

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SIMON CHARLES WATT

Appeal 2008-3255
Application 10/179,020
Technology Center 2100

Decided: December 4, 2008

Before JAMES D. THOMAS, JEAN R. HOMERE, and
STEPHEN C. SIU, *Administrative Patent Judges*.

SIU, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-20, 22-41, 43, and 44. Claims 21 and 42 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b). An oral

hearing for this appeal was conducted on November 18, 2008. We affirm-in-part.

The Invention

The disclosed invention relates generally to transferring data values via a data bus (Spec. 2). Specifically, representations of data values are transferred on a data bus to control components such as a multiply and shift circuit or an arithmetic logic unit (Spec. 10). Data values may be converted between representations prior to being manipulated or written into a register (*id.*).

Independent claim 1 is illustrative:

1. Apparatus for processing data, said apparatus comprising:
 - a data source operable to supply a data value to be processed;
 - a destination operable to receive said data value; and
 - a data bus operable to transfer a representation of said data value between said data source and said destination;
 - wherein one or more representation specifying bits are associated with said data value transferred on said data bus, said one or more representation specifying bits specifying which of a plurality of different representations of said data value is used to transfer said data value via said data bus between said data source and said destination, and
 - wherein said one or more representation specifying bits accompany said data value transferred on said data bus, and
 - wherein said apparatus is one of:
 - a smart card;
 - a cryptographic device; and
 - a secure device.

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The References

The Examiner relies upon the following references as evidence in support of the obviousness rejection:

| | | |
|----------|--------------|---------------|
| Miyazaki | US 6,873,706 | Mar. 29, 2005 |
| Kaminaga | US 7,086,087 | Aug. 1, 2006 |

The Rejection

The Examiner rejects claims 1-20, 22-41, 43, and 44 under 35 U.S.C. § 103(a) as being unpatentable over Miyazaki and Kaminaga.

ISSUES

Issue #1

Appellant asserts that “the modification of Miyazaki proposed by the Examiner does not make technical sense and would not have been made by a person of ordinary skill in the art” (Reply Br. 2) because “there is no need in Miyazaki for any representation specifying bits to accompany” any message since “there is no variance in the representation being used (i.e., the input is encrypted and the output is decrypted)” (*id.*). Appellant also asserts that “the alleged motivation (to combine the teachings of Miyazaki and Kaminaga) does not make sense based on the teachings relied on in Miyazaki” (App. Br. 12).

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The Examiner “considers the encrypted message m 1014 as the claimed **data value** and since decrypted message m’ 1015 is a different representation of the message m 1014 examiner equates decrypted message m’ as the claimed **different representation of the data value**” (Ans. 13). The Examiner also finds that “[i]n Kaminaga outputted ‘0’ or ‘1’ from encryption decision device, are similar to the claimed limitation of ‘one or more representation specifying bits’” (Ans. 14).

Did Appellant demonstrate that the Examiner erred in finding that it would have been obvious to one of ordinary skill in the art to modify the Miyazaki with the Kaminaga reference to achieve the claimed invention?

Issue #2

The Examiner finds that in Kaminaga, “[i]f data is an encrypted data the encryption decision device 7312 outputs to an AND circuit a ‘1’. If data is not encrypted . . . the encryption decision device outputs to the AND circuit a ‘0’ (column 57, lines 15-25)” (Ans. 13-14) and that the “‘0’ or ‘1’ from encryption decision device, are similar to the claimed limitation of ‘one or more representation specifying bits’” (Ans. 14).

Appellant asserts that “the signal value ‘0’ or ‘1’ from the encryption decision device 7312 never makes its way on to the n-bit data bus or onto the data signal line 7057 which the Examiner maps to the claimed data bus” (Reply Br. 3).

Did Appellant demonstrate that the Examiner erred in finding that output bits from the encryption decision device of Kaminaga constitute representation specifying bits that accompany a data value transferred on a data bus?

Issue #3

Appellant asserts that Kaminaga “does not describe ‘a complement bit specifying whether said data value is represented in a true form or a complement form’” (App. Br. 14).

