



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/246,775	10/07/2008	Andrew P. Czupek	4672-08699BUS	6756
12684	7590	05/15/2018	EXAMINER	
Lempia Summerfield Katz LLC/CME 20 South Clark Street Suite 600 Chicago, IL 60603			GREGG, MARY M	
			ART UNIT	PAPER NUMBER
			3697	
			NOTIFICATION DATE	DELIVERY MODE
			05/15/2018	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mail@lsk-iplaw.com  
docket-us@lsk-iplaw.com  
pair\_lsk@firsttofile.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* ANDREW P. CZUPEK, BRYAN T. DURKIN,  
THOMAS G. McCABE, BRIAN M. WOLF,  
DONALD M. CUBA, JONATHAN G. KRONSTEIN, and  
TROY C. KANE<sup>1</sup>

---

Appeal 2017-002005  
Application 12/246,775  
Technology Center 3600

---

Before JAMES R. HUGHES, ERIC S. FRAHM, and  
MATTHEW J. McNEILL, *Administrative Patent Judges*.

HUGHES, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a rejection of claims 1–23. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

---

<sup>1</sup> According to Appellants, the real party in interest is Chicago Mercantile Exchange Inc. App. Br. 2.

*Appellants' Invention*

The invention generally relates to “matching and allocating orders in an electronic trading environment.” Spec. ¶ 50. Independent claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A computer-implemented method of order allocation, the computer-implemented method comprising:

establishing a quantity cap indicating a maximum allowable quantity of lots for an order;

receiving, by a trading host, at least one incoming unfulfilled order from a terminal of a trader, comprising an offer to buy or sell a product, associated with a plurality of lots;

comparing, with the trading host, the plurality of lots associated with the received at least one incoming unfulfilled order with the quantity cap;

designating, with the trading host, at least a portion of the plurality of lots as a priority portion of the plurality of lots when the plurality of lots is less than or equal to the quantity cap;

allocating, with the trading host, the priority portion of the plurality of lots to at least one resting counter order utilizing a first allocation algorithm;

generating, with the trading host, data indicating a first matched trade between the at least one resting counter order and the allocated priority portion of the plurality of lots;

allocating, with the trading host, a remaining portion of the plurality of lots to at least one other resting counter order utilizing a second allocation algorithm; and

generating, with the trading host, data indicating a second matched trade with the other resting counter order and the allocated remaining portion of the plurality of lots;

wherein the designating is performed prior to the allocating of the plurality of lots.

### *Rejections on Appeal*

Claims 1–23 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter.

Claims 1–4, 6–11, 13–15, and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chait (US 7,827,092 B2; issued Nov. 2, 2010), Appellants’ Admitted Prior Art (“AAPA”), Krishna (US 2007/0233301 A1; published Oct. 4, 2007), and Bartko (US 2008/0172319 A1; published July 17, 2008).

Claims 5 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chait, AAPA, Krishna, Bartko, and Borsand (US 7,742,977 B1; issued June 22, 2010).

Claims 12 and 17–21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chait, Krishna, and Bartko.

Claim 23 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Chait, AAPA, and Krishna.

## ANALYSIS

### *Patent-Ineligible Subject Matter*

Appellants argue claims 1–23 together as a group. *See* App. Br. 5–10. We select independent claim 1 as representative in our analysis below.<sup>2</sup>

---

<sup>2</sup> “When multiple claims subject to the same ground of rejection are argued as a group or subgroup by appellant, the Board may select a single claim

Under 35 U.S.C. § 101, a patent may be obtained for “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” The Supreme Court has “long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)).

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S.Ct. at 2355. Assuming that a claim nominally falls within one of the statutory categories of machine, manufacture, process, or composition of matter, the first step in the analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* For example, abstract ideas include, but are not limited to, fundamental economic practices, methods of organizing human activities, an idea of itself, and mathematical formulas or relationships. *Id.* at 2355–57. If the claim is directed to a judicial exception, such as an abstract idea, the second step is to determine whether additional elements in the claim “‘transform the nature of the claim’ into a patent-eligible application.” *Id.* at 2355 (quoting *Mayo*, 566 U.S. at 78). This second step is described as “a search for an “‘inventive concept’”—*i.e.*, an element or combination of elements that is ‘

---

from the group or subgroup and may decide the appeal as to the ground of rejection with respect to the group or subgroup on the basis of the selected claim alone.” 37 C.F.R. § 41.37(c)(iv).

. . . significantly more than . . . the [ineligible concept] itself.” *Id.* at 2355 (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73).

### *Alice* Step One

“[T]he first step in the *Alice* inquiry . . . asks whether the focus of the claims is on the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.” *Enfish*, 822 F.3d 1327, 1335–36. “The abstract idea exception prevents patenting a result where ‘it matters not by what process or machinery the result is accomplished.’” *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1312 (Fed. Cir. 2016) (quoting *O’Reilly v. Morse*, 56 U.S. (15 How.) 62, 113 (1853)). “We therefore look to whether the claims . . . focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.” *McRO*, 837 F.3d at 1314.

Appellants argue, succinctly, that the “claims are directed to the how of doing something; not the what (abstract) of doing something. The claims are not abstract and as such are statutory subject matter.” App. Br. 5. We do not find this argument persuasive. In particular, Appellants have not shown the Examiner failed to identify an abstract idea. Nor have Appellants specifically explained why claim 1 is directed to a technological improvement—“the how of doing something” (*id.*)—as opposed to an abstract idea itself. Appellants assert “the claims recite a specific method for a trading host to quickly, efficiently, and effectively asymmetrically allocate incoming transactions across multiple previously received transactions using different allocation methodologies.” *Id.* However, the

Appeal 2017-002005  
Application 12/246,775

function of “allocat[ing] incoming transactions across multiple previously received transactions using different allocation methodologies” (*id.*) is merely descriptive of an abstract idea itself. That a trading host can perform this function “quickly, efficiently, and effectively” (*id.*) does not specify the way in which the claimed trading host operates to allocate orders. Moreover, performing a function more “quickly, efficiently, and effectively” is the hallmark of a “process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.” *Enfish*, 822 F.3d at 1335–36.

Appellants also argue the “claims do not pre-empt or seek to tie up ‘comparing, designating and allocating orders based on rules’ and as such are not abstract.” App. Br. 5; *see also* Reply Br. 1–3. However, while preemption is the concern that drives the exclusionary principle of judicial exceptions to patent-eligible subject matter, *Alice*, 134 S.Ct. at 2354, preemption is not a separate test of patent-eligibility, but is inherently addressed within the *Alice* framework. *See Ariosa Diagnostics, Inc., v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (“While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.”).

#### *Alice* Step Two

The second step in the *Alice* analysis requires a search for an “inventive concept” that “must be significantly more than the abstract idea itself, and cannot simply be an instruction to implement or apply the abstract idea on a computer.” *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349 (2016). There must be more than “computer functions [that] are ‘well-understood, routine, conventional

activit[ies]’ previously known to the industry.” *Alice*, 134 S.Ct. at 2359 (second alteration in original) (quoting *Mayo*, 566 U.S. at 73).

Appellants argue “the claims include meaningful limitations that are other than what is well-understood, routine and conventional in the field,” and that “when taken as an ordered combination, provide unconventional steps that confine the abstract idea to a particular useful application.” App. Br. 5–6. We disagree with Appellants. The claimed “terminal of a trader” and “trading host” are not imbued with any specific technological functionality so as to require any more than conventional computers. Although the “trading host” is recited as performing a number of steps—e.g., “receiving . . . at least one incoming unfulfilled order from a terminal of a trader,” “comparing . . . the plurality of lots . . . with the quantity cap,” “designating . . . at least a portion of the plurality of lots as a priority portion . . . when the plurality of lots is less than or equal to the quantity cap,” “allocating . . . the priority portion . . . to at least one resting counter order utilizing a first allocation algorithm,” and “generating . . . data indicating a first matched trade”—these steps are not claimed with such specificity so as to require more than conventional computer networking capabilities or computer processing capabilities such as performing logic and arithmetic operations. While claim 1 recites using “a first allocation algorithm” and “a second allocation algorithm” for the “allocating” steps, the claim does not tell us what the algorithms are.

Considering the steps of claim 1 as an ordered combination, we see no unconventional arrangement of conventional computers. Rather, claim 1 simply requires a “trading host” that can receive orders from a “terminal of a trader,” and thereafter perform a sequence of steps for executing the order. The sending of data from one computer to another for processing

Appeal 2017-002005  
Application 12/246,775

hardly constitutes an unconventional arrangement. *Cf. Bascom Global Internet Services Inc., v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (“Filtering content on the Internet was already a known concept, and the patent describes how its particular arrangement of elements is a technical improvement over prior art ways of filtering such content.”). Accordingly, claim 1 does not include more than “computer functions [that] are ‘well-understood, routine, conventional activit[ies]’ previously known to the industry.” *Alice*, 134 S.Ct. at 2359 (second alteration in original) (quoting *Mayo*, 566 U.S. at 73).

Appellants also argue that, “as with the invention at issue in the *DDR* case, which was directed to solving an Internet-centric problem, Appellants’ claimed invention [is] similarly patentable, and directed to solving a transaction/data processing-centric problem.” App. Br. 8. We disagree with Appellants that the instant claims are analogous to those in *DDR Holdings*. In *DDR Holdings, LLC v. Hotels.com, L.P.*, the Federal Circuit found that claims drawn to “generating a composite web page that combines certain visual elements of a ‘host’ website with content of a third-party merchant” provided a solution “necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” 773 F.3d 1245, 1248, 1257 (Fed. Cir. 2014). In contrast, Appellants’ invention solves a problem of selecting and implementing an algorithm or algorithms to fulfill orders. *See Spec.* ¶ 9. The Specification provides the following:

*Regardless of the specific configuration of a particular trading platform, each of the trading platforms will typically include one or more matching algorithms, methods and schemes for allocating incoming orders to other incoming or resting orders. Because incoming orders will rarely be identical to, i.e.,*

have the same quantities, prices and other variables, the other incoming or resting orders, the algorithms, methods and schemes are, for example, intended: to allocate orders to promote and/or reward market makers; to assure an equitable distribution of the incoming order; and to regulate the trading volume.

*Id.* (emphasis added).

As markets and technologies available to traders evolve, *the allocation algorithms used by trading hosts must also evolve* accordingly to enhance liquidity and price discovery in markets.

Spec. ¶ 24 (emphasis added). As the Specification makes clear, what is important to Appellants' invention is not the trading platform, but the algorithms. That is, Appellants' invention aims to improve the algorithms used to fulfill orders, not the technology. Accordingly, claim 1 does not embody a solution "necessarily rooted in computer technology" to overcome a computer-based problem as in *DDR Holdings*. 773 F.3d at 1257. To the extent Appellants argue the algorithms described in the Specification provide a software-based solution to a computer programming problem (and that *DDR Holdings* should apply on this basis) (*see* App. Br. 8–9; Reply Br. 6–7), we disagree. Appellants have not pointed to any specific computer programming algorithms described in the Specification. Rather, the portion of the Specification identified in the "Summary of Claimed Subject Matter" in the Appeal Brief (App. Br. 2–3), for example, describes a "pro-rata allocation algorithm 1700" that is essentially a mathematical algorithm comprised of mental steps, not a computer program. Spec. ¶¶ 216–224. In any event, claim 1 neither identifies algorithms described in the Specification that are used to fulfill orders, nor specifically defines any algorithms.

We are, therefore, not persuaded the Examiner erred in rejecting claim 1, and claims 2–23 grouped therewith, as patent-ineligible.

*Obviousness*

Appellants contend, among other things, that “Krishna relates ‘generally to the automation of semiconductor fabrication operations’” and therefore “does not include ‘a similar or analogous device (method, or product).’” App. Br. 11–12. We agree with Appellants that Krishna is not analogous art, and therefore we conclude it would not have been obvious to combine Krishna with the other references to make the claimed invention.

Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor’s endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.

*In re Klein*, 647 F.3d 1343, 1348 (Fed. Cir. 2011) (quoting *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004)). Here, the field of endeavor relates to “matching and allocating orders in an electronic trading environment.” Spec. ¶ 50. Krishna, in contrast, relates to assigning semiconductor wafer lots to specific tools or entities within a semiconductor fabrication facility. *See* Krishna, Abstract. We find the differences between the fields of endeavor of the present invention and Krishna are readily apparent, and we need not delve into greater detail with respect to this prong of the analogous art inquiry.

Regarding the second prong, the Federal Circuit has held that “[a] reference is reasonably pertinent if . . . it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s

Appeal 2017-002005  
Application 12/246,775

attention in considering his problem.” *Klein*, 647 F.3d at 1348 (quoting *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992)). That is, “[i]f a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection.” *Id.* Krishna describes a controller in a semiconductor fabrication facility that uses an algorithm to “assign lots of wafers to be processed to entities 102 available or reasonably assumed to be available to process those lots.” Krishna, ¶13. Further, the lots may be sorted according to priorities where, for example, “one sorting option may be to assign certain ‘hot lots’ to the top priority and the rest of the lots may be sorted by time of arrival at a given entity or process step.” Krishna, ¶ 23. We find, however, Krishna does not have the same purpose as Appellants’ invention, and therefore would not have commended itself to Appellants’ attention. Although both Krishna and the present invention relate to matching things together, they could only be said to have the same purpose at an unreasonably high level of abstraction. Krishna describes a way of assigning semiconductor wafer lots to tools or entities for processing the lots in order to solve, in essence, a scheduling and workflow problem. In contrast, Appellants’ invention concerns the problem of fulfilling incoming orders with existing counter orders on a trading exchange where “incoming orders will rarely be identical to, i.e., have the same quantities, prices and other variables, the other incoming or resting orders.” Spec. ¶ 9. In other words, the respective problems addressed in Krishna and the present invention are different in kind because Krishna matches physical work lots with tools that can process the work lots, whereas the present invention matches and allocates portions of incoming orders to existing counter orders.

Accordingly, Krishna is not analogous art because it neither relates to the same field of endeavor as Appellants' invention, nor is reasonably pertinent to the problem with which Appellants were involved. Each of the Examiner's rejections under § 103(a) relies upon Krishna. Therefore, we are constrained by the record to find the Examiner erred in rejecting claims 1–23 as obvious.

### CONCLUSIONS

Under 35 U.S.C. § 101, Appellants have not shown the Examiner erred in rejecting claims 1–23.

Under 35 U.S.C. § 103(a), we are persuaded the Examiner erred in rejecting claims 1–23.

### DECISION

We affirm the Examiner's decision to reject claims 1–23 because we have affirmed at least one ground of rejection for each of the claims. *See* 37 C.F.R. § 41.50(a)(1) (“The affirmance of the rejection of a claim on any of the grounds specified constitutes a general affirmance of the decision of the examiner on that claim, except as to any ground specifically reversed.”).

No time period for taking any subsequent action in connection with this appeal may be extended. *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED