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Mastercard International Incorporated c/o Buckley, Maschoff & Talwalkar LLC 50 Locust Avenue New Canaan, CT 06840			RAZA, ZEHRA	
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* JONATHAN R. POWELL

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Appeal 2019-003664  
Application 14/538,548  
Technology Center 3600

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Before RICHARD M. LEBOVITZ, JEFFREY N. FREDMAN and  
JAMIE T. WISZ, *Administrative Patent Judges*.

LEBOVITZ, *Administrative Patent Judge*.

DECISION ON APPEAL

The Examiner rejected the claims under 35 U.S.C. § 101 as lacking patent-eligibility and 35 U.S.C. § 103 as obvious. Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject the claims. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Mastercard International Incorporated. Appeal Br. 2.

## STATEMENT OF THE CASE

The claims stand finally rejected by the Examiner as follows:

1. Claims 3–8 under 35 U.S.C. § 101 because the claimed invention is directed to a judicial exception. Final Act. 4.

2. Claims 3, 6 and 7 under 35 U.S.C. § 103 as obvious in view of Flitcroft et al. (US 2003/0028481 A1, published Feb. 6, 2003) (“Flitcroft”) and Hammad (US 2007/0294182 A1, published Dec. 20, 2007) (“Hammad”). Final Act. 7.

3. Claims 4 and 5 under 35 U.S.C. § 103 as obvious in view of Flitcroft, Hammad, and Saunders (US 7,650,314 B1, issued Jan. 19, 2010) (“Saunders”). Final Act. 9

4. Claim 8 under 35 U.S.C. § 103 as obvious in view of Flitcroft, Hammad, and Brabson et al. (US 8,651,374 B2, issued Feb. 18, 2014) (“Brabson”). Final Act. 10.

We select claim 3 as representative of the appealed claims. Claim 3 is reproduced below (numbering has been added for reference to the limitations in the claim):

3. A method comprising:

[1] receiving a bank identification number (BIN) that defines a range of indicator numbers;

[2] generating a plurality of primary account numbers (PANs) that start with the BIN, all of the PANs having a first uniform length that consists of a first number of digits;

[3] generating a plurality of tokens that start with the BIN, all of the tokens having a second uniform length that consists of a second number of digits that is different from the first number of digits;

[4] receiving an authorization request by a computer;

[5] detecting, by the computer, a number of digits contained in an indicator number included in the authorization request; and

[6] translating the indicator number into a PAN that is different from the indicator number in response to determining by the computer that the detected number of digits equals the second number of digits;

[7] wherein the BIN is used for routing the authorization request via electronic communications in a computerized payment card account system that includes the computer.

## § 101 REJECTION

### Principles of Law

Under 35 U.S.C. § 101, an invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” However, not every discovery is eligible for patent protection. *Diamond v. Diehr*, 450 U.S. 175, 185 (1981). “Excluded from such patent protection are laws of nature, natural phenomena, and abstract ideas.” *Id.* The Supreme Court articulated a two-step analysis to determine whether a claim falls within an excluded category of invention. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014); *Mayo Collaborative Servs. v. Prometheus Labs, Inc.*, 566 U.S. 66, 75–77 (2012).

In the first step, it is determined “whether the claims at issue are directed to one of those patent-ineligible concepts.” *Alice*, 573 U.S. at 217. If it is determined that the claims are directed to an ineligible concept, then the second step of the two-part analysis is applied in which it is asked “[w]hat else is there in the claims before us?” *Id.* The Court explained that this step involves

a search for an ‘inventive concept’ —*i.e.*, 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 (citing from *Mayo*, 566 U.S. at 75–77).

*Alice*, relying on the analysis in *Mayo* of a claim directed to a law of nature, stated that in the second part of the analysis, “the elements of each claim both individually and ‘as an ordered combination’” must be considered “to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 573 U.S. at 217.

The PTO has published revised guidance on the application of 35 U.S.C. § 101. USPTO’s January 7, 2019 Memorandum, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50, 51–57 (2019) (“Eligibility Guidance”). This guidance provides additional direction on how to implement the two-part analysis of *Mayo* and *Alice*.

Step 2A, Prong One, of the 2019 Eligibility Guidance, looks at the specific limitations in the claim to determine whether the claim recites a judicial exception to patent eligibility. In Step 2A, Prong Two, the claims are examined to identify whether there are additional elements in the claims that integrate the exception in a practical application, namely, is there a “meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” 84 Fed. Reg. 54 (2. Prong Two).

If the claim recites a judicial exception that is not integrated into a practical application, then as in the *Mayo/Alice* framework, Step 2B of the Eligibility Guidance instructs us to determine whether there is a claimed inventive concept to ensure that the claims define an invention that is significantly more than the ineligible concept, itself. 84 Fed. Reg. 56. In making this determination, we must consider whether there are specific limitations or elements recited in the claim “that are not well-understood,

routine, conventional activity in the field, which is indicative that an inventive concept may be present” or whether the claim “simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, indicative that an inventive concept may not be present.” 84 Fed. Reg. 56 (footnote omitted).

With these guiding principles in mind, we proceed to determine whether the claimed subject matter in this appeal is eligible for patent protection under 35 U.S.C. § 101.

#### Discussion

Following the first step of the *Mayo* analysis, we find that claim 3 is directed to a method, and therefore falls into one of the broad statutory categories of patent-eligible subject matter under 35 U.S.C. § 101. We thus proceed to Step 2A, Prong One, of the 2019 Eligibility Guidance.

#### Step 2A, Prong One

In Step 2A, Prong One, the specific limitations in the claim are examined to determine whether the claim recites a judicial exception to patent eligibility, namely whether the claim recites an abstract idea, law of nature, or natural phenomenon. The Examiner found the claims are “directed to an abstract idea of generating credit card numbers which according to the *Alice* examining guidelines is a fundamental economic practice.” Final Act. 5. A “fundamental economic practice” is a “method of organizing human activity,” one of the three groupings of abstract ideas identified in the 2019 Eligibility Guidance. Eligibility Guidance, 84 Fed. Reg. 52.

According to Appellant, the “invention has to do with an improvement in computer-based electronic payments processing systems.” Appeal Br. 2. The claim comprises “an authorization request by a computer” (step [4]) of claim 3), which in the context of the claim and Specification, would be understood as a request to use a credit card for an electronic payment. The method determines whether the request comprises an “indicator number,” which when it has a certain number of digits, is translated into primary account number (steps [5], [6]). Subsequently, the request is routed to the appropriate financial institution to make the payment (step [7]). Thus, the steps of the claim, as asserted by Appellant, have to do with electronic payment. Electronic payments are a fundamental economic practice because, as discussed in *Alice*, it is “long prevalent in our system of commerce.” *Alice*, 573 U.S. at 219. Similarly, a payment processing system in *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1378 (Fed. Cir. 2017) was found to be a “fundamental business practice” and ineligible for a patent under § 101 as directed to an abstract idea.

Appellant states that the Examiner erred in designating the claims as reciting an abstract idea, but did not identify a defect in the Examiner’s reasoning. Appeal Br. 6. Accordingly, because we find the Examiner’s analysis to be sound, we conclude that the claim recites as abstract idea.

#### Step 2A, Prong Two

Prong Two of Step 2A under the 2019 Eligibility Guidance asks whether there are additional elements that integrate the exception into a practical application. As in the *Mayo/Alice* framework, we must look at the

claim elements individually and “as an ordered combination” to determine whether the additional elements integrate the recited abstract idea into a practical application. As discussed in the Eligibility Guidance, “[a] claim that integrates a judicial exception in a practical application will apply, rely on, or use the judicial exception in a manner that places a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” Eligibility Guidance, 84 Fed. Reg. 54.

Integration into a practical application is evaluated by identifying whether there are *additional elements* individually, and in combination, which go beyond the judicial exception. *Id.* at 54–55. As explained in the October 2019 Update to Subject Matter Eligibility<sup>2</sup> “first the specification should be evaluated to determine if the disclosure provides sufficient details such that one of ordinary skill in the art would recognize the claimed invention as providing an improvement.” PEG Update 12. According to the PEG Update, the “specification need not explicitly set forth the improvement, but it must describe the invention such that the improvement would be apparent to one of ordinary skill in the art.” *Id.*

We begin by describing the subject matter recited in the claim. Claim 3 comprises [1] receiving a bank identification number (“BIN”). A BIN is used to route a transaction in a payment system to a financial institution. Spec. 1: 14–17. In the second step of the claim, primary account numbers (“PANs”) are generated. The PANs have a uniform length of digits. The

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<sup>2</sup> Available at [https://www.uspto.gov/sites/default/files/documents/peg\\_oct\\_2019\\_update.pdf](https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf) (last accessed Nov. 15, 2019) (“PEG Update”).

Specification explains that PANs typically have a BIN in its first four to six digits to identify the issuing financial institution for the PAN and routing it to the financial institution. Spec. 1: 14–17. Therefore, we understand the PAN in the second step of claim 3 to comprise a BIN. Step [3] is generating tokens which start with the BIN. The Specification explains that the same BIN can be used for the PAN and the token. Spec. 2:1–4; 3:2–9.

The tokens have “a second uniform length that consists of a second number of digits that is different from the first number of digits” (step [3] of claim 3). In other words, the tokens have a different number of digits than the PAN.

In the subsequent steps of the claim, an authorization request having an “indicator number” is received by the computer (step [4]) and the number of digits in the indicator number is detected (step [5]). When the detected number of digits in the indicator number has the same number of digits in the token of step [3], the computer recognizes it as a token and translates the indicator number into PAN (step [6] of claim 3). The BIN portion is subsequently used to route “the authorization request via electronic communications in a computerized payment card account system that includes the computer” (step [7] of claim 3).

The steps of the claim therefore facilitate electronic payment in which a *token* is used in the authorization request to initiate the payment, rather than the primary account number.

The Specification discloses that “tokenization” is a “known concept . . . in which surrogate values (‘tokens’) replace primary account numbers (PANs) during part of the operation of payment systems.” Spec. 1:10–12. The Specification explains that “[o]ne reason for using tokens in place of

PANs is to combat potentially fraudulent activities.” *Id.* at 1:12–13. Claim 3 uses tokenization. *See* step [3]. The Specification discloses that the invention comprises a way of distinguishing between PANs and tokens that does not use a dedicated BIN number as in prior art methods. Spec. 1:24–2:4. This difference is expressly reflected in claim 3 where a token has a different number of digits than the PAN (step [3] of claim 3) and the token is recognized when it is determined that the indicator number received by a computer in an authorization request has a different number of digits than a PAN (steps [5], [6]). Appellant consistently argues in the Appeal Brief:

More specifically, the present invention improves the dissemination and handling of payment tokens in a computerized/electronic-messaging payment card account system. The present invention proposes that processing of payment tokens versus conventional payment account numbers (“PANs”, a/k/a “primary account numbers”) be organized around the length in digits of tokens versus PANs, rather than being organized around separate dedicated BIN ranges for tokens and PANs. This novel approach allows for more efficient use of BINs in a computerized/electronic messaging payment card account system, and therefore may forestall a shortage of BINs that might otherwise arise.

Appeal Br. 6.

The issue in the § 101 rejection is whether the improvement of using the number of digits in an indicator number to identify a token is the type of improvement to a technological process that imparts eligibility to the claims. In our opinion, it does not.

The claimed improvement to the electronic payment system does not improve how a computer functions as did the claims in *Finjan, Inc. v. Blue Coat Sys.*, 879 F.3d 1299 (Fed. Cir. 2018) and *Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc.*, 880 F.3d 1356 (Fed. Cir. 2018). In *Finjan*,

879 F.3d at 1304–05, the claimed “behavior-based” approach to virus scanning improved the computer’s function by allowing the computer to recognize potential viral threats. In *Core Wireless*, 880 F.3d at 1363, the court found that the “efficiency of using the electronic device” was improved by a menu system and “user interface” which improved navigation through various views and windows on the computer which the court found to be “an improvement in the functioning of computers.” Recognizing a token by how many digits it has does not change the way a computer operates or the way a user operates the computer.

Appellant cited *Enfish, Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016) to support their contention that the claims are eligible for a patent. Appeal Br. 4, 6. In *Enfish*, the claims were directed to a data storage and retrieval system for a computer memory. *Enfish*, 822 F.3d at 1336. The system comprised a system for configuring the memory according to logical table. *Id.* The court found that the claimed “self-referential table functions differently than conventional database structures.” *Id.* at 1337. The court found the claims were not simply directed to the concept of organizing information, but instead “are directed to an improvement in the functioning of a computer.” *Id.* at 1338. Specifically, the court found that “self-referential table recited in the claims on appeal is a specific type of data structure designed to improve the way a computer stores and retrieves data in memory.” *Id.* at 1339.

Rejected claim 3 does not improve computer technology as it did in *Finjan*, *Core Wireless*, and *Enfish*. Rather, the improvement is to the way the computer determines that an indicator number in an authorization request is a token. The computer, itself, is not improved by giving users a better

experience as in *Core Wireless*, by imparting an ability to detect potential viral threats as in *Finjan*, or by improving computer memory as in *Enfish*.

In *SAP America, Inc. v. Investpic, LLC*, 890 F.3d 1016, 1022 (Fed. Cir. 2018) the court held “the focus of the claims is not any improved computer or network, but the improved mathematical analysis; and indeed, the specification makes clear that off-the-shelf computer technology is usable to carry out the analysis.” The court explained:

We readily conclude that there is nothing in the claims sufficient to remove them from the class of subject matter ineligible for patenting and transform them into an eligible application. What is needed is an inventive concept in the non-abstract application realm.

*SAP*, 890 F.3d at 1022.

Here, the improvement is to the method by which an indicator is recognized as being a token – by counting the number of digits in the indicator number and determining that it is a token when it has the correct number of digits characteristic of a token. Compare steps [3], [6] of claim 3. The improvement is integral to the abstract idea of organizing human activity and therefore is not to “non-abstract application realm.” *SAP*, 890 F.3d at 1022.

The recognized token is used to initiate payment without electronically sending the primary account number, itself. The improvement is to the payment transaction, not to the computer on which it is accomplished. It is not a method “necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of” payment transactions. *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014).

As discussed above, an additional element, beyond the abstract idea of organizing human activity, is necessary to integrate the idea into a practical application. *See supra* at pp. 3–4, 6–7. The improvement asserted by Appellant in recognizing a token by the number of digits is a part of the implementation of the payment system and represents the abstract idea, itself. Therefore, this step cannot serve as the “additional element” necessary to integrate the abstract idea into a practical application.

Steps [2] and [3] involve generating the PANs and tokens. Claim [7] involves routing the authorization request. Appellant did not argue that these steps serve to integrate the abstract idea into a practical application. Rather, they appear to be “insignificant extra-solution activity” and insufficient to confer eligibility on the claim. Eligibility Guidelines, 84 Fed. Reg. 55.

Consequently, we conclude that the abstract idea is not integrated into a practical application.

#### Step 2B

Because we determined that the judicial exception is not integrated into a practical application, we proceed to Step 2B of the Eligibility Guidance, which asks, as in the *Mayo/Alice* framework, whether there is an inventive concept. In making this Step 2B determination, we must consider whether there are specific limitations or elements recited in the claim “that are not well-understood, routine, conventional activity in the field, which is indicative that an inventive concept may be present” or whether the claim “simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, indicative that an inventive concept may not be present.”

Eligibility Guidance, 84 Fed. Reg. 56 (footnote omitted). We must also consider whether the combination of steps perform “in an unconventional way and therefore include an ‘inventive step,’ rendering the claim eligible at Step 2B.” *Id.* In this part of the analysis, we consider “the elements of each claim both individually and ‘as an ordered combination’” and “determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 573 U.S. at 217.

Appellant has not established that the claims, when considered as an ordered combination, provide “an inventive” step. Steps [2] and [3] involve generating the PANs and tokens. Appellant does not argue that these steps are performed in an unconventional way. These steps also do not affect how step [6] is in which the indicator number is translated into a PAN when the token is recognized by the number of digits it contains.

Step [4] is receiving an authorization request and step [5] is detecting the number of digits of the indicator number which is part of the request. These steps do not change how step [6] is performed.

Neither the Specification nor Appellant has identified anything in the steps alone or combined that enables the determination that the indicator number is a token to be performed in a non-conventional, inventive way. The “translating” step in step [6] is described in the Specification as being accomplished by looking up the PAN in database (“token vault”) that corresponds to the token. Spec. 12:3–5; 14:11–21. Appellant did not establish that using a database to look up a PAN is inventive and unconventional, alone, or in combination with the other steps in the claim. Accordingly, we conclude that claim 3 does not provide an inventive step.

### Summary

For the foregoing reasons, the rejection of claim 3 as lacking patent eligibility under 101 is affirmed. Claims 4–8 fall with claim 3. Appeal Br. 5.

### § 103 REJECTIONS

The Examiner found that Flitcroft describes steps [1], [2], and [4]–[7] of claim 3, but not step [3] of “generating a plurality of tokens that start with the BIN, all of the tokens having a second uniform length that consists of a second number of digits that is different from the first number of digits.” Final Act. 8. For this step, the Examiner cited Hammad which the Examiner found disclosed the claimed step. *Id.*

Appellant argues that Flitcroft teaches away from the claimed invention because it discloses that limited use cards have the same number of digits as a conventional credit card, which is “the opposite from one feature of claim 3, according to which PANs and tokens are formatted with different numbers of digits.” Appeal Br. 9 (citing Flitcroft ¶ 234). Appellant also argues that Hammad does not describe this step as found by the Examiner (*id.* at 9, n.6).

We agree with Appellant that the Examiner has not established that the claims are *prima facie* obvious in view of Flitcroft and Hammad. Flitcroft, as discussed by Appellant, discloses that “limited use card numbers share the same format as existing credit card numbers.” Flitcroft ¶ 234. A “limited use card number” is the element identified by the Examiner as the indicator number of step [5] of claim 3. Final Act. 8–9. Thus, because the “format” is the same, the number of digits in the indicator number would be

the same as the number as in the PAN, not *different* as recited in step [3] of claim 3.

The Examiner cited paragraphs 35 and 58 of Hammad as describing [3] generating tokens “having a second uniform length that consists of a second number of digits that is different from the first number of digits.” In paragraphs 33 and 35, Hammad teaches modifying the numbers in a primary PAN to create a secondary PAN, but does not disclose changing the number of digits in the secondary PAN. Paragraph 58 of Hammad discloses that the secondary PAN – a token – can be modified to have more or less digits. However, we have not been directed to a teaching in Hammad where the number of digits in the secondary PAN identifies it as a token to be translated into primary PAN as required by step [6] of claim 3. The Examiner pointed to various disclosures in Flitcroft asserted to teach this step of the claim. Ans. 7. We have reviewed these disclosures carefully, and find no support for the Examiner’s finding that [6] “translating the indicator number into a PAN that is different from the indicator number in response to determining by the computer that the detected number of digits equals the second number of digits” is disclosed or suggested by Flitcroft alone or in combination with Hammad.

The obviousness rejection of claim 3 and dependent claims 6 and 7 is reversed. The obviousness rejections of claims 4, 5, and 8 are also reversed for the same reason, and because the additionally cited publications were not cited by the Examiner to make up for the deficiencies in Flitcroft and Hammad.

CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
3-8	101	Eligibility	3-8	
3, 6, 7	103	Flitcroft, Hammad		3, 6, 7
4, 5	103	Flitcroft, Hammad, Saunders		4, 5
8	103	Flitcroft, Hammad, Brabson		8
<b>Overall Outcome</b>			3-8	

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)(1)(iv).

AFFIRMED