The Examiner finds that “specifying a data as not encrypted data is similar to specifying the data as an original or true form of the data and specifying a data as an encrypted data is similar to specifying as a complement form” (Ans. 17).

Did Appellant demonstrate that the Examiner erred in finding that specifying data as encrypted or not encrypted is the same as specifying data in complement or true form, respectively?

FINDINGS OF FACT

The following Findings of Facts (FF) are shown by a preponderance of the evidence.

1. Miyazaki discloses “the encrypted message m **1014** given as an input from the outside of the IC card **1001**, decrypting the encrypted message m **1014**, and outputting a result of the decryption as a

- decrypted message m' **1015** to the outside of the IC card **1001**" (Col. 6, ll. 23-28).
2. Kaminaga discloses "[t]he encryption decision device **7312** determines whether or not a decryption is required for the current transfer of data" (Col. 56, l. 66 – Col. 57, l. 1).
 3. Kaminaga discloses "the information memory device **7052** outputs encrypted data stored at the address to the data signal line **7057**" (Col. 56, ll. 18-20).
 4. Kaminaga discloses that "information stored in the information memory device **7052** and transferred through the data signal line **7057** has a bit pattern different from that of information used in the information processing apparatus **7051**" (Col. 56, ll. 27-30).
 5. Kaminaga discloses that "[t]he information memory device **7052** is divided by address into a plurality of storage areas. The encryption-area specifying register **7311** is used for storing information on whether or not encryption has been done for each of the storage areas" (Col. 56, ll. 62-66).
 6. Kaminaga discloses that "[i]f data stored at the address appearing on the address signal line **7058** is determined to have been encrypted, the encryption decision device **7312** outputs **1**. If data stored at the address appearing on the address signal line **7058** is determined to be data not encrypted before . . . the encryption decision device **7312** outputs **0**" (Col. 57, ll. 19-25).

PRINCIPLES OF LAW

35 U.S.C. § 103(a)

Section 103 forbids issuance of a patent when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1734 (2007).

“What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103.” *Id.* at 1742.

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner’s position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (“On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)). Therefore, we look to Appellants’ Briefs to show error in the proffered *prima facie* case.

In *KSR*, the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art," and discussed circumstances in which a patent might be determined to be obvious. *KSR*, 127 S. Ct. at 1739 (citing *Graham v. John Deere Co.*, 383

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U.S. 1, 12 (1966)). The Court reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR*, 127 S. Ct. at 1739. The operative question in this "functional approach" is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 1740.

The Federal Circuit recently recognized that "[a]n obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not." *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (citing *KSR*, 127 S. Ct. 1727, 1739 (2007)). The Federal Circuit relied in part on the fact that Leapfrog had presented no evidence that the inclusion of a reader in the combined device was "uniquely challenging or difficult for one of ordinary skill in the art" or "represented an unobvious step over the prior art." *Id.* at 1162 (citing *KSR*, 127 S. Ct. at 1740-41).

ANALYSIS

Issue #1

Appellant argues claims 1-13, 15-20, 22-34, 36-41, 43, and 44 as a single group which stands or falls together. We select independent claim 1 as the representative claim for this group. *See* 37 C.F.R. § 41.37(c)(1)(vii).

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In addition, Appellant's arguments apply to claims 14 and 35, argued as a separate group.

Miyazaki discloses a known method of receiving an encrypted message, decrypting the encrypted message, and outputting the decrypted message (FF. 1). Kaminaga discloses a known method of determining if decryption is required for data being transferred (FF. 2). Both Miyazaki and Kaminaga disclose known functions to achieve the expected results of receiving data and decrypting the data if decryption is necessary. Appellant has not demonstrated that the combination of Miyazaki and Kaminaga would have resulted in anything more than what one of ordinary skill in the art would have expected – namely, decrypting data if needed (i.e., decrypting data that has been encrypted). “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 127 S. Ct. at 1739. “[W]hen a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” *Id.* at 1740 (citing *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282 (1976)).

For at least the aforementioned reasons, we conclude that Appellant has not sustained the requisite burden on appeal in providing arguments or evidence persuasive of error in the Examiner's rejection of claim 1, and claims 2-13, 15-20, 22-34, 36-41, 43, and 44, which fall therewith.

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Appellant has also not shown Examiner error in the rejection of claims 14 and 35 with respect to issue #1.

Issue #2

Kaminaga discloses the transfer of data from an information memory device over a data signal line (i.e., data values transferred on a data bus) (FF 3) and also discloses an encryption decision device that outputs a “1” or “0” (i.e., a bit) that is associated with the state of encryption of the data output from the information memory device (FF 6). Therefore, Kaminaga discloses a memory device outputting data values that are “accompanied” by a decision device outputting a bit describing if the data values output from the memory device is encrypted or decrypted. We agree with the Examiner that Kaminaga discloses that the bit from the encryption decision device “accompanies” the data output from the information memory device because output of the data value corresponds to the output of the corresponding bit, which is output at approximately the same time.

Appellant argues that “the ‘0’ or ‘1’ signal (of Kaminaga) does not accompany the data value transferred on the data signal line 7057” (Reply Br. 4). Claim 1 requires that the “bits accompany said data value transferred on said data bus” (App. Br. A1). In the absence of an explicit definition of the term “accompany” in the Specification, we construe the term “accompany” broadly but reasonably to include “to go with as an associate or companion” or “to be in association with” (Merriam-Webster’s Collegiate

Dictionary, Eleventh Edition, 2005). Using this broad but reasonable interpretation, claim 1 requires the data value to be “transferred on said data bus” but does not require that the bits that accompany the data value are also “transferred on said data bus.” Rather, claim 1 merely requires that the bits go with the data value “as an associate or companion” or broadly be “in association with” the data value. Because the data value that is transferred on the data bus is transferred “in association with” or “as an associate or companion” with the bits (but not necessarily on the same data bus), we find that the bit from the encryption decision device of Kaminaga “accompanies” the data value. Therefore, we are unpersuaded by Appellant’s argument.

For at least the aforementioned reasons, we conclude that Appellant has not sustained the requisite burden on appeal in providing arguments or evidence persuasive of error in the Examiner’s rejection of claim 1, and claims 2-13, 15-20, 22-34, 36-41, 43, and 44, which fall therewith. Appellant has also not shown Examiner error in the rejection of claims 14 and 35 with respect to issue #2.

Issue #3

Claims 14 and 35 recite that the “data value is represented in a true form or a complement form” (App. Br. A4, A8). The Examiner finds that Kaminaga “clearly specifies different types of data (encrypted or not encrypted)” and that “data as an encrypted data is similar to specifying as a complement form” (Ans. 17). While the Examiner asserts that Kaminaga

discloses data in encrypted form, the Examiner has not demonstrated that the data in encrypted form of Kaminaga is equivalent or suggestive of data in complement form of claims 14 and 35.

Accordingly, we conclude that Appellant has met the burden of showing that the Examiner erred in rejecting claims 14 and 35 with respect to issue #3. Therefore, we reverse the Examiner's rejection of dependent claims 14 and 35 as being unpatentable over Miyazaki and Kaminaga.

CONCLUSIONS OF LAW

Based on the findings of facts and analysis above, we conclude that:

1. Appellant has not demonstrated Examiner error in finding that it would have been obvious to one of ordinary skill in the art to modify the Miyazaki with the Kaminaga reference to achieve the claimed invention.
2. Appellant has not demonstrated Examiner error in finding that output bits from the encryption decision device of Kaminaga constitute representation specifying bits that accompany a data value transferred on a data bus.
3. Appellant has demonstrated Examiner error in finding that specifying data as encrypted or not encrypted is the same as specifying data in complement or true form, respectively.

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DECISION

We affirm the Examiner's decision rejecting claims 1-13, 15-20, 22-34, 36-41, 43, and 44 under 35 U.S.C. § 103(a). We reverse the Examiner's decision rejecting claims 14 and 35 under 35 U.S.C. § 103(a).

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-IN-PART

msc

NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203