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Viering, Jentschura & Partner mbB - Inf			HAILU, TESHOME	
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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* WIELAND FISCHER and BERND MEYER

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Appeal 2019-004345  
Application 14/623,529  
Technology Center 2400

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Before MAHSHID D. SAADAT, JAMES R. HUGHES, and  
STEPHEN E. BELISLE, *Administrative Patent Judges*.

HUGHES, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Claims 1–17 are pending, stand rejected, are appealed by Appellant, and are the subject of our decision under 35 U.S.C. § 134(a).<sup>1</sup> *See* Final Act. 1–2; Appeal Br. 4.<sup>2</sup> We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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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(a). Appellant identifies the real party in interest as Infineon Technologies AG. *See* Appeal Br. 2.

<sup>2</sup> We refer to Appellant’s Specification (“Spec.”), filed Feb. 17, 2015 (claiming benefit of DE 102014101936.9, filed Feb. 17, 2014); and Appeal Brief (“Appeal Br.”), filed Aug. 14, 2018. We also refer to the Examiner’s Final Office Action (“Final Act.”), mailed Feb. 22, 2018; and Answer (“Ans.”) mailed Nov. 16, 2018.

### CLAIMED SUBJECT MATTER

The claimed subject matter, according to Appellant, “relate[s] generally to methods for permuting data elements and to permuting apparatuses.” Spec. ¶2. More specifically, Appellant’s claimed subject matter relates to permuting apparatuses and methods for permuting data elements within a chip card module by receiving a sequence of data elements at an input of a permuting apparatus and performing interchange operations within the sequence using a processing device that is part of the permuting apparatus. Each of the interchange operations involves determining a predefined position of a first data element within the received sequence, randomly determining a second position of a second data element within the received sequence, and interchanging the first data element with the second data element. *See* Spec. ¶¶ 4, 92, 93; Abstract. Claims 1 (directed to a method) and 15 (directed to a permuting apparatus) are independent. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A method for permuting data elements within a chip card module, the method comprising:

receiving a sequence of data elements at an input of a permuting apparatus; and

carrying out a plurality of interchange operations within the sequence with a processing device within the permuting apparatus, wherein each interchange operation comprises:

determining a predefined position of a first data element within the sequence received within the permuting apparatus of the chip card module;

randomly determining a second position of a second data element within the sequence;

interchanging the first data element with the second data element; and

applying a predefined permutation to the determined predefined position or to the sequence of data elements.

Appeal Br. 19 (Claims App.) (emphasis added).

## REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Elbwart et al. (“Elbwart”)	US 2003/0120990 A1	June 26, 2003
Barry et al. (“Barry”)	US 2004/0162863 A1	Aug. 19, 2004
Geist et al. (“Geist”)	US 2005/0021474 A1	Jan. 27, 2005
Girault et al. (“Girault”)	US 2005/0213769 A1	Sept. 29, 2005
Rawson, Sr. (“Rawson”)	US 2010/0054471 A1	Mar. 4, 2010
Roskind et al. (“Roskind”)	US 2010/0142005 A1	June 10, 2010
Olson et al. (“Olson”)	US 2010/0246814 A1	Sept. 30, 2010
Sinha et al. (“Sinha”)	US 2013/0061057 A1	Mar. 7, 2013

## REJECTIONS<sup>3</sup>

1. The Examiner rejects claims 1, 4, 5, 7, 10, 15, and 17<sup>4</sup> under 35 U.S.C. § 103 as being unpatentable over Sinha, Rawson, and Elbwart. *See* Final Act. 3–6.

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<sup>3</sup> The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103. Because the present application has an effective filing date (Feb. 17, 2014) after the AIA’s effective (March 16, 2013), this decision refers to 35 U.S.C. § 103.

<sup>4</sup> The Examiner omits claim 17 from the statement of the rejection, but discusses claim 17 in the substantive rejection. *See* Final Act. 8. We find this typographical error harmless and include claim 17 in the statement of rejection for clarity.

2. The Examiner rejects claims 2, 3, and 11 under 35 U.S.C. § 103 as being unpatentable over Sinha, Rawson, Elbwart, and Olson. *See* Final Act. 6–8.

3. The Examiner rejects claims 8 and 9 under 35 U.S.C. § 103 as being unpatentable over Sinha, Rawson, Elbwart, and Barry. *See* Final Act. 8–10.

4. The Examiner rejects claim 6 under 35 U.S.C. § 103 as being unpatentable over Sinha, Rawson, Elbwart, and Roskind. *See* Final Act. 10.

5. The Examiner rejects claims 12–14 under 35 U.S.C. § 103 as being unpatentable over Sinha, Rawson, Elbwart, and Girault. *See* Final Act. 11–12.

6. The Examiner rejects claim 16 under 35 U.S.C. § 103 as being unpatentable over Sinha, Rawson, Elbwart, and Geist. *See* Final Act. 12–13.

## ANALYSIS

### *Obviousness Rejection of Claims 1, 4, 5, 7, 10, 15, and 17*

The Examiner rejects independent claim 1 (as well as independent claim 15, and dependent claims 4, 5, 7, 10, and 17) as obvious over Sinha, Rawson, and Elbwart. *See* Final Act. 3–6; Ans. 13–17. Appellant contends that Sinha, Rawson, and Elbwart do not teach the disputed limitations of claim 1. *See* Appeal Br. 10–15. Specifically, Appellant contends, *inter alia*, that “there is no teaching, suggestion, or motivation to include a permutator circuit as disclosed by *Rawson*, or an interleaver as disclosed by *Elbwart*, into the disclosure of *Sinha*, as suggested by the Examiner” because the combination would be technically incompatible with the Sinha’s

authentication process and would destroy the ability of Sinha to be used for its intended purpose. Appeal Br. 14.

Appellant asserts that the Examiner-cited portions of Sinha (*see* Sinha ¶¶ 12, 27, 30) require substitutions of numbers from two different or distinct sequences (sets of numbers). *See* Appeal Br. 10–15. Although the Examiner points to Sinha’s Paragraph 27 as an example of interchanging data elements (*see* Final Act. 3–4), the Examiner is only using the session key of Sinha to meet the “sequence of data elements” recitation of claim 1. Appellant misconstrues the Examiner’s rejection with respect to the teachings of Sinha.

Even so, we agree with Appellant that the Examiner has not provided a sufficient, reasonable rationale for combining the disparate Sinha, Rawson, and Elbwart references. *See* Appeal Br. 12–15. It is true that each reference describes cryptographic functionality and permutations, but Sinha describes device authentication by substituting numbers in a personal identification number (PIN) with numbers from a cryptographic key (Sinha, Abstract), Rawson describes hardware encryption using a permutator circuit (performing permutations) (Rawson, Abstract; ¶ 14), and Elbwart describes using an interleaver to perform permutations in a telecommunications signal. The Examiner provides only a perfunctory rationale for combining the references (*see* Final Act. 4, 5) and picks only select teachings from the references to piece together Appellant’s claim limitations.

Here, the Examiner benefitted from impermissible hindsight in rejecting as obvious claims 1 and 15. *See In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) (“A rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight

reconstruction of the invention from the prior art.”). To protect against the improper use of hindsight, the Examiner is required to explain why a person having ordinary skill in the art at the time of the invention would have had reason to combine the prior art’s teachings in the manner proposed by the Examiner. *In re Rouffet*, 149 F.3d 1350, 1358 (Fed. Cir. 1998) (inferring “hindsight” when the specific understanding or principal leading to modification of prior art has not been explained). Indeed, even if one of ordinary skill in the art may have understood that a reference could be modified as reasoned by the Examiner, this does not imply a motivation to modify the reference. *See Belden Inc. v. Berk–Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“[O]bviousness concerns whether a skilled artisan not only could have made but would have been motivated to make the combinations or modifications of prior art to arrive at the claimed invention.”)

Motivation to combine is a factual inquiry, and “[t]he factual inquiry whether to combine references must be thorough and searching and the need for specificity pervades our authority on the findings on motivation to combine.” *In re Nuvasive*, 842 F.3d 1376, 1381–82 (Fed. Cir. 2016) (internal quotation marks and citation omitted). The Examiner “must examine the relevant data and articulate a satisfactory explanation for [the combination] including a rational connection between the facts found and the choice made.” *Nuvasive*, 842 F.3d at 1382. The Examiner did not provide a sufficient, reasonable rationale for combining Sinha, Rawson, and Elbwart.

Consequently, we are constrained by the record before us to find that the Examiner erred in finding that the combination of Sinha, Rawson, and

Elbwart renders obvious Appellant's claim 1. Independent claim 15 includes limitations of commensurate scope. Claims 4, 5, 7, 10, and 17 depend from and stand with claim 1.

*Obviousness Rejection of Claims 2, 3,  
6, 8, 9, 11–14, and 16*

The Examiner rejects dependent claims 2, 3, and 11 as obvious over Sinha, Rawson, Elbwart, and Olson. *See* Final Act. 6–8. The Examiner also rejects claims 8 and 9 as obvious over Sinha, Rawson, Elbwart, and Barry. *See* Final Act. 8–10. The Examiner further rejects claim 6 as obvious over Sinha, Rawson, Elbwart, and Roskind. *See* Final Act. 10. The Examiner additionally rejects claims 12–14 as obvious over Sinha, Rawson, Elbwart, and Girault. *See* Final Act. 11–12. Finally, the Examiner rejects claim 16 as obvious over Sinha, Rawson, Elbwart, and Geist. *See* Final Act. 12–13.

The Examiner does not suggest, and we do not find, that the additional cited references (Olson, Barry, Roskind, Girault, and/or Geist) cure the deficiencies of the Sinha-Rawson-Elbwart combination (*supra*). Therefore, we reverse the Examiner's obviousness rejections of dependent claims 2, 3, 6, 8, 9, 11–14, and 16 for the same reasons set forth for claim 1 (*supra*).

CONCLUSION

Appellant has shown that the Examiner erred in rejecting claims 1–17 under 35 U.S.C. § 103. We, therefore, do not sustain the Examiner's rejection of claims 1–17.

DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 4, 5, 7, 10, 15, 17	103	Sinha, Rawson, Elbwart		1, 4, 5, 7, 10, 15, 17
2, 3, 11	103	Sinha, Rawson, Elbwart, Olson		2, 3, 11
8, 9	103	Sinha, Rawson, Elbwart, Barry		8, 9
6		Sinha, Rawson, Elbwart, Roskind		6
12–14		Sinha, Rawson, Elbwart, Girault		12–14
16	103	Sinha, Rawson, Elbwart, Geist		16
<b>Overall Outcome</b>				1–17

REVERSED