IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

TQP DEVELOPMENT, LLC,	§	
	§	
Plaintiff,	§	
	§	
v.	§	CASE NO. 2:12-CV-180-WCB
	§	
	§	
INTUIT INC.,	§	
	§	
Defendant.	§	

MEMORANDUM OPINION AND ORDER

Before the Court is Defendant Intuit, Inc.'s and the Hertz Corporation's Motion for Summary Judgment of Invalidity Under 35 U.S.C. § 101 (Dkt. No. 117). For the reasons set forth below, the motion for summary judgment of invalidity is DENIED.

I. Background

Plaintiff TQP asserts six claims of U.S. Patent No. 5,412,730 ("the '730 patent). Independent claim 1 recites as follows:

> 1. A method for transmitting data comprising a sequence of blocks in encrypted form over a communication link from a transmitter to a receiver comprising, in combination, the steps of:
>
> providing a seed value to both said transmitter and receiver,
>
> generating a first sequence of pseudo-random key values based on said seed value at said transmitter, each new key value in said sequence being produced at a time dependent upon a predetermined characteristic of the data being transmitted over said link,
>
> encrypting the data sent over said link at said transmitter in accordance with said first sequence,
>
> generating a second sequence of pseudo-random key values based on said seed value at said receiver, each new key value in said sequence being produced

at a time dependent upon said predetermined characteristic of said data transmitted over said link such that said first and second sequences are identical to one another a new one of said key values in said first and said second sequences being produced each time a predetermined number of said blocks are transmitted over said link, and

decrypting the data sent over said link at said receiver in accordance with said second sequence.

Dependent claim 3 recites:

3. The method of claim 1, further comprising:

at said transmitter, associating with each of a plurality of remote locations with which secured communication is required different seed values, and

wherein said provided seed value is one of said different seed values.

Dependent claim 6 recites:

6. The method of claim 1, wherein said provided seed value is one of a number of different seed values for a plurality of remote locations with which secure communication is required.

Dependent claim 8 recites:

8. The method of claim 1, further comprising:

Associating different ones of seed values with each of a plurality of remote locations with which secured communication is required.

Dependent claim 9 recites:

9. The method of any one of claims 3, 4, 5, 6, 7, or 8, further comprising:

adding error control information to the data sent over said link, wherein the error control information is added prior to transmitting the data over said link.

Dependent claim 10 recites:

10. The method of claim 9, further comprising:

compressing the data prior to encrypting the data.

The invention of claim 1 is a method for transmitting encrypted data over a communication link by (1) inputting a seed value to identical pseudo-random number generators in the transmitter and receiver, (2) using the pseudo-random number generators to generate

identical new key values at the transmitter and receiver, and (3) changing the key values at the transmitter and receiver at a time dictated by a predetermined condition of the data being transmitted; specifically, by changing the key value each time a predetermined number of blocks of data are transmitted.

The defendants contend that all of the asserted claims are invalid because they are directed to patent-ineligible subject matter—specifically, an algorithm, a mental process, or an abstract idea. They argue that the claims do not recite the application of an algorithm or abstract idea in a concrete setting, but instead simply recite a naked algorithm that can be performed as a mental process. Patent protection for that abstract idea, they contend, would have an intolerably broad preemptive effect on future innovation in the field.

In particular, the defendants argue that the claims are invalid because (1) they are "directed to and preempt all practical applications of an abstract algorithm," rather than being restricted to a specific application of the abstract idea embodied in the claims; (2) the claimed method can be performed by a human using pen and paper; (3) the method is not tied to a particular machine or apparatus; and (4) the method does not require or result in the transformation of one article into another, but merely results in the transformation of data from one form into another, which is not sufficient to confer patent eligibility. (Dkt. No. 117, at 12-15). Each of these arguments is addressed below.

II. Discussion

The defendants' arguments draw on a series of frequently cited Supreme Court decisions that address patent eligibility under section 101. Those cases focus on whether the claim at issue is drawn to an abstract idea or algorithm, which would be patent ineligible under section 101,

rather than to a specific application of such an abstract idea or algorithm, which would be patent eligible. See Mayo Collaborative Servs. v. Prometheus Labs., Inc., 132 S. Ct. 1289 (2012); Bilski v. Kappos, 130 S. Ct. 3218 (2010); Diamond v. Diehr, 450 U.S. 175 (1981); Parker v. Flook, 437 U.S. 584 (1978); Gottschalk v. Benson, 409 U.S. 63 (1972).

The most recent and comprehensive discussion of the section 101 issue from the Federal Circuit is found in the plurality opinion by Judge Lourie in CLS Bank International v. Alice Corp., 717 F.3d 1269 (Fed. Cir.) (en banc), cert. granted, 134 S. Ct. 734 (2013). That opinion identified several common themes running through the case law on patent eligibility. First, it identified the "abiding concern that patents should not be allowed to preempt the fundamental tools of discovery," which must remain "free to all . . . and reserved exclusively to none." CLS Bank, 717 F.3d at 1280, quoting Funk Bros. Seed Co. v. Kalo Inoculant Co., 333 U.S. 127, 130 (1948). Preemption features prominently in the Supreme Court's section 101 cases because of concern that patent law "not inhibit further discovery by improperly tying up the future use of laws of nature" and abstract ideas. CLS Bank, 717 F.3d at 1280, quoting Mayo, 132 S. Ct. at 1301. While recognizing that patent protection invariably involves some measure of preemption, Judge Lourie explained that "the animating concern is that claims should not be coextensive with a natural law, natural phenomenon, or abstract idea; a patent-eligible claim must include one or more substantive limitations that . . . add 'significantly more' to the basic principle, with the result that the claim covers significantly less." CLS Bank, 717 F.3d at 1281, quoting Mayo, 132 S. Ct. at 1294 (emphasis in original). What matters, the plurality noted, is "whether a claim threatens to subsume the full scope of a fundamental concept." 717 F.3d at 1281.

A second consideration identified in CLS Bank was the need to avoid "overly formalistic approaches to subject-matter eligibility that invite manipulation by patent applicants." CLS Bank, 717 F.3d at 1281. In that category, the plurality identified "claim drafting strategies that attempt to circumvent the basic exceptions to § 101 using, for example, highly stylized language, hollow field-of-use limitations, or the recitation of token post-solution activity." Id., citing Flook, 437 U.S. at 593, and Bilski, 130 S. Ct. at 3230.

Finally, the plurality noted that the cases dealing with section 101 "urge a flexible, claim-by-claim approach to subject-matter eligibility that avoids rigid line drawing." CLS Bank, 717 F.3d at 1281. "What is needed is a flexible, pragmatic approach that can adapt and account for unanticipated technological advances while remaining true to the core principles underlying the fundamental exceptions to § 101." Id. at 1281-82.

Proceeding from those basic principles, the plurality opinion in CLS Bank set forth the following analysis to be applied in determining whether a computer-implemented claim recites patentable subject matter under section 101, or "falls into the common law exception for abstract ideas." CLS Bank, 717 F.3d at 1282. The first question is "whether the claimed invention fits within one of the four statutory classes set out in section 101," id., i.e., "a process, machine, manufacture, or composition of matter." If it does, the next question is whether the claim at issue raises section 101 abstractness problems, or whether it poses no risk of preempting an abstract idea. Id. Where some risk appears, the plurality explained, it is "important . . . to identify and define whatever fundamental concept appears wrapped up in the claim," i.e., "the idea supposedly at risk of preemption." Id. The next step is to determine whether the claim contains "additional substantive limitations that narrow, confine, or otherwise tie down the claim

so that, in practical terms, it does not cover the full abstract idea itself." Id. The plurality characterized those limitations, sometimes referred to as the "inventive concept," as "a genuine human contribution to the claimed subject matter," id. at 1283, something that is not merely a scientific truth that is discovered, but "a product of human ingenuity." Id., quoting Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980). The "human contribution," the plurality added, "must represent more than a trivial appendix to the underlying abstract idea." CLS Bank, 717 F.3d at 1283. "Limitations that represent a human contribution but are merely tangential, routine, well-understood, or conventional, or in practice fail to narrow the claim relative to the fundamental principle therein, cannot confer patent eligibility." Id.

How do those principles apply to this case?

To begin with, there is no doubt that the method recited in claim 1 of the '730 patent (and in the dependent claims as well) is a statutory "process" and thus patent eligible under section 101 unless one of the common-law exceptions to section 101 applies. The next question is whether the recited claim raises "abstractness" problems, i.e., does it pose the risk of preempting an abstract idea. Because the claim language is generic in nature—referring to a "transmitter," a "receiver," and a "communication link," rather than more specific structures, there would appear to be some risk of unacceptable preemption. For that reason, it is necessary to ascertain "whatever fundamental concept appears wrapped up in the claim." CLS Bank, 717 F.3d at 1282.

A. Preemption of All Applications of an Abstract Algorithm

The fundamental concept set forth in claim 1 is the use of a predetermined characteristic of the data being transmitted, specifically the number of blocks of data transmitted, to trigger the generation of new key values used for encryption and decryption in a data communication

system. While that description of the concept at the heart of the invention is generic, it is also specific to a particular technological field—that of data encryption. Moreover, upon applying the analysis set forth in CLS Bank, it becomes clear that the claim contains several important limitations on the scope of the basic concept of the invention.

First, the invention as claimed is limited to the use, in an encrypted communication system, of functionally identical pseudo-random number generators to generate the key value used for encryption and decryption. Next, the claimed invention is further limited to the use of characteristics of the transmitted data to trigger key value changes. Finally, the claim does not read on the use of any of a number of predetermined characteristics of the data being communicated, but requires triggering based on a specific predetermined characteristic—the number of blocks of data that are transmitted over the link. Because of that limitation, which provides that "a new one of said key values . . . [is] produced each time a predetermined number of said blocks are transmitted over said link," the preemptive effect of the claim is very much diminished. The use of any other predetermined characteristic of the data would fall outside the patent's scope and accordingly would not be preempted.

Those limitations in claim 1 that add required steps to the core idea underlying the invention do not constitute simply a "trivial appendix to the underlying abstract idea," CLS Bank, 717 F.3d at 1283. To the contrary, they "narrow the claim relative to the fundamental principle therein." Id. Because the claim is drawn to a very specific method of changing encryption keys, it contains an "inventive concept," id., and is a far cry from something that could fairly be characterized as a "basic tool[ ] of scientific and technological work," Gottschalk v. Benson, 409 U.S. at 67.

B. "Mental Process" Performable Without a Specific Machine

Intuit and Hertz make the related arguments that the invention of claim 1 is not patent eligible because it is merely a "mental process" that can be performed by humans, and that the claims do not expressly require the use of a computer or any other specific machine. Thus, the defendants point out that the claim does not require any particular encryption algorithm; it does not require any specific type of transmitter, receiver, or communication link; and it does not require any specific type of pseudo-random number generator. The defendants argue that a simple system for predictably generating pseudo-random numbers can be performed with pencil and paper, or even in the mind of someone who is good at mathematics.

The "mental process" exception derives from Gottschalk v. Benson, 409 U.S. 63 (1972), where the Supreme Court stated: "Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work." Id. at 67. Taken out of context, that statement is quite broad. But the facts of Benson demonstrate how different the "mental process" at issue in that case is from the invention at issue in this one.

The patent application at issue in Benson claimed a method for converting binary-coded decimal numbers into pure binary numbers. In essence, the application claimed, as the invention, a simple conversion from one number to another equivalent number in a different form. Thus, the invention was as basic as the conversion of Roman numerals into Arabic numerals. The Court readily perceived the extraordinary breadth of the claim, which it characterized as "so abstract and sweeping as to cover both known and unknown uses of the [binary-coded decimal] to pure binary conversion." 409 U.S. at 68. In this case, by contrast, the invention involves a

several-step manipulation of data that, except perhaps in its most simplistic form, could not conceivably be performed in the human mind or with pencil and paper.

In Parker v. Flook, 437 U.S. 584 (1978), as in Benson, the Supreme Court held that a mathematical equation was not patentable. The invention in Flook consisted solely of applying an equation to compute an "alarm limit," i.e., to calculate the likely presence of dangerous conditions in a certain chemical reaction process. Because the chemical process at issue was well understood and the practice of monitoring the process variables and using alarm limits was well known, there was no "inventive concept" in the claimed application of the formula. 437 U.S. at 594. All that was new was the equation, which was not enough to make the claimed invention patent eligible. See Diamond v. Diehr, 450 U.S. at 192 n.14 (in Flook, "[a]ll the application provided was a 'formula for computing an updated alarm limit.'"). By contrast, the '730 patent claims a method of changing encryption key values that entails more than simply the disclosure of a formula accompanied only by "insignificant post-solution activity," see id. at 191-92.

It is true, as the defendants point out, that claim 1 of the '730 patent is "device agnostic," in that it does not specifically recite particular machines, such as a computer, particular types of transmitters and receivers, or a particular type of pseudo-random number generating machine. However, it is apparent from the patent that computing devices and electronic transmitters, receivers, and pseudo-random number generating machines would be required for all but the most fanciful uses of the invention. To invalidate claim 1 on the ground that it does not expressly require the use of a computer or other specific mechanisms would be to adopt an "overly formalistic approach[ ] to subject-matter eligibility" and to engage in "rigid line

drawing," rather than the "flexible, pragmatic approach" advocated by the plurality opinion in CLS Bank, 717 F.3d at 1281.

Moreover, although the issue of invalidity under section 101 presents a question of law, that legal conclusion "may contain underlying factual issues." See Accenture Global Servs., GmbH v. Guidewire Software, Inc., 728 F.3d 1336, 1340-41 (Fed. Cir. 2013); Ultramercial, Inc. v. Hulu LLC, 722 F.3d 1335, 1339 (Fed. Cir. 2013) ("[T]he analysis under § 101, while ultimately a legal determination, is rife with underlying factual issues."). The question whether a pseudo-random number generator can be devised that relies on an algorithm that can be performed mentally, or readily with pencil and paper, is one such factual question that would have to be resolved before the Court could grant summary judgment of invalidity in this case. While the defendants assert that the encryption and decryption process can be performed in the human mind or with pencil and paper, TQP has offered evidence to the contrary, in the form of an expert's declaration stating that a person of skill in the art would understand that the claimed method could not be performed in the mind but would require the use of a machine. That factual dispute by itself is enough to foreclose the entry of summary judgment in the defendants' favor on the present record.

Finally, while the defendants contend that the '730 patent claims, particularly as construed by the Court, are invalid in light of certain prior-art publications and encryption devices, those arguments go to issues of anticipation and obviousness, not to whether the claims of the '730 patent are patent eligible under section 101.

C. Transformation of Matter Into a Different Form

The Federal Circuit in In re Bilski, 545 F.3d 943 (Fed. Cir. 2008), held that the key to patent eligibility was whether an invention used a machine or resulted in a transformation of matter—the so-called "machine or transformation" test. 545 F.3d at 961. The Supreme Court rejected exclusive reliance on that test as unduly rigid, holding that while the use of a specific machine or the transformation of matter are important considerations bearing on patent eligibility, they are not the exclusive measures of compliance with section 101. Bilski v. Kappos, 130 S. Ct. 3218, 3226-27 (2010).

Typically, transforming data from one form to another does not qualify as the kind of transformation that the Supreme Court in Bilski regarded as an important indicator of patent eligibility. See CyberSource Corp. v. Retail Decisions, Inc., 654 F.3d 1366, 1375 (Fed. Cir. 2011) ("[T]he mere manipulation or reorganization of data . . . does not satisfy the transformation prong."). In the case of an invention in the field of encryption, however, the entire object of the invention is to transform data from one form into another that will be recognizable by the intended recipient but secure against decryption by unintended recipients. In that setting, it does not make sense to say that the transformation of data from one form to another cannot qualify as a patent-eligible invention, because that is what the field of cryptology is all about.

Some simple analogies make that point clear. For example, the invention of a writing convention that would be easy for a computer to read could be characterized as simply a transformation of data into a different form, but that invention would be patent eligible because it would be a useful and specific technology that could be advantageously employed in the field of

computer technology. See, e.g., Xerox Corp. v. 3Com Corp., 458 F.3d 1310 (Fed. Cir. 2006). Similarly, a method for converting image data into a form that a computer can display as a half-tone image is patentable even though the method merely converts data into a different form. See Research Corp. Techs., Inc. v. Microsoft Corp., 627 F.3d 859 (Fed. Cir. 2010); see also In re Alappat, 33 F.3d 1526 (Fed. Cir. 1994) (en banc) (invention that converts digital signals into a form that allows for the display of a smooth representation of that signal on a screen was patent eligible). If an inventor can get a patent on a method that makes information more readily understood or recognized, then there is no reason an inventor cannot obtain a patent on the opposite—a method that makes information less readily understood or recognized to all who do not possess the information necessary for decryption.

There are some seeming similarities between this case and several other cases in which the Supreme Court or the Federal Circuit have found claims patent ineligible under section 101. Those cases include Bilski, 130 S. Ct. 3218 (method for hedging risk the field of commodities trading); Accenture Global Services, GmbH v. Guidewire Software, Inc., 728 F.3d 1336 (Fed. Cir. 2013) (method for performing tasks in an insurance organization); CLS Bank, 717 F.3d 1269 (Fed. Cir. 2013) (en banc) (method to reduce settlement risk by use of third party in transaction); Bancorp Services, L.L.C. v. Sun Life Assurance Co., 687 F.3d 1266 (Fed. Cir. 2012) (method of managing life insurance policies); Fort Properties, Inc. v. American Master Lease LLC, 671 F.3d 1317 (Fed. Cir. 2012) (method for creating real estate investment instrument adapted for tax-deferred exchanges); and CyberSource Corp. v. Retail Decisions, Inc., 654 F.3d 1366 (Fed. Cir. 2011) (method for detecting fraud in credit card transactions, including simple strategies that can be performed mentally, without the aid of a machine). Upon close

inspection, however, it becomes evident that the similarities between those cases and the instant case are superficial. Generally speaking, the cited cases have held particular methods of doing business or engaging in so-called "processes for organizing human activities," see Bilski v. Kappos, 130 S. Ct. 3218, 3234 (2010) (Stevens, J., concurring in the judgment), quoting In re Bilski, 545 F.3d 943, 972 (Dyk, J., concurring), to be patent ineligible because the method claims would have broadly preempted commonplace practices in business, medicine, and other fields.

The most recent such case from the Federal Circuit, SmartGene, Inc. v. Advanced Biological Laboratories, SA, 2014 WL 259824 (Fed. Cir. Jan. 24, 2014), is illustrative. The patent at issue in that case claimed a method for guiding the selection of a therapeutic treatment regimen for a patient with a known disease or medical condition, comprising (1) providing patient information to a computing device including different therapeutic treatment regimens for the disease or condition, a set of rules for evaluating and selecting a therapeutic regimen, and advisory information useful for the treatment of a patient with different constituents of the therapeutic treatment regimens; (2) providing a ranked listing of therapeutic regimens for the patient; and (3) generating advisory information for one or more of the therapeutic treatment regimens in ranked order based on the patient information and the set of rules. The Federal Circuit held that the claim was not patent eligible, as section 101 does not "embrace a process defined simply as using a computer to perform a series of mental steps that people, aware of each step, can and regularly do perform in their heads." Id. at *4, citing CyberSource Corp. v. Retail Decisions, Inc., 654 F.3d at 1373.

The Court summarized earlier precedents as holding that "section 101 covers neither 'mental processes'—associated with or as part of a category of 'abstract ideas'—nor processes

that merely invoke a computer and its basic functionality for implementing such mental processes." SmartGene, 2014 WL 259824, at *4. The claim at issue in that case, the court noted, does not "purport to identify any steps beyond those which doctors routinely and consciously perform." Id. It is not enough, the court stated, for a claim to recite the use of a computer "not defined other than by its function, to perform familiar steps of creating, recording, and altering of certain intangible entities (contracts such as insurance policies or financial obligations)." Id. at *5.

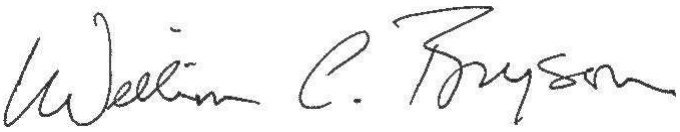
This case differs in a fundamental respect from SmartGene and the other like cases cited above. In most of those cases a computer was used to perform steps that are commonly performed without a computer, such as hedging, effecting routine insurance transactions, or selecting an appropriate treatment regimen for a medical patient. This case, however, involves a way of making computer communication itself more effective by making that communication more secure. The disputed claim does not involve a method of doing business that happens to be implemented on a computer; instead, it involves a method for changing data in a way that will affect the communication system itself, by making it more secure. Thus, although the invention in this case does not result in the physical transformation of matter of the sort involved, for example, in Diamond v. Diehr, 450 U.S. 175 (1981) (method for curing rubber), it involves a specific system for modifying data that has equally concrete and valuable effects in the field of electronic communications.

Because the Court finds that claim 1 is patent eligible under section 101, it follows that the rest of the disputed claims, which are dependent on claim 1, are patent eligible under section

101 as well. The defendants' motion for summary judgment of invalidity under section 101 must therefore be denied.

It is so ORDERED.

SIGNED this 19th day of February, 2014.



WILLIAM C. BRYSON
UNITED STATES CIRCUIT JUDGE