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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CHIOU-HAUN LEE

Appeal 2016-002005
Application 13/905,165
Technology Center 2400

Before ALLEN R. MacDONALD, JOHN P. PINKERTON, and
GARTH D. BAER, *Administrative Patent Judges*.

MacDONALD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1–10. Claims 11–18 have been objected to as being dependent upon a rejected base claim but otherwise containing allowable subject matter. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Exemplary Claim

Exemplary claim 1 under appeal reads as follows (emphasis added):

1. A method of third party identification for cryptographic communications, the method includes at least one third party (TP), wherein the third party (TP) run by a computer comprises steps as below:
 - (a) generate at least one sand-texture base (F^1), wherein the sand-texture base (F^1) is performed by letting $F^1 = F(p_1, p_2, \dots, p_n)$ which complied with $F^{2^n-1} = I$, I : a unit matrix; in addition, a combination of the sand-texture base's positions (p_1, p_2, \dots, p_n) may be backed up in one database, and further, remarked as a varying label number (#);
 - (b) generate at least one authorized image (AI), wherein the authorized image (AI) is obtained from a sand-texture generator (F^m), wherein $F^m = F_{(p_1, p_2, \dots, p_n)}^m$ equally, the sand-texture base (F^1) run for a number (m) of times;
 - (c) send every authorized image (AI) in cryptographic communications for identification.

Rejections on Appeal¹

1. The Examiner rejected claims 1 and 5–8 under 35 U.S.C. § 101 as failing to recite patent-eligible subject matter.²

2. The Examiner rejected claims 1–6 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Shu (US 2010/0272312 A1; Oct. 28, 2010), Seurin (US 2012/0321074 A1; Dec. 20, 2012), and Lee (US 2011/0261954 A1; Oct. 27, 2011).³

3. The Examiner rejected claim 7 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Shu, Seurin, Lee, and Lee82 (US 2009/0257582 A1; Oct. 15, 2009).

4. The Examiner rejected claims 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Shu, Seurin, Lee, Lee82, and Nagel (US 7,869,591 B1; Jan. 11, 2011).

Appellant's Contentions

1. Appellant contends that the Examiner erred in rejecting claim 1 under 35 U.S.C. § 101 because:

Appellant has [previously issued patents], wherein every independent claim with mathematical formulas is run by a computer or by a computing device. The Examiner cannot say that a cryptographic formula run by a computer is still an abstract idea by only using Machine or Transformation test.

¹ The Examiner also objected to claim 1 because of informalities. *See* Final Act. 4. This objection is not before us.

² The patent-eligibility of claims 5–8 is not separately argued from that of claim 1. *See* Appeal Br. 2–3. Except for our ultimate decision, claims 5–8 are not discussed further herein.

³ The patentability of claims 2–7 and 9–10 is not separately argued from that of claim 1. *See* Appeal Br. 3. Except for our ultimate decision, claims 2–7 and 9–10 are not discussed further herein.

Appellant emphasizes that the formula $E=MC^2$ as the Examiner mentioned is an abstract idea because it calculates the energy but does not generate the energy, and in contrast, *Appellant's cryptographic formula is not an abstract idea because it calculates the data and also does generate the data for verification and simple encryption/decryption. The algorithm itself of cryptographic security is a utility not an abstract idea, it really acts as a substantial practical safeguard in the network.*

The Examiner insistently wants to see the real results or improvements in the claim of Appellant cryptographic invention which works on data transformation; Appellant respectfully requests that the Board of Patent Appeals ask to the Examiner write down a standard version with substantial practical application in cryptographic security for further processing in the future smoothly.

Appeal Br. 2–3, Appellant's citations omitted, panel's emphasis added.

2. In the Reply Brief, further as to above contention 1, Appellants also contend that the Examiner erred in rejecting claim 1 under 35 U.S.C. § 101 because:

Appellant also wants to express an example before PTAB particularly on the application of encryption and decryption. "In Private PAIR system, USPTO arrange a box with a lock made by number, and then, USPTO send a paired key made by number to Appellant, and thus, Appellant may open the box by using the paired key to store the files."

According to Subject Matter Eligibility following the decision in Alice Corp. Pty. Ltd. v. CLS Bank Int'l, The Examiner now are trying to tell Appellant seriously that math formula is abstract and the method run by a computer is also abstract. However, from the point of view of encryption and decryption, Appellant under Machine Test asserts that the lock and the paired key are really created and moreover the paired key can really unlock the lock in the invention. Believe it or not, [t]he PTAB may go to the login screen of Private PAIR system in which, under the new Subject Matter Eligibility, there still has

no new NOTE: THE LOGIN SCREEN provided by USPTO is an abstract idea.

Reply Br. 1, Appellant's citations omitted, panel's emphasis added.

3. Appellants also contend that the Examiner erred in rejecting claim 1 under 35 U.S.C. § 103(a) because:

Only the Examiner submits that Shu invention has some teaching, suggestion, or motivation but without further verification to explain "How to teach" or "How to suggest".

Referring to the box with bold line in EVIDENCE APPENDIX . . . *the Examiner must tell more concretely the explanation to the Board of Patent Appeals that how the "choosing one from the number (m) of images" in Shu invention is able to connect with the "multiplying a matrix for the number (m) of times" in Appellant invention; why "multiplying" is obvious and why "multiplying a matrix" is obvious. Furthermore, if Shu invention cannot teach something fundamentally to Appellant invention, how Shu invention combining with the third party of Seurin invention will cause the obviousness to Appellant invention.*

Appeal Br. 3, Appellant's citations omitted, panel's emphasis added.

4. In the Reply Brief, further as to above contention 1, Appellants also contend that the Examiner erred in rejecting claim 1 under 35 U.S.C. § 103(a) because:

*[T]he Claim 1 of the invention has exactly specified and confined with math formulas: the base in Step (a) $F^1 = F(p_1, p_2, \dots, p_n)$ which complied with $F^{2^n-1} = I$, a unit matrix (I), the base's positions (p_1, p_2, \dots, p_n) , and then, in Step (b) $F^m = F_{(p_1, p_2, \dots, p_n)}^m$ which run F^1 for m times to obtain the authorized images. Pay attention to the above underline text and the corresponding examples at para. 1, page 8, Specification, *the formula has already been with specifies [sic] and thus the specific function is different from Shu invention and other prior arts.**

Reply Br. 2, emphasis added.

Issues on Appeal

1. Did the Examiner err in rejecting claim 1 as failing to recite patent-eligible subject matter?
2. Did the Examiner err in rejecting claim 1 as being obvious?

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellant's arguments that the Examiner has erred. We disagree with Appellant's conclusions. Except as noted herein, we adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which the appeal is taken (Final Act. 2–22); and, (2) the reasons set forth by the Examiner in the Examiner's Answer (Ans. 2–11) in response to the Appellant's Appeal Brief. We concur with the conclusions reached by the Examiner. We highlight the following.

As to Appellant's above contentions 1 and 2, we are not persuaded the Examiner erred. In *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, the Supreme Court articulated the required analysis for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas (which are not patent eligible under 35 U.S.C. § 101) from patents that claim patent-eligible applications of these concepts. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). The first step in the analysis is to determine whether the claims at issue are directed to a patent-ineligible concept, such as an abstract idea. *Id.* If the claims are directed to a patent-ineligible concept, then the second step in the analysis is to consider the elements of

the claims individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application. *Id.*

With respect to the first step in the analysis, we agree with the Examiner that claim 1 is directed to mathematical formulas for generating an image, and thus, are directed to abstract ideas. *See* Final Act. 4–5; *see also* Ans. 4–7. Although claim 1 recites that the generated image is used for identification in cryptographic communications, we conclude that this is a mere field-of-use restriction that does not impart patent-eligibility to the claim. Further, we also conclude that the mere recitation of a generic computer in the preamble also does not impart patent-eligibility to the claim.

With respect to the second step in the analysis, we see nothing in the claim that would transform the patent-ineligible concept of generating an image using mathematical formulas to a patent-eligible concept. The claim recites well-understood, routine, and conventional functions that can be performed by a generic computer, which the Supreme Court previously held are not sufficient to transform an abstract idea into a patent-eligible invention. *See, e.g., Alice*, 134 S. Ct. at 2360. More specifically, claim 1 recites “generate at least one sand-texture base (F^1),” “generate at least one authorized image (AI),” and “send every authorized image (AI) in cryptographic communications.”⁴ Such steps are data processing steps that

⁴ Claim 1 further recites that the sand-texture base’s positions “may be backed up in one database, and further, remarked as a varying label number (#).” Notwithstanding that this claim recitation is optional due to the usage of the phrase “may be,” the claim recitation also recites no more than conventional functions that can be performed by a generic computer, and is also not sufficient to impart patent-eligibility.

are similar to the data processing steps in *Alice* that the Supreme Court held were not sufficient to transform an abstract idea into a patent-eligible invention. *Id.*

Further, regarding Appellant's argument that similar claims from other patents were found patent-eligible at the time, we agree with the Examiner that those example patents cannot support patent-eligibility of claim 1 because those patents contain different claim limitations, and are not comparable to the current claims at issue. *See* Ans. 6. We have considered Appellant's other arguments regarding patent-eligibility of claim 1, and we do not find them persuasive. Accordingly, we sustain the rejection of claim 1 under 35 U.S.C. § 101.

As to Appellant's above contentions 3 and 4, we are not persuaded the Examiner erred. Regarding Appellant's argument that there is no motivation to combine Shu with Lee, we agree with the Examiner that the combination of Shu, Seurin, and Lee teaches or suggests all of the claimed elements of claim 1. *See* Ans. 8–9. We further agree with the Examiner that both Shu and Lee are analogous to the claimed invention as both references are in a similar field of improving secured communications between a sender and a receiver. *See* Ans. 9. Thus, we agree that it would have been obvious to one of ordinary skill in the art to combine the operations taught by Lee into the steps of generating a reference image taught by Shu, for the reason that such a combination is merely a combination of known elements that would yield no more than predictable results. *See* Ans. 10; *see also KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 416 (2007) (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”).

Regarding Appellant's argument that Shu fails to teach or suggest the claimed element (b) because Shu fails to teach or suggest running the sand-texture base (F^1) for a number (m) of times, we agree with the Examiner that claim 1 does not specify a range for m , and thus, under the broadest reasonable interpretation, claim 1 recites running the sand-texture base (F^1) only one time (i.e., m equals 1). *See* Ans. 10. Thus, we conclude Appellant has not persuasively shown that the Examiner erred in finding that the combination of Shu, Seurin, and Lee teaches or suggests all of the claimed elements of claim 1.

We have considered Appellant's other arguments regarding patentability of claim 1, and we do not find them persuasive. Accordingly, we sustain the rejection of claim 1 under 35 U.S.C. § 103(a).

CONCLUSIONS

(1) The Examiner has not erred in rejecting claims 1 and 5–8 as being unpatentable under 35 U.S.C. § 101.

(2) The Examiner has not erred in rejecting claims 1–7 and 9–10 as being unpatentable under 35 U.S.C. § 103(a).

(3) Claims 1–10 are not patentable.

DECISION

We affirm the Examiner's rejections of claims 1 and 5–8 as failing to recite patent-eligible subject matter under 35 U.S.C. § 101.

We affirm the Examiner's rejections of claims 1–7 and 9–10 as being unpatentable under 35 U.S.C. § 103(a).

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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