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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte AMY JOY FARNSTROM, STEVEN G. CRUTCHFIELD, and
JAMES HYDE

Appeal 2018-005513¹
Application 14/574,930
Technology Center 3600

Before HUBERT C. LORIN, JOSEPH A. FISCHETTI, and
NINA L. MEDLOCK, *Administrative Patent Judges*.

FISCHETTI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's non-final rejection of claims 1, 2, 4–9, and 11. We have jurisdiction under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We AFFIRM.

¹ Appellants identify NYSE Group, Inc. as the real party in interest. App. Br. 1.

THE INVENTION

Appellants state, “[t]he disclosure generally relates to the field of electronic trading systems, and in particular, systems for handling limit and market orders.” Spec. ¶ 1.

Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A system for establishing a price, the system comprising:

one or more specialized computers, in communication with one or more external exchanges, comprising computer-readable instructions stored on a non-transitory computer-readable storage medium and executed by at least one processor, said computer-readable instructions, when executed, causing the one or more computers to:

receive a plurality of orders at an exchange, each order specifying at least a financial instrument, a quantity, a side, and a limit price;

determine a plurality of cumulative quantities available for the side at a plurality of prices, the cumulative quantity determined based on the quantity, and the limit price of one or more of the received plurality of orders;

determine a display price for the side from the plurality of prices, such that the cumulative quantity available at the display price is greater than or equal to a display quantity threshold; and

transmit to market participants the display price for the side,

the system further comprising a Request for Quotation (RFQ) module that is specifically designed to perform certain functions, the RFQ module comprising computer-readable instructions

stored on a non-transitory computer-readable storage medium and executed by at least one processor, said computer-readable instructions, when executed, causing the RFQ module to:

monitor one or more away best bid-offer (BBO) prices at the one or more external exchanges;

determine that an away BBO price among the one or more away BBO prices is a better price than the display price for an initiating order for at least one external exchange of the one or more external exchanges, wherein the better price comprises a higher price if the initiating order has a sell side and a lower price if the initiating order has a buy side;

activate a specifically designed BBO router module when the RFQ Module determines the better price, the BBO router module comprising computer-readable instructions stored on a non-transitory computer-readable storage medium and executed by at least one processor, said computer-readable instructions, when executed, causing the BBO router module to perform the specific function of dispatching full or partial orders received at the exchange to the one or more external exchanges.

THE REJECTIONS²

The Examiner relies upon the following as evidence of unpatentability:

Cormack	US 2007/0078753 A1	Apr. 5, 2007
Dowling	US 2014/0136395 A1	May 15, 2014

² The rejection of claims 1, 2, 4–9, and 11 under 35 U.S.C. § 112(a) or 35 U.S.C. § 112 (pre-AIA), first paragraph, has been withdrawn. (Ans. 4).

The following rejections are before us for review.

Claims 1, 2, 4–9, and 11 are rejected under 35 U.S.C. § 101 as being directed to a judicial exception without significantly more.

Claims 1, 2, 4–9, and 11 are rejected under 35 U.S.C. § 112(b) as being indefinite.

Claims 1, 2, 4–9, and 11 are rejected under 35 U.S.C. § 103 as being obvious over Dowling, in view of Cormack.

FINDINGS OF FACT

We adopt the Examiner’s findings as set forth on pages 7–10 in the Non-Final Office Action and on pages 4–11 in the Examiner’s Answer, concerning only the 35 U.S.C. § 101 rejection.

ANALYSIS

35 U.S.C. § 101 REJECTION

We will affirm the rejection of claims 1, 2, 4–9, and 11 under 35 U.S.C. § 101.

The Appellants argue claims 1, 2, 4–9, and 11 as a group, and we select claim 1 as the representative claim for this group (App. Br. 3–4), and so the remaining claims stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2015).

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).

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 id.* 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, 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 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that “[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a

mathematical formula.” *Diehr*, 450 U.S. at 176; *see also id.* at 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., Diehr*, 450 U.S. 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.* (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.*

The PTO recently published revised guidance on the application of § 101. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Guidance”). Under the 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* Manual of Patent Examining Procedure (“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 Guidance.

The U.S. Court of Appeals for the Federal Circuit has explained that “the ‘directed to’ inquiry applies a stage-one filter to claims, considered in light of the [S]pecification, based on whether ‘their character as a whole is directed to excluded subject matter.’” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (quoting *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)). It asks whether the focus of the claims is on a specific improvement in relevant technology or on a process that itself qualifies as an “abstract idea” for which computers are invoked merely as a tool. *See id.* at 1335–36.

In so doing, as indicated above, we apply a “directed to” two prong test: 1) evaluate whether the claim recites a judicial exception, and 2) if the claim recites a judicial exception, evaluate whether the claim “appl[ies], rel[ies] on, or use[s] 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 judicial exception.” Guidance, 84 Fed. Reg. at 53; *see also* MPEP § 2106.05(a)–(c), (e)–(h).

The Specification states:

The advent of certain types of trading has narrowed the spread between available best bids and best offers (defined below), which may decrease profits available to market participants. Additionally, the prices of markets may change significantly relative to bid-offer spreads, which could lead to unexpected losses for market participants. These (and other) factors may decrease available liquidity at the best bid and offer prices. As a result, orders (particularly large orders) may expect to receive prices differing from the best bid or best offer prices. Due to the lack of price predictability, market participants making certain types of orders must price these orders by manually contacting other market participants. This manual pricing process is inherently slow and error-prone. Additionally, orders priced outside of an exchange may not fetch an efficient price because some market participants are not consulted.

Accordingly, there is a need for systems, methods and apparatus for accurately and efficiently pricing orders, and for executing trades based on the determined prices.

Spec. ¶¶ 2–3. The preamble of claim 1 states it is “[a] system for establishing a price.” Understood in light of the Specification, claim 1, recites, in pertinent part:

receive a plurality of orders at an exchange, each order specifying at least a financial instrument, a quantity, a side, and a limit price;

determine a plurality of cumulative quantities available for the side at a plurality of prices, the cumulative quantity determined based on the quantity, and the limit price of one or more of the received plurality of orders;

determine a display price for the side from the plurality of prices, such that the cumulative quantity available at the display price is greater than or equal to a display quantity threshold;

...

monitor one or more away best bid-offer (BBO) prices at the one or more external exchanges;

determine that an away BBO price among the one or more away BBO prices is a better price than the display price for an initiating order for at least one external exchange of the one or more external exchanges, wherein the better price comprises a higher price if the initiating order has a sell side and a lower price if the initiating order has a buy side. . . .

Claim 1.

Accordingly, the Examiner found that the claims are directed to “the abstract idea of dispatching (financial trading) orders received at an exchange.” (Non-Final Act. 7). We agree with the Examiner that claim 1 is directed to dispatching financial trading orders because claim 1, for example, requires, in part, “determin[ing] a plurality of cumulative quantities available for the side at a plurality of prices, the cumulative quantity determined based on the quantity, and the limit price of one or more of the received plurality of orders,” “determin[ing] a display price for the side from the plurality of prices, such that the cumulative quantity available at the display price is greater than or equal to a display quantity threshold,”

and “determin[ing] that an away BBO price among the one or more away BBO prices is a better price than the display price for an initiating order.” These are the basic elements of a financial transaction and/or commercial interaction which is a fundamental economic principle because establishing quantity, parties, and a best price for a transaction is the engine of commerce. The patent-ineligible end of the spectrum includes fundamental economic principles. Guidance, 84 Fed. Reg. at 52, citing *Alice*, 573 U.S. at 219–20.

Turning to the second prong of the “directed to” test, claim 1 only generically requires “one or more specialized computers,” “a non-transitory computer readable storage medium,” “a Request for Quotation (RFQ) module,” and “a BBO router module.” These components are described in the Specification at a high level of generality. *See* Spec. ¶¶ 50–53, 57, Figs. = 1, 2, 5. We fail to see how the generic recitations of these most basic computer components and/or of a system so integrates the judicial exception as to “impose[] a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” Guidance, 84 Fed. Reg. at 53.

Thus, we find that the claims recite the judicial exception of a fundamental economic practice of a commercial or legal interaction that is not integrated into a practical application.

That the claims do not preempt all forms of the abstraction or may be limited to financial instruments, does not make them any less abstract. *See OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015) (“And that the claims do not preempt all price optimization or may be

limited to price optimization in the e-commerce setting do not make them any less abstract.”).

Turning to the second step of the *Alice* analysis, because we find that the claims are directed to abstract ideas/judicial exceptions, the claims must include an “inventive concept” in order to be patent-eligible, i.e., there must be an element or combination of elements sufficient to ensure that the claim in practice amounts to significantly more than the abstract idea itself. *See Alice*, 573 U.S. at 217–18 (quoting *Mayo Collaborative Servs.*, 566 U.S. at 72–73).

Concerning this step the Examiner found the following:

The claim does not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional elements when considered both individually and as an ordered combination do not amount to significantly more than the abstract idea. The claim recites the additional limitations of specialized computers, external exchanges, computer-readable instructions, nontransitory computer-readable storage mediums processors, a Request for Quotation module, BBO router module. The added system components, e.g. ‘memory,’ ‘processor,’ computers, modules] are recited at a high level of generality and are recited as performing generic computer functions routinely used in computer applications.

(Non-Final Act. 8–9). We agree with the Examiner. “[T]he relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea . . . on a generic computer.” *Alice*, 573 U.S. at 225. They do not.

Taking the claim elements separately, the function performed by the computer at each step of the process is purely conventional. Using a computer to retrieve, determine, transmit and apply decision criteria to data to generate a result, amounts to electronic data query and transmit of same which are some of the most basic functions of a computer. All of these computer functions are well-understood, routine, conventional activities previously known to the industry. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016); *see also In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) (“Absent a possible narrower construction of the terms ‘processing,’ ‘receiving,’ and ‘storing,’ . . . those functions can be achieved by any general purpose computer without special programming”). In short, each step does no more than require a generic computer to perform generic computer functions.

Considered as an ordered combination, the computer components of Appellants’ claims add nothing that is not already present when the steps are considered separately. The sequence of data reception-analysis (retrieve, determine, transmit, apply decision criteria to data to generate a result) and storing is equally generic and conventional or otherwise held to be abstract. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014) (sequence of receiving, selecting, offering for exchange, display, allowing access, and receiving payment recited an abstraction), *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1378 (Fed. Cir. 2017) (holding that sequence of data retrieval, analysis, modification, generation, display, and transmission was abstract), *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (holding

sequence of processing, routing, controlling, and monitoring was abstract). The ordering of the steps is, therefore, ordinary and conventional.

Thus, the claims at issue amount to nothing significantly more than instructions to apply the abstract ideas of a fundamental economic practice of a commercial or legal interaction using some unspecified, generic computer. Under our precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice*, 573 U.S. at 225–26.

We have reviewed all the arguments Appellants have submitted concerning the patent eligibility of the claims before us that stand rejected under 35 U.S.C. § 101. (App. Br. 3–17). We find that our analysis above substantially covers the substance of all the arguments, which have been made. But, for purposes of completeness, we will address various arguments in order to make individual rebuttals of same.

Appellants argue:

The BBO router module, in turn, is specially configured to dispatch full or partial orders to the external exchange(s) having better price(s) as determined by the RFQ module, functions that did not exist prior to Appellants' invention.

Thus, together, the RFQ module and BBO router module work in tandem to monitor *external* exchange systems so as to leverage resources of the external exchange systems by routing received orders to the external exchanges under certain circumstances. Again, all of these functions are indeed *specialized* because they simply do not exist outside of the Appellants' invention. Indeed, no other computer system in this space has any component or feature that performs this collection of specialized functions. As a result, the claimed computer system and its components cannot be deemed generic. To the contrary, the claimed

computer system and its components are indeed specialized, transforming whatever abstract idea may exist in the claims into a patent-eligible application thereof.

(App. Br. 6–7. (emphasis omitted)).

We disagree with Appellants. Although a “router module” to dispatch full or partial orders to the external exchange(s) is in some sense technological, its use in operating system functionality can be said to be so notoriously settled that merely invoking it is no more than abstract conceptual advice to use well-known technology for its intended purpose. *See In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 612–13 (Fed. Cir. 2016). (Using a generic telephone for its intended purpose was a well-established “basic concept” sufficient to fall under *Alice* step 1.) Appellants offer insufficient evidence as to why reference to a “best bid-offer (BBO) router module” or a “Request for Quotation (RFQ) module” is meaningful beyond the face of the language itself other than being the way that data are carried within the network. There is no further discussion in the Specification of the particular technology for performing this claimed step. *See Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1263 (Fed. Cir. 2016); *see also Enfish*, 822 F.3d at 1336 (focusing on whether the claim is “an improvement to computer functionality itself, not on economic or other tasks for which a computer is used in its ordinary capacity.”). “[A]fter *Alice*, there can remain no doubt: recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible. The bare fact that a computer exists in the physical rather than purely conceptual realm is beside the point.” *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (internal citations and quotation marks omitted).

Absent evidence to the contrary, we view the “Quotation (RFQ) module” and the “BBO router module” to be only an indication of the environment in which the abstract idea is practiced.

MPEP 2106.05(h) concern[s] generally linking use of a judicial exception to a particular technological environment or field of use, including a discussion of the exemplars provided herein, which are based on *Bilski*, 561 U.S. at 612, and *Flook*, 437 U.S. at 588–90. Thus, the mere application of an abstract method of organizing human activity in a particular field is not sufficient to integrate the judicial exception into a practical application.

Guidance, 84 Fed. Reg. at 54 n.32, *see also Alice Corp.*, 573 U.S. at 223.

We further fail to see the similarities asserted by Appellants (App. Br. 7–8) between the claims on appeal here and those adjudicated in *DDR Holdings*. In *DDR Holdings*, the court evaluated the eligibility of claims “address[ing] the problem of retaining website visitors that, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be instantly transported away from a host’s website after ‘clicking’ on an advertisement and activating a hyperlink.” *DDR Holdings*, 773 F.3d. at 1257. There, the court found that the claims were patent eligible because they transformed the manner in which a hyperlink typically functions to resolve a problem that had no “pre-Internet analog.” *Id.* at 1258. In contrast, the problem to be resolved in the case on appeal here is responding to “a need for systems, methods and apparatus for accurately and efficiently pricing orders, and for executing trades based on the determined prices.” Spec. ¶ 3. This is a problem related to an interaction between parties to a commercial transaction, and not to an innovation in technology, such as, an improvement in hyperlink functions.

Nor do we agree that the *Diehr* applies here as proposed by Appellants. (App. Br. 8). In *Diehr*, the Court characterized the claims as transforming an article, raw uncured synthetic rubber into a different state or thing. *Diehr*, 450 U.S. at 184. We fail to see how “dispatching (financial trading) orders received at an exchange” transforms any article into a different state or thing.

Appellants next argue,

In this regard, the claims recite the integral use of a *particular machine* to achieve performance of the inventive functions and *improvement to the functioning of the computer itself*. For example, the claims recite specialized computer components and routines that do not exist in conventional computing devices. These specialized components perform specialized (nonconventional) functions that are uncommon or atypical of conventional ‘general purpose computers’ (e.g., the claimed computer components (e.g., RFQ module and BBO router module) monitor *away exchanges* and automatically dispatch orders to *away exchanges*, which amounts to trading on multiple exchanges, as summarized above).

(App. Br. 11 (emphasis omitted)).

We disagree with Appellants. As found *supra*, claim 1 only includes the following generically recited device limitations: “one or more specialized computers,” a “non-transitory computer readable storage medium,” a “Request for Quotation (RFQ) module,” and a “BBO router module.” What remains in the claim after disregarding these device limitations, are abstractions, i.e.,

determine that an away BBO price among the one or more away BBO prices is a better price than the display price for an initiating order for at least one

external exchange of the one or more external exchanges, wherein the better price comprises a higher price if the initiating order has a sell side and a lower price if the initiating order has a buy side.

Claim 1. “A claim for a new abstract idea is still an abstract idea.”

Synopsys, Inc. v. Mentor Graphics Corp., 839 F.3d 1138, 1151 (Fed. Cir. 2016) (citing *Mayo*, 566 U.S. at 90). To the extent Appellants are arguing that these additional elements constitute an inventive concept, such features cannot constitute the “inventive concept.” *Berkheimer v. HP Inc.*, 890 F.3d 1369, 1374 (Fed. Cir. 2018) (Moore, J., concurring) (“It is clear from *Mayo* that the ‘inventive concept’ cannot be the abstract idea itself, and *Berkheimer* . . . leave[s] untouched the numerous cases from this court which have held claims ineligible because the only alleged ‘inventive concept’ is the abstract idea.”); *see also BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) (“It has been clear since *Alice* that a claimed invention’s use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention ‘significantly more’ than that ineligible concept.”).

Here, for example, the claims require “the BBO router module to perform the specific function of dispatching full or partial orders received at the exchange to the one or more external exchanges,” which we find is the use of well-known technology for its intended purpose. *See In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d at 612–13. (Using a generic telephone for its intended purpose was a well-established “basic concept”

sufficient to fall under *Alice* step 1.)³

Appellants further argue,

if the Examiner is conceding that the claimed system is novel, then the claims are necessarily patentable. Indeed, a ‘system’ is a statutory class, and if its functions are novel, then the system is patentable over all prior art. This obvious contradiction by the Examiner (i.e., confirming that the system is novel, yet labeling it as an abstract idea) evidences that the Examiner is merely interested in maintaining his prior position, as opposed to examining the claims for what they are – a novel, patent-eligible system.

(App. Br. 10 (emphasis omitted)).

We disagree with Appellants. Although the second step in the *Mayo/Alice* framework is termed a search for an “inventive concept,” the analysis is not an evaluation of novelty or non-obviousness, but, rather, a search for “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.’” *Alice*, 573 U.S. at 217–18 (alteration in original). “The ‘novelty’ of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.” *Diehr*, 450 U.S. at 188–89. “Groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry.”

³ Our distinction here applies equally to Appellants’ assertion of similarity in *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016), *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016), and *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016). (App. Br. 14–16).

Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576, 591 (2013). A novel and non-obvious claim directed to a purely abstract idea is, nonetheless, patent-ineligible. *See Mayo*, 566 U.S. at 90; *see also Diehr*, 450 U.S. at 188–89 (“The ‘novelty’ of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the §101 categories of possibly patentable subject matter.”).

Appellants next argue:

Indeed, the Examiner's oversimplification of the claims completely ignores the very specific and detailed limitations that go well beyond merely ‘dispatching’ or ‘financial trading’ of orders ‘received at an exchange.’ As a result, the Examiner has failed to consider the words that actually define the inventive concept within the claims. Thus, the §101 rejection is improper and should be reversed.

(App. Br. 17).

We disagree with Appellants. First, our decision above makes a line by line study of claim 1 to arrive at our agreement with the Examiner’s finding that the claims “are directed to the abstract idea of dispatching (financial trading) orders received at an exchange.” (Non-Final Act. 7). In fact, claim 1 recites the term “dispatching” which is used by the Examiner in this finding. Second, although Appellants and the Examiner describe, at different levels of abstraction, what the claims are directed, it is recognized that “[a]n abstract idea can generally be described at different levels of abstraction.” *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). That need not and, in this case does not, “impact the patentability analysis.” *See id.* at 1241.

To the extent Appellants argue that the Examiner erred in adequately supporting this determination by not providing evidence, we are unpersuaded. In this regard, there is no requirement that Examiners must provide evidentiary support in every case before a conclusion can be made that a claim is directed to an abstract idea. *See, e.g.*, Manual of Patent Examining Procedure § 2106.07(a)(III) (2018) (“The courts consider the determination of whether a claim is eligible (which involves identifying whether an exception such as an abstract idea is being claimed) to be a question of law. Thus, the court does not require ‘evidence’ that a claimed concept is a judicial exception, and generally decides the legal conclusion of eligibility without resolving any factual issues.” (citations omitted.))

All that is required of the USPTO to meet its *prima facie* burden of production is that the Examiner set forth the statutory basis of the rejection and the reference or references relied upon in a sufficiently articulate and informative manner as to meet the notice requirement of 35 U.S.C. § 132. As the statute itself instructs, the Examiner must “notify the applicant,” “stating the reasons for such rejection,” “together with such information and references as may be useful in judging of the propriety of continuing the prosecution of his application.” 35 U.S.C. § 132; *see also In re Jung*, 637 F.3d 1356, 1363 (Fed. Cir. 2011) (declining “to impose a heightened burden on examiners beyond the notice requirement of § 132”). Here, as we found above, the Examiner has made these findings as required by the statute. *See Non-Final Act. 2–4.*

For the reasons identified above, we determine there are no deficiencies in the Examiner’s *prima facie* case of patent ineligibility of the

rejected claims. Therefore, we will sustain the Examiner's § 101 rejection of claims 1, 2, 4–9, and 11.

35 U.S.C. § 103(a) REJECTION

Independent claim 1 requires “determine a display price for the side from the plurality of prices, such that the cumulative quantity available at the display price is greater than or equal to a display quantity threshold.”

Claim 1.

The Examiner found, concerning these limitations that Dowling discloses, the following:

(0053-58, it appears that the system looks to match quantities of orders that can be matched using a combined limit order book, 0068) determine a display price for the side from the plurality of prices, such that the cumulative quantity available at the display price is greater than or equal to a display quantity threshold; and transmit to market participants the display price for the side (0045 market display).

(Non-Final Act. 12).

Appellants argue,

Dowling at para. [0045] is cited as allegedly disclosing ‘determine a display price ... such that the cumulative quantity available at the display price is greater than or equal to a display quantity threshold.’ *See* Latest Action, p. 12. However, this paragraph at best simply describes the order flow 300 of a Client Order to Retail ATS prior to information being sent to an ATS interface, as illustrated in Fig. 3.

(App. Br. 18).

We agree with Appellants. Dowling at paragraph 45 merely discloses

aggregating orders, e.g., “buy, 30 bonds of ABC Corp 7% 1/1/20 at a price of 100, which means 1.000 times 30 times the \$1000 face value per bond, or \$30,000.00.” The Examiner does not explain and it is not apparent how the mere aggregation of bonds with the same yields and a fixed price constitutes “a display price... such that the cumulative quantity available at the display price is greater than or equal to a display quantity threshold.” There is no disclosure in Dowling of a threshold which is required by the claim to be met by the cumulative quantity. In Dowling, the 30 bonds are simply the aggregated number of bonds which meet the order specification without limitation on quantity threshold.

Therefore, we will not sustain the Examiner’s obviousness rejection of independent claim 1.

Because claims 2, 4–9, and 11 depend from claim 1, and because we cannot sustain the Examiner’s obviousness rejection of claim 1, the Examiner’s obviousness rejection of claims 2, 4–9, and 11 likewise cannot be sustained.

35 U.S.C. § 112(b) REJECTION

The Examiner rejected claims 1, 2, 4-9, and 11 as indefinite because “Applicant claims ‘said’ computer readable instructions, when executed. Due to the establishment of multiple computer readable instructions, it is indefinite as to which computer readable instructions are referred to by the limitations ‘said computer readable instructions.’” (Non-Final Act. 6–7).

Appellants argue, “[t]he Appellants respectfully disagree. Appellants submit that it is significantly clear from the claims which instructions the ‘said’ computer readable instructions infer.” (Appeal Br. 18).

We agree with Appellants. Claim 1 is drafted into distinct paragraphs respectively directed to each of the RFQ and BBO modules. We find it reasonable to understand that the instructions appearing in the paragraph where the respective module is recited, are those instructions appurtenant to the device recited in that paragraph.

CONCLUSIONS OF LAW

We conclude the Examiner did not err in rejecting claims 1, 2, 4–9, and 11 under 35 U.S.C. § 101.

We conclude the Examiner erred in rejecting claims 1, 2, 4–9, and 11 under 35 U.S.C. § 103.

We conclude the Examiner erred in rejecting claims 1, 2, 4–9, and 11 under 35 U.S.C. § 112(b).

DECISION

Because we have affirmed at least one ground of rejection with respect to each claim on appeal, the Examiner's decision is affirmed. *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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED