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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ANDREW MILES BOOTH

Appeal 2016-005538
Application 13/407,755
Technology Center 3600

Before CARLA M. KRIVAK, JEREMY J. CURCURI, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

AMUNDSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ seeks our review under 35 U.S.C. § 134(a) from a final rejection of claims 1, 11, 21, and 31, i.e., all pending claims. Claims 2–6, 8–10, 12–16, 18–20, 22–26, and 28–30 were withdrawn, and claims 7, 17, and 27 were cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ Appellant identifies the real party in interest as NYSE Group, Inc. App. Br. 1.

STATEMENT OF THE CASE

The Invention

According to the Specification, the invention concerns a locked-in trade facilitation (LITF) engine that “facilitates delivery of open futures positions, upon or before expiry, into financial instruments, such as U.S. dollar-denominated fixed income market positions.” Spec. ¶ 35.² The Specification explains that “[i]n one embodiment” the LITF engine “provides a delivery process for U.S. Treasury futures” so that “contracts that remain open after the close of trading on the last trading day of the delivery month may be automatically submitted as locked-in trades in the underlying U.S. Treasury securities eligible for settlement on a delivery vs. payment (DVP) basis on the next business day.” Abstract.

Exemplary Claim

Independent claim 1 exemplifies the claims at issue and reads as follows (with formatting added for clarity):

1. A processor-implemented method for facilitating delivery of open futures positions into currency-denominated fixed income market positions, comprising:

receiving and maintaining, by at least one processing device comprising memory and at least one processor executing instructions stored in the memory, data pertaining to cleared open interests, wherein the cleared open interests comprise interests that remain open after delivery expiration; and

² This decision uses the following abbreviations: “Spec.” for the Specification, filed February 28, 2012; “Final Act.” for the Final Office Action, mailed May 20, 2015; “App. Br.” for the Appeal Brief, filed October 13, 2015; “Ans.” for the Examiner’s Answer, mailed March 22, 2016; and “Reply Br.” for the Reply Brief, filed April 28, 2016.

automatically submitting the cleared open interests as locked-in trades in an underlying currency-denominated fixed income instrument, comprising:

receiving at the at least one processing device from an exchange member an instrument nomination for each open interest representing a short position, the instrument nomination specifying the underlying currency-denominated fixed income instrument that is to be delivered by a member;

determining, by the at least one processing device, one or more long positions that will take delivery of one or more short positions represented by the nominated instruments for each member, comprising:

determining a trading volume assigned to each trading date for each exchange member by:

sorting a set of volumes associated with long positions by trading date, and

selecting, starting with a latest trading date, each trading date sequentially until the long position for that member has been satisfied;

grouping long positions by trading date; and

adding long positions for each trading date to the pool of long positions until the total long positions satisfy the total short positions on a trading date pro-rata basis responsive to a total volume of the trading date being greater than required;

converting, by that at least one processing device, the one or more short positions to a purchase by a clearing house and sale by the exchange member in the underlying currency-denominated fixed income instrument corresponding to each of the short positions;

converting, by the at least one processing device, the one or more long positions to a sale by the clearing house and a purchase by the exchange member in the underlying currency-denominated fixed income instrument;

developing, by the at least one processing device, a matched trade file for a specified period, the matched trade file comprising details of the short positions and the long positions; and

transmitting, by the at least one processing device, the matched trade file for settlement.

App. Br. 24–25 (Claims App.).

The Rejection on Appeal

Claims 1, 11, 21, and 31 stand rejected under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. Final Act. 2–4.

ANALYSIS

We have reviewed the rejection in light of Appellant’s arguments that the Examiner erred. For the reasons explained below, we concur with the Examiner’s conclusion concerning ineligibility under § 101. We adopt the Examiner’s findings and reasoning in the Final Office Action (Final Act. 2–4, 4–5) and Answer (Ans. 2–13) regarding the § 101 rejection. We add the following to address and emphasize specific findings and arguments.

The § 101 Rejection of Claims 1, 11, 21, and 31

INTRODUCTION

The Patent Act defines patent-eligible subject matter broadly: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. In *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 70 (2012), and *Alice Corp. v. CLS Bank International*, 134 S. Ct. 2347, 2354 (2014), the Supreme Court explained that § 101 “contains an important implicit exception” for

laws of nature, natural phenomena, and abstract ideas. *See Diamond v. Diehr*, 450 U.S. 175, 185 (1981). In *Mayo* and *Alice*, the Court set forth a two-step analytical framework for evaluating patent-eligible subject matter: First, “determine whether the claims at issue are directed to” a patent-ineligible concept, such as an abstract idea. *Alice*, 134 S. Ct. at 2355. If so, “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements” add enough to transform the “nature of the claim” into “significantly more” than a patent-ineligible concept. *Id.* at 2355, 2357 (quoting *Mayo*, 566 U.S. at 79); *see Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016).

Step one in the *Mayo/Alice* framework involves looking at the “focus” of the claims at issue and their “character as a whole.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016). Step two involves the search for an “inventive concept.” *Alice*, 134 S. Ct. at 2355; *Elec. Power Grp.*, 830 F.3d at 1353. An “inventive concept” requires more than “well-understood, routine, conventional activity already engaged in” by the relevant community. *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1047 (Fed. Cir. 2016) (quoting *Mayo*, 566 U.S. at 79–80). But “an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces.” *BASCOM Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016). Under step two, “an inventive concept must be evident in the claims.” *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017).

A PRIMA FACIE CASE OF INELIGIBILITY

Appellant asserts that “the Examiner has failed to provide sufficient analysis, information or evidence to substantiate a rejection under 35 USC § 101 according to the standard articulated by the *Alice Corp.* court,” and therefore “has failed to establish a *prima facie* case” of ineligibility. App. Br. 8; *see* Reply Br. 6. In particular, Appellant contends that “the Examiner has not” (1) “identified with particularity the alleged abstract idea that forms the basis of the Appellant’s claims”; (2) “addressed all parts of the claims, and all claims of the application”; and (3) “provided any clearly articulated reason(s), evidence or information to support any of the conclusory assertions made throughout the Final Office Action.” App. Br. 8; *see id.* at 9–12.

Appellant’s arguments do not persuade us of Examiner error as the Final Office Action adequately explains the § 101 rejection. “[T]he prima facie case is merely a procedural device that enables an appropriate shift of the burden of production.” *Hyatt v. Dudas*, 492 F.3d 1365, 1369 (Fed. Cir. 2007) (citing *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992)); *see also* App. Br. 8. The “PTO carries its procedural burden of establishing a prima facie case when its rejection satisfies 35 U.S.C. § 132, in ‘notify[ing] the applicant . . . [by] stating the reasons for [its] rejection, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of [the] application.’” *In re Jung*, 637 F.3d 1356, 1362 (Fed. Cir. 2011) (alterations in original) (quoting 35 U.S.C. § 132). The PTO violates § 132 “when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection.” *Chester v. Miller*,

906 F.2d 1574, 1578 (Fed. Cir. 1990). But if the PTO “adequately explain[s] the shortcomings it perceives . . . the burden shifts to the applicant to rebut the prima facie case with evidence and/or argument.” *Hyatt*, 492 F.3d at 1370.

Here, for *Mayo/Alice* step one, the Examiner determines that claims 1, 11, 21, and 31 are “directed to the abstract idea of facilitation delivery of open futures positions,” and specifically to “matching trade files for settlement across a network in a financial account.” Final Act. 2, 4–5. The Examiner explains that this applies to claims 1, 11, 21, and 31 even though they fall within different “statutory categories of invention,” e.g., “process, machine, [and] manufacture.” *Id.* at 4. Thus, the Examiner identifies the applicable judicial exception as an abstract idea rather than a natural phenomenon or law of nature, and the Examiner defines the abstract idea.

Further, for *Mayo/Alice* step two, the Examiner finds that the abstract idea “is not performed on a special use computer but instead on a general purpose computer” and cites the Specification as support. Final Act. 4–5 (citing Spec. ¶ 173). The Examiner explains that “the computer components in claims 1, 11, 21, and 31 perform purely generic computer functions.” *Id.* at 5. The Examiner determines that the additional elements in claims 1, 11, 21, and 31 individually and in combination “amount to no more than mere instructions to implement the idea on a computer.” *Id.* at 2. The Examiner quotes the following statement from *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014): “Thus, if a patent’s recitation of a computer amounts to a mere instruction to ‘implemen[t]’ an abstract idea ‘on . . . a computer,’ that addition cannot impart patent eligibility.” Final Act. 5. In addition, the Examiner determines that the claims do not

(1) “affect an improvement to another technology or technical field,”
(2) “amount to an improvement to the functioning of a computer itself,” or
(3) “move beyond a general link of an abstract idea to a particular technological environment.” *Id.* at 3. Accordingly, the Examiner reasons that the claims lack an “inventive concept” sufficient to transform them into significantly more than a patent-ineligible abstract idea. *Id.* at 2–3, 5.

The Examiner’s statements satisfy § 132 as they apply the *Mayo/Alice* analytical framework and apprise Appellant of the reasons for the § 101 rejection under that framework. As discussed in more detail below, Appellant recognizes the Examiner’s *Mayo/Alice* analysis and presents arguments regarding each step. *See* App. Br. 9–22.

MAYO/ALICE STEP ONE

Appellant contends the claims at issue are not directed to an abstract idea because they “transform[] data and information in a novel way into something that did not exist prior to the transformation.” App. Br. 9–10. That contention does not persuade us of Examiner error. The Federal Circuit has ruled that claims covering the transformation of data or information in one form (“a functional description of a logic circuit”) into another form (“a hardware component description of the logic circuit”) were directed to an abstract idea. *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1139, 1147–51 (Fed. Cir. 2016); *see Gottschalk v. Benson*, 409 U.S. 63, 71–74 (1972) (holding that claims covering methods for converting binary-coded decimal numbers to binary numbers did not satisfy § 101). Although the claims in *Synopsys* transformed data or information “into something that did not exist prior to the transformation,” the Federal Circuit decided they were directed to an abstract idea. *Synopsys*, 839 F.3d at 1150–51. Thus, the

transformation of data or information does not alone impart patent eligibility under *Mayo/Alice* step one. “A process that start[s] with data, add[s] an algorithm, and end[s] with a new form of data [is] directed to an abstract idea.” *RecogniCorp*, 855 F.3d at 1327.

The claims at issue cover data collection, processing, and communication. App. Br. 24–28 (Claims App.); Ans. 2, 4–5, 8. The Federal Circuit has ruled that claims covering data collection, processing, and communication were directed to abstract ideas. *See, e.g., Secured Mail Sols. LLC v. Universal Wilde, Inc.*, 873 F.3d 905, 907–08, 910–11 (Fed. Cir. 2017); *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1047, 1054–56 & n.6 (Fed. Cir. 2017); *RecogniCorp*, 855 F.3d at 1324, 1326–27; *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1339–41 (Fed. Cir. 2017); *FairWarning, IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1092–95 (Fed. Cir. 2016); *Elec. Power Grp.*, 830 F.3d at 1351–54. Consistent with Federal Circuit decisions, the Examiner reasons that the claims concern “the concept of ‘converting and transmitting financial data’” as described by the data receiving, processing, and transmitting limitations. Ans. 4–5; *see id.* at 2, 8.

Appellant argues the claims “squarely fall into one of the four statutory categories” in § 101. App. Br. 10. But the Examiner acknowledges that the claims satisfy § 101’s “statutory categories of invention.” Final Act. 4; *see* Ans. 3. We agree with the Examiner that the claims are ineligible for patenting under § 101 because they are directed to a judicial exception—an abstract idea—and lack an “inventive concept.” Final Act. 2–5; Ans. 2–7.

Appellant asserts that the Examiner provides “no explanation as to which elements of the claims form the alleged abstract idea and which do not form the abstract idea” and “no explanation as to why” the “the elements that are not considered to form the abstract idea . . . do not amount to significantly more than the alleged abstract idea.” App. Br. 11. Appellant’s assertion does not persuade us of Examiner error because it rests on a misunderstanding of the *Mayo/Alice* framework. Under *Mayo/Alice* step one, “the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter.” *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015); *see Elec. Power*, 830 F.3d at 1353. Here, based on the claims’ “character as a whole,” the Examiner determines that they are directed to excluded subject matter—an abstract idea. Final Act. 2, 4–5; Ans. 2, 4–6.

Appellant argues that “some reasoning substantiating that the entirety of each and every claim constitutes an abstract idea must be provided,” and the Examiner provides no such reasoning. App. Br. 12. This argument mischaracterizes the rejection. The Examiner accurately assesses the claims’ “character as a whole” to discern the abstract idea and then analyzes the additional elements to determine whether the claims include an “inventive concept.” *See* Final Act. 2–4, 4–5; Ans. 2–13.

Additionally, the claims recite a series of steps for converting and transmitting financial data, and they “can be performed in the human mind, or by a human using a pen and paper.” App. Br. 24–28 (Claims App.); Ans. 4–5, 10. The claimed series of steps resembles the claimed “series of steps instructing how to hedge risk” in a commodities market in *Bilski v. Kappos*, 561 U.S. 593, 599 (2010). *See* Ans. 5. In *Alice*, the Supreme Court

explained that the claims in *Bilski* concerned a method of organizing human activity. *Alice*, 134 S. Ct. at 2356; *see also Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367 (Fed. Cir. 2015) (deeming the claim at issue “not meaningfully different from the ideas found to be abstract in other cases before the Supreme Court and our court involving methods of organizing human activity”) (“*Capital One*”). Thus, in light of the above, we agree with the Examiner the claims are directed to an abstract idea.

MAYO/ALICE STEP TWO

Appellant contends the claims at issue include significantly more than an abstract idea because they “include novel and unique features that provide a new and meaningful application of” the abstract idea. App. Br. 14. In addition, Appellant contends the “claims are completely novel and non-obvious over all relevant prior art” and, therefore, “must recite something significantly more than conventional features and limitations.” *Id.* at 18. According to Appellant, “if any of the claimed features were indeed routine or conventional, the Examiner surely would have raised a rejection under § 102 or § 103.” *Id.*

Appellant’s contentions do not persuade us of Examiner error. “The search for a § 101 inventive concept is . . . distinct from demonstrating § 102 novelty.” *Synopsys*, 839 F.3d at 1151; *see Diehr*, 450 U.S. at 188–89; *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1340 (Fed. Cir. 2017); *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1315 (Fed. Cir. 2016) (same for obviousness) (“*Symantec*”). “[U]nder the *Mayo/Alice* framework, a claim directed to a newly discovered law of nature (or natural phenomenon or abstract idea) cannot rely on the novelty of

that discovery for the inventive concept necessary for patent eligibility.” *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1376 (Fed. Cir. 2016). “[A] claim for a *new* abstract idea is still an abstract idea.” *Synopsys*, 839 F.3d at 1151. Similarly, a claim for a beneficial abstract idea is still an abstract idea. *See Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379–80 (Fed. Cir. 2015). The Federal Circuit has expressly rejected the notion that “abstract ideas remain patent-eligible under § 101 as long as they are new ideas, not previously well known, and not routine activity.” *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715–16 (Fed. Cir. 2014). Thus, a claim’s alleged novelty and nonobviousness fail to provide an “inventive concept” needed to satisfy *Mayo/Alice* step two.

Appellant argues the “claimed invention provides an unconventional mechanism to deliver expiring futures contracts for settlement” because “conventional electronic trading systems may fail to deliver expiring open futures contracts.” App. Br. 17–18 (emphasis omitted). According to Appellant, the “claims recite specific limitations other than what is well-understood, routine and conventional in the field, and add unconventional steps that confine the claim to a particular useful application.” *Id.* at 17 (emphasis omitted).

Appellant’s arguments do not persuade us of Examiner error because “limiting an abstract idea to one field of use” does not impart patent eligibility. *See Bilski*, 561 U.S. at 612; *see also Parker v. Flook*, 437 U.S. 584, 589–90 (1978); *Affinity Labs*, 838 F.3d at 1259. As the Examiner explains, the claims do not “move beyond a general link of an abstract idea to a particular technological environment.” Final Act. 3; Ans. 3.

The claims recite as additional elements (1) a “processing device” comprising a “memory” and a “processor,” (2) an “apparatus” comprising a “memory” and a “processor,” and (3) a storage “medium” related to a “processor.” App. Br. 24–28 (Claims App.); *see* Ans. 7, 9; *see also* Final Act. 4–5 (citing Spec. ¶ 173). As noted above, the Examiner finds Appellant’s Specification describes these computer components generically. *See, e.g.*, Spec. ¶¶ 171–178, 188–190. For example, the Specification discloses that “computers employ processors to process information,” and processors “may be referred to as central processing units (CPU)” or microprocessors. *Id.* ¶ 171. The Specification explains that “[t]he CPU comprises at least one high-speed data processor adequate to execute program components for executing user and/or system-generated requests,” and “[t]he CPU may be a microprocessor,” including a commercially available microprocessor, such as “AMD’s Athlon, Duron and/or Opteron; ARM’s application, embedded and secure processors; IBM and/or Motorola’s DragonBall and PowerPC; IBM’s and Sony’s Cell processor; Intel’s Celeron, Core (2) Duo, Itanium, Pentium, Xeon, and/or XScale; and/or the like processor(s).” *Id.* ¶ 176.

Additionally, the Specification notes that “any mechanization and/or embodiment allowing a processor to affect the storage and/or retrieval of information is regarded as memory,” and “memory is a fungible technology and resource” and may include “ROM,” “RAM,” and “any conventional computer system storage.” Spec. ¶ 188. The Specification also explains that a processor “interacts with memory through instruction passing . . . to execute stored instructions (i.e., program code) according to conventional data processing techniques.” *Id.* ¶ 176.

Consistent with the Specification, the Examiner determines the “processor is recited [in the claims] at a high level of generality and only performs generic functions of manipulating information and transmitting that information to a device.” Ans. 7, 9. Relying on a “processor” to “perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.” *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015). The Examiner explains that “the computer components in claims 1, 11, 21, and 31 perform purely generic computer functions” and that “performing generic computer functions, without an inventive concept, do[es] not amount to significantly more than the abstract idea.” Ans. 6–7, 9, 11–12; *see* Final Act. 5; *see also Alice*, 134 S. Ct. at 2358, 2360; *Symantec*, 838 F.3d at 1318–20; *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1334 (Fed. Cir. 2015); *Ultramercial*, 772 F.3d at 715–16; *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014); *Cyberfone Sys., LLC v. CNN Interactive Grp., Inc.*, 558 F. App’x 988, 993 (Fed. Cir. 2014). Although the Examiner in the Answer cites the same or similar court decisions, Appellant in the Reply Brief makes no attempt to distinguish any of these decisions. Ans. 11–12; Reply Br. 1–8.

Appellant argues the “collective claim elements provide an improvement to the technical field of electronic trading.” App. Br. 15, 17 (emphasis omitted); *see* Reply Br. 3–4. Specifically, Appellant asserts the “claimed invention addresses the critical need for improving delivery of open futures positions (upon or before expiry) into currency-denominated fixed income market positions by ‘automatically submitting the cleared open interests as locked-in trades.’” App. Br. 16. Appellant also asserts that

improving delivery of open futures positions avoids “risking penalties associated with failing to deliver,” and the “cleared open interests may not be settled” without the claimed invention. *Id.* (emphasis omitted).

Appellant’s assertions do not persuade us of Examiner error because the claims do not recite a technological solution to a technological problem. *See Alice*, 134 S. Ct. at 2358 (explaining that “the claims in *Diehr* were patent eligible because they improved an existing technological process”); *see also* Ans. 10. Rather, the claims address the business problem of boosting trading volumes by “facilitat[ing] delivery of open futures positions, upon or before expiry, into financial instruments, such as U.S. dollar-denominated fixed income market positions.” *See* Spec. ¶ 35; *see also* Ans. 10. As Appellant points out, some trades may not occur without the claimed invention. App. Br. 16. Although the claims require “transmitting” or “means to transmit” a “matched trade file for settlement,” they do not specify any particular technology or mechanism for transmitting the “matched trade file.” For instance, the claims do not require a computer network for transmitting or receiving data. App. Br. 24–28 (Claims App.). Accordingly, the Examiner correctly determines that the claims do not “affect an improvement to another technology or technical field.” Final Act. 3; Ans. 3.

Appellant argues that “the collective claim elements provide an improvement to the functioning of the computer itself.” App. Br. 17 (emphasis omitted); *see* Reply Br. 1–5, 7–8. Specifically, Appellant asserts that the claimed invention “results in faster processing (i.e., settlement).” App. Br. 17 (emphasis omitted); *see* Reply Br. 2–5, 7–8. Appellant further asserts that “converting the (many) short and long positions into a single

matched trade file, and then only sending the single matched trade file to downstream systems provides a tangible and measurable improvement over the prior art” because “the downstream systems (e.g., those responsible for downstream settlement processes) are now only required to receive and process the single matched trade file rather than individual short and long position information (or even the sale and purchase agreements associated with each).” Reply Br. 3. According to Appellant, “the downstream systems” are “improved insofar as they only receive and process a single matched trade file rather than each of the individual short and long positions or even each of the sale and purchase agreements.” *Id.* at 7.

Although Appellant cites Specification paragraph 35 as support for these assertions, paragraph 35 discusses “efficiencies” resulting from “automated delivery.” Spec. ¶ 35; *see* App. Br. 17. Paragraph 35 does not attribute those alleged efficiencies to a “single matched trade file.” Spec. ¶ 35. And the Specification paragraphs that describe a trade file do not discuss faster settlement as an advantage. *See, e.g.*, Spec. ¶¶ 72, 80–89, 92–95. In any event, “claiming the improved speed or efficiency inherent with applying the abstract idea on a computer” does not “provide a sufficient inventive concept.” *Capital One*, 792 F.3d at 1367. Just using a computer to accelerate an abstract-idea process does not suffice for patent eligibility. *See Bancorp Servs., L.L.C. v. Sun Life Assur. Co.*, 687 F.3d 1266, 1279 (Fed. Cir. 2012).

Appellant’s assertions concerning the claimed invention resulting in faster settlement do not reflect the claim language. The claims do not require settling locked-in trades. App. Br. 24–28 (Claims App.). Instead, the claims require “transmitting” or “means to transmit” a “matched trade

file for settlement.” Unclaimed features do not support patent eligibility under *Mayo/Alice* step two. *See, e.g., Berkheimer v. HP Inc.*, 881 F.3d 1360, 1369–70 (Fed. Cir. 2018); *Two-Way Media*, 874 F.3d at 1338–39; *Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1331–32 (Fed. Cir. 2017). “[A]n inventive concept must be evident in the claims.” *RecogniCorp*, 855 F.3d at 1327.

Also, the claims do not require converting “many” short positions and “many” long positions as Appellant asserts. The conversions may involve only “one” short position and only “one” long position. App. Br. 24–28 (Claims App.). Consequently, a “matched trade file” may relate to only “one” short position and only “one” long position. *See Spec.* ¶ 95.

A “matched trade file” relating to only “one” short position and only “one” long position may require more processing—not less processing—downstream than a single direct trade of the underlying instrument from a short position to a long position. That “matched trade file” may require more processing than a single direct trade because that file contains details concerning two trades: first, “a purchase by a clearing house and sale by the exchange member” in the underlying instrument when converting the short position; and second, “a sale by the clearing house and a purchase by the exchange member” in the underlying instrument when converting the long position. App. Br. 24–28 (Claims App.); *see Spec.* ¶¶ 83, 95.

Appellant asserts that the claimed invention “reduces the memory storage needed to manage open futures positions.” App. Br. 17 (emphasis omitted); *see Reply Br.* 1–5, 7–8. Appellant further asserts that “as the cleared open interests are automatically submitted as locked-in trades . . . the cleared open interests are no longer in a pending status on the computer,”

and because “they are no longer pending, the computer no longer needs to allocate memory for storing the often-long-pending interests, thereby freeing up the computer memory to perform other tasks and/or to run more efficiently.” Reply Br. 2–3. According to Appellant, the claimed invention differs from “existing systems that lack the claimed automatic electronic submission feature, which have to maintain and allocate significant amounts of memory for storing pending interests,” thus “consuming valuable memory and processing space.” *Id.* at 3–4.

Appellant does not direct us to any part of the Specification that discusses reducing memory storage as an advantage of the claimed invention. *See* App. Br. 17–22; Reply Br. 1–5, 7–8. Further, Appellant’s assertions concerning the claimed invention reducing memory storage do not reflect the claim language. The claims do not require deleting “the cleared open interests [that] are no longer in a pending status on the computer, . . . thereby freeing up the computer memory.” App. Br. 24–28 (Claims App.). And contrary to Appellant’s assertions, the Specification explains that a “database may contain, **retain**, and provide” data for a locked-in trade facilitation (LITF) engine. Spec. ¶ 207 (emphasis added).

Accordingly, the Examiner determines that “the claimed invention is directed to improving a process running on a computer and not to improvements to the computer itself.” Ans. 10. Appellant’s arguments do not demonstrate error in this determination.

Appellant also argues the “claims provide for a transformation of a particular article into a different state or thing” because converting short and long positions and then creating a “matched trade file” produces “a transformation of data and information that did not exist prior to the

transformation . . . and is a clear and explicit demonstration of a different state or thing.” App. Br. 18 (emphasis omitted). Appellant’s argument does not persuade us of Examiner error because the transformation of data or information does not alone impart patent eligibility under *Mayo/Alice* step two. See, e.g., *Credit Acceptance*, 859 F.3d at 1047, 1056–57; *Synopsys*, 839 F.3d at 1151–52; *Elec. Power Grp.*, 830 F.3d at 1354–56; *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350–51 (Fed. Cir. 2014).

In *Diamond v. Diehr*, the “claims involve[d] the transformation of . . . raw, uncured synthetic rubber, into a different state or thing,” namely, cured synthetic rubber. *Diehr*, 450 U.S. at 184. In contrast to the claims in *Diehr*, the claims here do not include limitations producing an analogous change in a physical object.

Moreover, as noted above, the claims here automate steps for trading cleared open interests. App. Br. 24–28 (Claims App.). The “mere automation of manual processes using generic computers does not constitute a patentable improvement in computer technology.” *Credit Acceptance*, 859 F.3d at 1055.

Appellant asserts that the claims satisfy *Mayo/Alice* step two because they “are applied by use of a particular machine” and “explicitly recite that the claimed steps are indeed performed by the particular (programmed) machine.” App. Br. 19 (emphasis omitted); see Reply Br. 2, 6–7. Appellant further asserts that “the claimed computer is indeed a specialized purpose computer configured to perform the steps accomplishing the special purpose” because “the executed instructions causes [sic] the processor of the claimed processing device to perform the inventive functions that transform

the recited hardware into special purpose components that perform novel and non-obvious activity.” App. Br. 20; *see* Reply Br. 7.

Appellant’s assertions do not persuade us of Examiner error as “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Alice*, 134 S. Ct. at 2358. In *Alice*, “[a]ll of the claims [we]re implemented using a computer,” and the resulting “particular (programmed) machine” failed to suffice for patent eligibility. *Id.* at 2353, 2358–60. Here, “the computer components in claims 1, 11, 21, and 31 perform purely generic computer functions.” Final Act. 5; Ans. 6–7, 9.

Appellant contends that the claims are similar to the claims in the PTO’s abstract idea Example 3, which concerned digital-image processing and satisfied *Mayo/Alice* step two. *See* App. Br. 20–22; PTO January 2015 “Examples: Abstract Ideas” at 7–10 (“2015 Examples”). We disagree.

As an initial matter, Appellant’s contention concerning claim similarity undermines the argument that the claims here are not directed to an abstract idea because the Example 3 claims were directed to an abstract idea. 2015 Examples at 8–10. The Example 3 claims satisfied *Mayo/Alice* step two because they included limitations for generating a “blue noise mask,” comparing each pixel in a “gray scale image” on a pixel-by-pixel basis to a corresponding part of the “blue noise mask” to produce a “binary image array,” and converting the “binary image array” to a “halftoned image.” *Id.* at 7–8. Viewed as an ordered combination, the limitations “improve[d] the functioning of the claimed computer itself” because “the improved blue noise mask allow[ed] the computer to use to less memory than required for prior masks, result[ed] in faster computation time without

sacrificing the quality of the resulting image as occurred in prior processes, and produce[d] an improved digital image.” *Id.* at 9. In contrast to the Example 3 claims, the claims here, as explained above, do not improve the functioning of a computer itself, and they do not produce any kind of improved display. *See* Final Act. 3; Ans. 3. As the Examiner reasons, the “claimed invention is directed to an improvement in the software” for “electronic trading and there is no indication the computer is improved.” Ans. 10.

Appellant asserts that the claims here “are necessarily rooted in computer technology and overcome a computer-centric problem specifically arising in the realm of computer networks similar to the patent-eligible claims in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014).” Reply Br. 2; *see id.* at 1, 4, 8. But *DDR Holdings* does not help Appellant.

In *DDR Holdings*, the Federal Circuit determined that certain claims satisfied *Mayo/Alice* step two because “the claimed solution amount[ed] to an inventive concept for resolving [a] particular Internet-centric problem,” i.e., a challenge unique to the Internet. *DDR Holdings*, 773 F.3d at 1257–59; *see Synopsys*, 839 F.3d at 1151 (noting that “[i]n *DDR Holdings*, we held that claims ‘directed to systems and methods of generating a composite web page that combines certain visual elements of a ‘host’ website with content of a third-party merchant’ contained the requisite inventive concept”). In *DDR Holdings*, the Federal Circuit explained that the patent-eligible claims specified “how interactions with the Internet are manipulated to yield a desired result . . . that overrides the routine and conventional sequence of events ordinarily triggered by the click of a hyperlink.” *DDR Holdings*,

773 F.3d at 1258. The court reasoned that those claims recited a technological solution “necessarily rooted in computer technology” that addressed a “problem specifically arising in the realm of computer networks.” *Id.* at 1257.

According to the Federal Circuit, “*DDR Holdings* does not apply when . . . the asserted claims do not ‘attempt to solve a challenge particular to the Internet.’” *Smart Sys. Innovations, LLC v. Chi. Transit Auth.*, 873 F.3d 1364, 1375 (Fed. Cir. 2017) (quoting *In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016)). The claims here do not attempt to solve a challenge particular to the Internet and do not contain a similar inventive concept as the patent-eligible claims in *DDR Holdings*. Among other things, the claims here do not require a computer network for transmitting or receiving data. App. Br. 24–28 (Claims App.). They require a generic processor to perform functions capable of being performed with pen and paper. *Id.*; Ans. 10. Thus, in light of the above, we agree with the Examiner the claims lack an “inventive concept” sufficient to transform them into significantly more than a patent-ineligible abstract idea.

SUMMARY

For the reasons discussed above, Appellant’s arguments have not persuaded us of any error in the Examiner’s findings or conclusions under *Mayo/Alice* step one or step two. Hence, we sustain the § 101 rejection of claims 1, 11, 21, and 31.

DECISION

We affirm the Examiner’s decision to reject claims 1, 11, 21, and 31 under 35 U.S.C. § 101.

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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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED