology, which is not an improvement to the technology itself. *See* MPEP § 2106.05(a). The method of claim 1 merely implements a purported improvement on a generic processor of a computing device and graphical user interface of a display in a computing device. *See* Spec. ¶¶ 102–104. This is indistinguishable from merely providing instructions to apply the method on a general purpose computer. *See* MPEP § 2106.05(f). All the claim essentially does is tie the use of computers, all of which display and gather information and conduct calculations, to a particular trading environment. *See id.* § 2106.05(h). Because these steps involve general purpose computer operations, the method does not represent a “particular machine,” or transform a physical object. *See* MPEP § 2106.05(b)–(c). Each of the steps as recited may be performed by a different processor and graphical user interface. The claimed method thus does not “integrate the abstract idea into a practical application.”

Appellants do not direct our attention to anything in the Specification to indicate that the invention provides an improvement in the processor’s technical functionality, or offer any technical reasoning that the computer implementation improves the functioning of a processor of a computing device or a graphical user interface of a display in a computing device. Paragraphs 5 and 28 of the Specification, on which Appellants rely, do not reflect an improvement to a graphic user interface of a display in a computing device, but rather, an alleged improvement to the abstract idea. As such, the claims do not “apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that

the claim[s are] more than a drafting effort designed to monopolize the judicial exception.” Guidance 54.

We disagree that claim 1 here is analogous to claims 1 and 4 in Example 23 of the USPTO’s “July 2015 Update Appendix 1: Examples.”⁶ Br. 7, 9. Instead, we agree with the Examiner (Ans. 6–9) that no such parallel exists. For example, claim 1 of Example 23 “address[es] a problem with overlapping windows within a graphical user interface.” July 2015 Update p. 9. To solve this problem, Example 23’s claim 1 recites, in part, “constantly monitoring the boundaries of the first window and the second window [in a graphical user interface] to detect an overlap condition where the second window overlaps the first window such that the textual information in the first window is obscured from a user’s view,” “automatically relocating the textual information . . . to an unobscured portion of the first window in a second format during an overlap condition so that the textual information is viewable,” and “automatically returning the relocated textual information . . . to the first format within the first window when the overlap condition no longer exists.” *Id.* at 8. In this way, Example 23’s claim 1 is not directed to a judicial exception, but rather to addressing a problem with overlapping windows within a graphical user interface. *Id.* at 9. The claimed solution there is “necessarily rooted in computer technology to overcome a problem specifically arising in graphical user interfaces.” *Id.*

⁶ <https://www.uspto.gov/sites/default/files/documents/ieg-july-2015-app1.pdf>.

Contrary to Appellants’ arguments (Br. 9–11), we also find no parallel between claim 1 and the patent-eligible claims in *McRO*⁷ and *Amdocs*.⁸ In *McRO*, the Federal Circuit addressed claims directed to “[a] method for automatically animating lip synchronization and facial expression of three-dimensional characters” *McRO*, 837 F.3d at 1307. The court reviewed the specification of the patent at issue and found that, rather than invoking the computer merely as a tool, “[c]laim 1 of the [asserted] patent is focused on a specific asserted improvement in computer animation.” *Id.* at 1314. The court found that the plain focus of the claim was on an improvement to computer functionality itself, not on economic or other tasks for which a computer is used in its ordinary capacity. Unlike *McRO*, which focused on a specific means or method that improved the relevant technology, as discussed, claim 1 here is directed to a result or effect that itself is the abstract idea by merely invoking generic processes and machinery. Thus, the focus here is not on improving any technology, but on using generic computer operations, in which a computer is used in its ordinary capacity, for visualizing trading data using a generic graphic user interface of a computer system.

In *Amdocs*, the court held that “[claim 1] is eligible under step two because it contains a sufficient ‘inventive concept.’” *Amdocs*, 841 F.3d at 1300. The claim at issue recited “computer code for using the accounting information with which the first network accounting record is correlated to

⁷ *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016) (hereinafter “*McRO*”).

⁸ *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016) (hereinafter “*Amdocs*”).

enhance the first network accounting record.” *Id.* The court explained that the “claim entails an unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows [that] previously required massive databases).” *Id.* The court noted that, although the solution requires generic computer components, “the claim’s enhancing limitation necessarily requires that these generic components operate in an unconventional manner to achieve an improvement in computer functionality.” *Id.* at 1300–01. When determining that the claim was patent eligible, the Federal Circuit explained that the “enhancing limitation necessarily involves the arguably generic gatherers, network devices, and other components working in an unconventional distributed fashion to solve a particular technological problem.” *Id.* at 1301. The court distinguished the claim from the claims held unpatentable on the grounds that the “enhancing limitation . . . necessarily incorporates the invention’s distributed architecture—an architecture providing a technological solution to a technological problem.” *Amdocs*, 841 F.3d at 1301 (citations omitted). But unlike the generic components at issue in *Amdocs*, the generic components recited in claim 1 here do not operate in an unconventional manner to achieve an improvement in computer functionality.

Well-Understood, Routine, Conventional Activity

Under the second step of the *Alice* framework, the Examiner determines:

The limitation[s] containing [a] graphical user interface, a display in a computing device, a processor of a computing device are all recited at a high level of generality and their broadest reasonable interpretation comprises a generic computing device with a display unit which is performing their routine, well-understood and conventional function of

displaying, receiving, evaluating, processing and determining steps of the claimed invention similar to what has been found by the courts (in *Alice*) not to be adding significantly more to the underlying abstract idea.

Ans. 4. We agree.

Although claim 1 recites “more” under step two of the *Alice* framework, we conclude the “more” in the form of “a processor” and “graphical user interface” is not significant. Rather, these generic components are the epitome of a well-understood, routine, conventional element/combination previously known in the industry. *See Alice*, 573 U.S. at 227 (“[P]etitioner’s . . . media claims add nothing of substance to the underlying abstract idea.”); *Fairwarning IP, Inc. v. Iatric Sys., Inc.*, 839 F.3d 1089, 1096 (Fed. Cir. 2016) (“Claims 15–17 . . . add nothing more than similar nominal recitations of basic computer hardware, such as ‘a non-transitory computer-readable medium with computer-executable instructions’ and a microprocessor.”).

Because claim 1, in addition to the judicial exception, recites only a well-understood, routine, conventional element/combination previously known in the industry, we conclude there is no genuine issue of material fact under step two of the Examiner’s *Alice* analysis. Therefore, in view of Appellants’ Specification (Spec. ¶¶ 102–104), and consistent with the Examiner’s determinations, we determine the claims do not recite:

- (i) a specific limitation other than what is well-understood, routine, conventional activity in the field or unconventional steps that confine the claim to a particular useful application.

Guidance 56; *see also* MPEP § 2106.05(d);

Contrary to Appellants' arguments (Br. 9), we also find no parallel between claim 1 and the patent-eligible claims in *BASCOM*.⁹ In *BASCOM*, the Federal Circuit held that “[t]he inventive concept described and claimed in the ’606 patent is the installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user.” *BASCOM*, 827 F.3d at 1350. The court explained that the remote location of a filtering tool having customizable user-specific filtering features provides the filtering tool both the benefits of a filter on a local computer and the benefits of a filter on the ISP server, which is a technical improvement over prior art ways of filtering content. *Id.* at 1350–51. Here, Appellants have not demonstrated any particular arrangement in the claim as providing an inventive concept parallel to *BASCOM*'s technology-based solution.

Accordingly, we are not persuaded of error in the Examiner's determination that claim 1 is directed to an abstract idea without significantly more. Therefore, we sustain the rejection of independent claim 1 under 35 U.S.C. § 101, and independent claims 18 and 21, which fall with claim 1. We also sustain the rejection of dependent claims 2–6, 8–17, and 20, which are not argued separately. *See* Br. 11.

⁹ *BASCOM Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016) (hereinafter “*Bascom*”).

Appeal 2017-010920
Application 12/029,143

DECISION

The Examiner's rejection of claims 1–6, 8–18, 20, and 21 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