



# 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.
11/947,114	11/29/2007	Hironori Takuechi	JP920060068US1	1333
67232	7590	07/01/2020	EXAMINER	
CANTOR COLBURN LLP - IBM ARC DIVISION			ELKASSABGI, ZAHRA	
20 Church Street			ART UNIT	
22nd Floor			PAPER NUMBER	
Hartford, CT 06103			3623	
			NOTIFICATION DATE	
			DELIVERY MODE	
			07/01/2020	
			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):

usptopatentmail@cantorcolburn.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* HIRONORI TAKUECHI and  
DAISUKE TAKUMA

---

Appeal 2019-005997  
Application 11/947,114  
Technology Center 3600

---

Before BIBHU R. MOHANTY, NINA L. MEDLOCK, and  
BRUCE T. WIEDER, *Administrative Patent Judges*.

MOHANTY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1, 3, 5–13, 15, and 18–20. We have jurisdiction under 35 U.S.C. § 6(b).

SUMMARY OF THE DECISION

We AFFIRM.

---

<sup>1</sup> We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as International Business Machines Corporation. (Appeal Br. 3).

### CLAIMED SUBJECT MATTER

The Appellant's claimed invention relates to trend analysis (Spec., para. 1). Claim 9, reproduced below with the italics added, is representative of the subject matter on appeal.

9. A method for evaluating a trend analysis system, comprising the steps of:
- performing, using a first device with a first device computer processor:
    - extracting relationships, and knowledge among attributes of data pieces in a data set, wherein the knowledge indicates presence or absence of trends among the attributes of the data pieces in the data set;*
    - performing, using a second device with a second device computer processor:
      - importing the relationships, and knowledge among attributes of data pieces in a data set from the first device via a communications interface;*
      - setting allowable ranges for false positives and false negatives for said relationships;*
      - computing an accuracy for the trend analysis system as a function of said errors that fall within said allowable ranges;*
      - performing a tuning of parameters of the trend analysis system based on said computed accuracy, for the trend analysis system, based on whether the increasing or decreasing would increase or decrease the accuracy of the trend analysis system, wherein the trend analysis system modifies a confidence coefficient based on response to a change in a measured value of the accuracy, and uses the modified confidence coefficient to obtain new trend data, new relationship data, and new knowledge data from the data set;*
      - wherein, when a decrease of the confidence coefficient results in a corresponding increase of the accuracy, the confidence coefficient is further decreased;*
      - wherein, when an increase of the confidence coefficient results in a corresponding increase of the accuracy, the confidence coefficient is further increased;*

*terminating said parameter tuning when said computed accuracy satisfies a dynamically created termination condition;*  
and  
*transmitting the computed accuracy for the trend analysis system to the external communication device via the communication interface.*

#### THE REJECTION

The following rejections is before us for review:

Claims 1, 3, 5–13, 15, and 18–20 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

#### FINDINGS OF FACT

We have determined that the findings of fact in the Analysis section below are supported at least by a preponderance of the evidence<sup>2</sup>.

#### ANALYSIS

##### *Rejection under 35 U.S.C. § 101*

The Appellant argues that the rejection of claim 9 is improper because the claim is not directed to an abstract idea (Appeal Br. 16, 17, 21). The Appellant argues further that the claim is integrated into a practical application (Appeal Br. 17–20, 21–23).

In contrast, the Examiner has determined that the rejection of record is proper (Final Act. 4–6; Ans. 4–9).

---

<sup>2</sup> See *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Patent Office).

We agree with the Examiner. 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: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g.*, *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court’s two-step framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is “directed to.” *See Alice*, 573 U.S. at 219 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk . . . .”).

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 192 (1981)); “tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S.

252, 267–68 (1854)); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that “[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula.” *Diehr*, 450 U.S. at 187; *see also id.* at 191 (“We view respondents’ claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula.”). Having said that, the Supreme Court also indicated that a claim “seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment.” *Id.* (internal citation omitted) (citing *Benson* and *Flook*); *see, e.g., id.* at 187 (“It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”).

In January 2019, the USPTO 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, i.e., 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.” (*see* Guidance, 84 Fed. Reg. at 54; *see also* 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.

If the claim is “directed to” an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where “we must examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221 (citation omitted). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* (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 Specification at paragraph 1 states that the invention “relates to trend analysis.” Here, the Examiner has determined that the claim sets forth a mental process (Ans. 4). We substantially agree with the Examiner. We determine that claim 9 sets forth the subject matter in italics above which is drawn to: [1] “extracting relationships, and knowledge . . . in a data set, wherein the knowledge indicates presence or absence of trends”; [2] “importing the relationships, and knowledge among attributes of data

pieces in a data set”; [3] “setting allowable ranges for false positives and false negatives for said relationships”; [4] “computing an accuracy for the trend analysis system as a function of said errors”; [5] “performing a tuning of parameters of the trend analysis system based on said computed accuracy”; [6] “wherein, when a decrease of the confidence coefficient results in a corresponding increase of the accuracy, the confidence coefficient is further decreased”; [7] “wherein, when an increase of the confidence coefficient results in a corresponding increase of the accuracy, the confidence coefficient is further increased”; [8] “terminating said parameter tuning when said computed accuracy satisfies a dynamically created termination condition; and [8] “transmitting the computed accuracy for the trend analysis system to the external communication device” which describes the concept of a mathematical concept or mental process, i.e. a judicial exception. In *Bilski*, a mathematical formula for hedging was held to be an abstract concept. *Bilski v. Kappos*, 560 U.S. at 599. In *Flook*, a formula for computing an alarm limit was held to be a mathematical algorithm or formula. *Parker v. Flook*, 437 U.S. at 585.

We next determine whether the claim recites additional elements that integrate the judicial exception into a practical application. *See* Guidance, 84 Fed. Reg. at 54–55. The Guidance references the MANUAL OF PATENT EXAMINING PROCEDURE (“MPEP”) §§ 2106.05(a)–(c) and (e)–(h).

Here, the claim does not improve computer functionality, improve another field of technology, utilize a particular machine, or effect a particular physical transformation. Rather, we determine that nothing in the claim imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort to monopolize the judicial exception.

For example, in the claim, the additional elements beyond the abstract idea are the recited first and second device computer processors, communications interface, and external communication device. The claimed limitations of computer components “do not purport to improve the functioning of the computer itself,” do not improve the technology of the technical field, and do not require a “particular machine.” Rather, they are performed using generic computer components. Further, the claim as a whole fails to effect any particular transformation of an article to a different state. The recited steps in the claim fail to provide meaningful limitations to limit the judicial exception. In this case, the claim merely uses the claimed computer elements as a tool to perform the abstract idea.

The Appellant, at page 19 of the Appeal Brief, has also cited to *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016) but the claims in that case are distinguished from this case in being directed to rules for lip sync and facial expression animation.

Considering the elements of the claim both individually and as “an ordered combination” the functions performed by the computer system at each step of the process are purely conventional. Each step of the claimed method does no more than require a generic computer to perform a generic computer function. Thus, the claimed elements have not been shown to integrate the judicial exception into a practical application as set forth in the Guidance which references MPEP §§ 2106.05(a)–(c) and (e)–(h).

Turning to the second step of the *Alice* and *Mayo* framework, we determine that the claim does not contain an inventive concept sufficient to “transform” the abstract nature of the claim into a patent-eligible application.

Considering the claim both individually and as an ordered combination fails to add subject matter beyond the judicial exception that is not well-understood, routine, and conventional in the field. Rather the claim uses well-understood, routine, and conventional activities previously known in the art and they are recited at a high level of generality. The Specification at paragraphs 40–47 for example describes using conventional computer components such as a CPU, memory, controller, disk drive, GUI, and software in a conventional manner. The claim specifically includes recitations for computers to implement the method but these computer components are all used in a manner that is well-understood, routine, and conventional in the field. Here, the claimed generic computer components which are used to implement the claimed method are well understood, routine, or conventional in the field. Here, the claim has not been shown to be “significantly more” than the abstract idea.

For these above reasons, the rejection of claim 9 is sustained. The Appellant has provided the same arguments for the remaining claims drawn to similar subject matter and the rejection of these claims is sustained for the same reasons given above.

#### CONCLUSIONS OF LAW

We conclude that Appellant has not shown that the Examiner erred in rejecting claims 1, 3, 5–13, 15, and 18–20 under 35 U.S.C. § 101.

DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 3, 5–13, 15, 18–20	101	Eligibility	1, 3, 5–13, 15, 18–20	

TIME PERIOD FOR RESPONSE

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