UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/828,504	03/14/2013	Jagdeep Singh Sahota	80083-867528 (079710USD1C	1001

66945	7590	06/03/2019

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ART UNIT	PAPER NUMBER
3693	

NOTIFICATION DATE	DELIVERY MODE
06/03/2019	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JAGDEEP SINGH SAHOTA and CHRISTIAN AABYE

Appeal 2018-005184
Application 13/828,504
Technology Center 3600

Before JOSEPH L. DIXON, HUNG H. BUI, and JON M. JURGOVAN,
Administrative Patent Judges.

DIXON, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants[1] appeal under 35 U.S.C. § 134(a) from a rejection of
claims 1–7, 10, and 26–31. We have jurisdiction under 35 U.S.C. § 6(b).
We reverse.

CLAIMED INVENTION

The claims are directed to a method and payment device "for
dynamically generating a verification value for verifying the authenticity of

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[1] Appellants indicate that Visa International Service Association is the real
party in interest. (App. Br. 2).

a payment service deployed on a payment device, such as an integrated

circuit credit card, each time the payment service is utilized in a

transaction," wherein the "verification value is used by a service provider to

verify the authenticity of the transaction." (Spec. ¶ 9, Abstract). Claim 1,

reproduced below, is illustrative of the claimed subject matter:

> 1. A method of creating and processing a verification value for a transaction, the method comprising:
>
> creating, by a microprocessor of a payment device, a base record comprising a data value comprising an account number;
>
> overlaying, by the microprocessor of the payment device, an application transaction counter (ATC), or hash value based on transaction data for the transaction over a portion of the data value;
>
> splitting, by the microprocessor, the overlaid data value into at least a first block and a second block;
>
> encrypting, by the microprocessor, the first block using a first encryption key;
>
> performing, by the microprocessor, at least an exclusive-OR (XOR) operation on the encrypted first block and the second block to produce a first result;
>
> encrypting, by the microprocessor, the first result using the first encryption key to produce a second result;
>
> selecting, by the microprocessor, one or more values based at least in part on the second result as the verification value for the transaction; and
>
> transmitting, from the payment device through a contact-based or contactless interface to a service provider computer via a POS terminal, the verification value for the transaction,

wherein the service provider computer is configured to approve or disapprove of the transaction based on a comparison of the transmitted verification value to a second verification value independently generated from the transaction data at the service provider computer.

App. Br. 26–30 (Claims Appendix).

REJECTION

Claims 1–7, 10, and 26–31 stand rejected under 35 U.S.C. § 101 because the claimed invention is (1) directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea); and (2) not directed to significantly more than the abstract idea itself.

ANALYSIS
35 U.S.C. § 101

We have reviewed the Examiner's rejection in light of Appellants' contentions and the evidence of record. We concur with Appellants' contention that the Examiner erred in this case.

Section 101 of the Patent Act provides "[w]hoever 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. 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. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (internal quotation marks and citation omitted).

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, 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 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that "a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 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.* (citing *Benson* and *Flook*); *see, e.g., id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (citation omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

The PTO recently published revised guidance on the application of § 101. USPTO, 2019 REVISED PATENT SUBJECT MATTER ELIGIBILITY GUIDANCE, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Memorandum"). Under the guidance set forth in the Memorandum, 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) (Step 2A, Prong 1); 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)) (9th Ed., Rev. 08.2017, 2018) (Step 2A, Prong 2).

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. (Step 2B).

See Memorandum, 84 Fed. Reg. at 54–56.

Turning to Step 2B of the Memorandum, "[t]he second step of the *Alice* test is satisfied when the claim limitations 'involve more than performance of []well-understood, routine, [and] conventional activities previously known to the industry.'" *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018) (quoting *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1347–48 (Fed. Cir. 2014) and *Alice*, 573 U.S. at 225). "Whether something is well-understood, routine, and conventional to a skilled artisan at the time of the patent is a factual determination." *Berkheimer*, 881 F.3d at 1369.

In this case, the Examiner determines:

The additional element(s) or combination of elements in the claim(s) other than the abstract idea per se amount(s) to *no more than*: (i) mere instructions to implement the idea on a computer, and/or (ii) *recitation of generic computer structure that serves to perform generic computer functions that are well-understood,*

routine, and conventional activities previously known to the pertinent industry.

(Final Act. 4 (emphasis added)). The Examiner further determines:

the only inventive concept in the claims is the particular algorithm and not the general process. *The process of comparing two verification values to authorize or refuse a transaction is well-understood, routine and conventional.* The use of cryptographic algorithms to scramble communication has been *well known* since World War II. RSA Public Key Cryptographic Algorithm was invented in the 1980s. The use of dynamic card verification values (dCVV) was invented in the mid-1990s jointly by the EMV (Europay Mastercard Visa) Consortium. Therefore, *Appellant's sole contribution to this pre-existing verification process, as recited in the Specification and Claims, is to supply a particular mathematical algorithm.*

. . .

the current claims. . . . *use existing means for preventing fraud such as dynamic verification, encryption, decryption, etc. The technology for prevent[ing] skimming fraud is well-understood, routine and conventional: encrypting, encoding, decrypting, decoding, hashing, etc.* . . . the particular *claimed algorithm merely utilizes routine cryptographic functions to transform the data.* . . . [T]he use of cryptographic algorithms to scramble data to prevent snoopers dates back to the World War II. The claimed invention does not offer anything new by way of a technical process that was not already known or practiced.

. . .

[T]he principle of encrypting transaction data to prevent skimming does not supply an inventive concept because *the concept of applying cryptographic algorithms to perform data transformation is well-understood, routine and conventional. The algorithm used here consists of a series of standard data transformation steps* such as overlaying, splitting, encrypting and performing XOR operation of card transaction data.

(Ans. 9–10, 12–14 (emphases added)).

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However, the Examiner's remarks (*supra*) have not provided the evidence required by *Berkheimer* to support the Examiner's determinations of well-understood, routine, and conventional activities in Appellants' claims. *See Berkheimer*, 881 F.3d at 1369. Rather, the Examiner merely provides conclusory and high-level general statements (Ans. 9–10, 12–14; Final Act. 4), which are insufficient for meeting the *Berkheimer* requirement. *See Berkheimer*, 881 F.3d at 1369–70. In particular, we agree with Appellants (Reply Br. 7–8)[2] that the Examiner has not provided any of the four categories of information required by the Memorandum of Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*) ("*Berkheimer* Memorandum"):

1. A citation to an express statement in the specification or to a statement made by an applicant during prosecution that demonstrates the well-understood, routine, conventional nature of the additional element(s). . . .
2. A citation to one or more of the court decisions discussed in MPEP § 2106.05(d)(II) as noting the well-understood, routine, conventional nature of the additional element(s).
3. A citation to a publication that demonstrates the well-understood, routine, conventional nature of the additional element(s). . . .
4. A statement that the examiner is taking official notice of the well-understood, routine, conventional nature of the additional element(s). . . .

Berkheimer Memorandum at 3–4.

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[2] Because the Federal Circuit issued the *Berkheimer* decision after Appellants filed the Appeal Brief, Appellants had good cause to raise arguments based on *Berkheimer* in the Reply Brief. *See* 37 C.F.R. § 41.41(b)(2).

As Appellants point out, the Examiner has not provided the requisite evidence (as required by the *Berkheimer* Memorandum) for showing that Appellants' claimed method and arrangement (of a payment device, POS terminal, and service provider computer processing an account number and transaction's data to create and use a verification value for approving the transaction) are well-understood, routine, and conventional. (Reply Br. 3, 7–8; *see also* App. Br. 18). Additionally, "it is unclear how the Examiner makes the assertion that the 'use[] of dynamic card verification values (dCVV) was invented in the mid-1990s'" and "[n]o evidence has been provided to support this assertion." (Reply Br. 6).

Therefore, the Examiner erred with respect to Step 2B of the *Alice* and *Mayo* framework in the Memorandum, and we are constrained by the record to reverse the Examiner's rejection of claims 1–7, 10, and 26–31 on procedural grounds.

CONCLUSION

The Examiner erred in rejecting claims 1–7, 10, and 26–31 based on a lack of patent-eligible subject matter under 35 U.S.C. § 101.

DECISION

For the above reasons, we reverse the Examiner's subject matter eligibility rejection of claims 1–7, 10, and 26–31 under 35 U.S.C. § 101.

REVERSED