

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SYMPHONY HEALTH SOLUTIONS CORPORATION,
Petitioner,

v.

IMS HEALTH INCORPORATED,
Patent Owner.

Case CBM2015-00070
Patent 6,397,224

Before MICHAEL P. TIERNEY, HYUN J. JUNG, and J. JOHN LEE
Administrative Patent Judges.

TIERNEY, *Administrative Patent Judge.*

DECISION
Institution of Covered Business Method Patent Review
37 C.F.R. § 42.208

I. INTRODUCTION

Symphony Health Solutions Corporation (“Symphony” or “Petitioner”) filed a Petition (“Pet.”) on February 1, 2015, to institute a covered business method patent review of claims 1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42 of U.S. Patent No. 6,397,224 (Ex. 1001, “the ’224 patent”). Paper 1. IMS Health Incorporated (“Patent Owner” or “IMS”) filed a Preliminary Response (“Prelim. Resp.”) to the Petition on May 20, 2015. Paper 7. We have jurisdiction under 35 U.S.C. § 324. *See* § 18(a) of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 329 (2011) (“AIA”).

The standard for instituting a covered business method patent review is set forth in 35 U.S.C. § 324(a), which provides as follows:

THRESHOLD.—The Director may not authorize a post-grant review to be instituted unless the Director determines that the information presented in the petition filed under section 321, if such information is not rebutted, would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.

Upon consideration of the information presented, we institute review, because Petitioner has demonstrated that claims 1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42 are more likely than not unpatentable under 35 U.S.C. § 101 and 35 U.S.C. § 103.

A. Related Proceedings

Petitioner indicates that the ’224 patent is asserted in a litigation titled *IMS Health Incorporated v. Symphony Health Solutions Corporation*, Civil Action No. 13-2071-GMS (D. Del.). Pet. 1.

B. The '224 Patent (Ex. 1001)

According to the '224 patent, the Health Insurance Portability and Accountability Act of 1996 (HIPAA) requires the maintenance of appropriate security measures to preserve the confidentiality of health information. Ex. 1001, 1:13–16. The '224 patent is said to help provide increased confidentiality through the use of systems and methods for anonymously linking data records in a database. *Id.* at Abstract, 2:35–42.

The '224 patent recognizes that it is important to be able to associate records from one or more data sources related to a particular individual. *Id.* at 1:20–22. For example, the '224 states that the linking of related data records “is crucial in performing certain research studies, such as horizontal and longitudinal studies.” *Id.* at 1:20–25. Data source records, however, may use different types of personal identifiers, many of which may not uniquely identify an individual, or may change with time. *Id.* at 1:41–45.

The '224 patent's system and method anonymously links a plurality of data records by first encoding a first subset of identifying elements of a data record. *Id.* at 5:49–52. A second identity reference is then encoded from a second subset of identifying elements of the data record. *Id.* at 6:6–12. The first and second encoded identity references may then be linked via an anonymization code database, which can be conceptualized as an “anonymous index.” *Id.* at 6:66–7:2. The first and second encoded identity references can be linked by assigning to each an identical anonymization code that anonymously represents the individual associated with the data record. *Id.* at 7:17–38.

The following depiction from the '224 patent exemplifies encoding the first and second identity references:

Database 68		
Name, DOB, ZIP (Subset 62A)	First encoded identity reference 60A	Anonymization code 66
John Doe, 12/25/1950, 73112	→ a2d6637f...4ab16393	→ ?
Healthcare identifier, DOB (Subset 62B)	Second encoded identity reference 60B	
446-12-345-01, 12/25/1950	→ 5d18ec82...95168ad6	→ ?

Id. at 10:27–38. As shown above, the first and second personal identifiers are encoded to form the first and second identity references. Where the encoded identity references are not found in the anonymization code database, the '224 patent describes the creation of a new anonymization code and storing the new code in the anonymization code database:

Database 68		
Name, DOB, ZIP (Subset 62A)	First encoded identity reference 60A	Anonymization code 66
John Doe, 12/25/1950, 73112	→ a2d6637f...4ab16393	→ 000567123
Healthcare identifier, DOB (Subset 62B)	Second encoded identity reference 60B	
446-12-3456-01, 12/25/1950	→ 5d18ec82...95168ad6	→ 000567123

As depicted above, an anonymization code 66 is created for the two encoded identity references, 60A and 60B. *Id.* at 10:46–57.

The '224 patent states that well known encoding techniques, including one defined by the National Institute of Standards and Technology (NIST), may be used within the scope of the invention. *Id.* at 5:49–67. The '224 patent further discloses that the system and method are conducted on a computer system connected via a network, where the computing system operates on an operating system such as Windows NT® and the network could be a system of interconnected networks, such as the Internet. *Id.* at 4:16–67. The patent further discloses that the databases may comprise, for

example, a conventional relational database management system (RDBMS).
Id. at 3:16–25, 6:54–58.

The system and method of the '224 patent are described as being of use in a variety of industries. *Id.* at 15:39–42. For example, the '224 patent states that credit card transactions of an individual may be anonymously linked to perform studies on spending habits, and that similar benefits may be realized in the banking industry. *Id.* at 15:42–49.

C. Illustrative Claims

The '224 patent contains forty-two claims, with claims 1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42 challenged by Petitioner. Independent claim 1 and dependent claim 14 are illustrative of the invention and are reproduced below:

1. A computer-implemented method for anonymously linking a plurality of data records, each data record comprising a plurality of elements for identifying an associated individual, the method comprising:
 - for each of the plurality of data records:
 - encoding a first encoded identity reference from a first subset of the identifying elements of a data record;
 - encoding a second encoded identity reference from a second subset of the identifying elements of the data record;
 - assigning to each of the first and second encoded identity references an identical anonymization code for anonymously representing the individual associated with the data record; and
 - inserting the assigned anonymization code into the data record.

14. The method of claim 1, wherein the plurality of data records are selected from the group consisting of healthcare transaction records and financial transaction records.

D. The Asserted Grounds

Petitioner challenges the claims based upon § 101 as well as § 103.

For § 103, Petitioner relies upon the following prior art:

K. Pommerening, M. Miller, I. Schmidtman, and J. Michaelis, *Pseudonyms for Cancer Registries*, 35 *Methods Info. Med.* 112–21 (1996) (Ex. 1004, “Pommerening”).

Max G. Arellano, MA, & Gerald I. Weber, PhD, *Issues in Identification and Linkage of Patient Records Across an Integrated Delivery System*, 12 *J. Healthcare Info. Mgmt.* 43 (1998) (Ex. 1005, “Arellano”).

U.S. 5,606,610 Johansson February 25, 1997 (Ex. 1006 “Johansson”)

Petitioner contends that the challenged claims are unpatentable under 35 U.S.C. § 101, and § 103 based on the following specific grounds (Pet. 11–12):

Basis	Reference(s)	Claims challenged
§ 101		1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42
§103	Pommerening and Arellano	1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42
§103	Johansson and Arellano	1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42

E. Level of Ordinary Skill in the Art

The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention.

Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational level of active

workers in the field. In a given case, one or more factors may predominate. *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

Petitioner contends that the claims are directed to the subject matter of anonymously linking data records in a database. Pet. 12. According to Petitioner, one of ordinary skill in the art would have familiarity with encryption and database systems. *Id.* Petitioner contends that the person of ordinary skill in the art would have had a master's degree in computer science, or equivalent work experience and two years' experience in the implementation of secure database systems. *Id.* at 12–13.

For purposes of this Decision, we consider the cited prior art as representative of the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The prior art references, like the '224 patent specification, do not recite specific computer programming and/or engineering problems encountered but instead discuss the problems in terms of classification tasks and the adequacy of encryption procedures (Ex. 1004, 120), and creating standards for collecting personal identification information as well as assigning a common sequential identification number to all linked records for a person (Ex. 1005, 51–52). Consistent with the prior art, Petitioner's expert, Dr. Clark, testifies that the types of problems encountered include how to secure data from re-identification (encryption) and how to match records belonging to a common source. Ex. 1003 ¶ 14. Dr. Clark testifies that the education level for these problems would have been a master's degree in computer science or equivalent work experience implementing secure database systems. *Id.*

On this record, we conclude that one of ordinary skill in the art had master's degree in computer science, or equivalent work experience and two years' experience in the implementation of secure database systems.

II. ANALYSIS

A. Claim Interpretation

Consistent with the statute and the legislative history of the AIA, the Board interprets claim terms by applying the broadest reasonable interpretation in the context of the specification in which the claims appears. 37 C.F.R. § 42.100(b); *see* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012).

Petitioner identifies the following three claim terms for construction: encoded identity reference, anonymization code, and module. Pet. 13–14. Generally, Petitioner seeks to interpret the claims by providing further clarification as to the meaning of the terms. Patent Owner does not propose distinct constructions of the identified terms. The identified claim terms are given their ordinary and customary meaning, as would be understood by one with ordinary skill in the art, and need not be construed explicitly at this time for purposes of this Decision's patentability analysis.

B. Standing for Covered Business Method Review of the '224 Patent

Petitioner contends that the '224 patent is directed to a covered business method patent. Petitioner states that they have been sued for infringement and that they are not estopped from challenging the '224 patent on the identified grounds. Pet. 11. Petitioner further states that the '224 patent claims are directed to systems and methods for anonymously linking

data records, including financial transaction records, and, thus, claim financial activities used in financial products and services. *Id.* at 4–6. Petitioner further states that the challenged claims are not directed to a technological invention. *Id.* at 6–10. Patent Owner disputes Petitioner’s standing, contending that the claims are not particularly related to the financial services industry and represent a technological invention. Prelim. Resp. 4–26.

Section 18 of the AIA provides for the creation of a transitional program for reviewing covered business method patents. A “[c]overed business method patent” is a patent that “claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions.” AIA § 18(d)(1); *see* 37 C.F.R. § 42.301(a). To determine whether a patent is eligible for a covered business method patent review, the focus is on the claims. *See* Transitional Program for Covered Business Method Patents—Definitions of Covered Business Method Patent and Technological Invention; Final Rule, 77 Fed. Reg. 48,734, 48,736 (Aug. 14, 2012). A patent need have only one claim directed to a covered business method to be eligible for review. *Id.*

1. Sued for Infringement of the ’224 Patent

The AIA provides that “[a] person may not file a petition for a transitional proceeding . . . unless the person or the person’s real party in interest or privy has been sued for infringement of the patent or has been

charged with infringement under that patent.” AIA § 18(a)(1)(B); *see also* 37 C.F.R. § 42.302(a).

As discussed above, Petitioner represents that it has been sued for infringement of the '224 patent in a litigation titled *IMS Health Incorporated v. Symphony Health Solutions Corporation*, Civil Action No. 13-2071-GMS (D. Del.). Pet. 1. Patent Owner does not dispute this representation. Thus, Petitioner has been sued for infringement for purposes of AIA § 18(a)(1)(B).

2. Financial Service or Product

A “covered business method patent” is a patent that “claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions.” AIA § 18(d)(1); *see* 37 C.F.R. § 42.301(a).

Petitioner states that the '224 patent claims systems and methods that expressly cover financial transaction records. Pet. 5. Patent Owner contends that the '224 patent has no particular relation to the financial services industry, and does not “particularly target” the financial sector. Prelim. Resp. 5–15. We have considered Patent Owner’s contention, but hold that AIA § 18(d)(1) does not require that the claimed invention particularly target the financial industry as argued by Patent Owner.

The '224 patent describes a system and method of anonymous linking of a plurality of data records, which can be used in a variety of industries and identifies credit card transactions of an individual as a type of data suited for the claimed system and method. Ex. 1001, 15:39–45. The patent also states that benefits of the system and method may be realized in the

banking industry. *Id.* at 15:45–49. Consistent with the teachings of the ’224 patent specification, claims 14, 28, and 42 limit the type of data records to healthcare transaction records and financial transaction records. We determine that the claimed system and method recite activities used in a financial product or service as it is directed to a financial activity, namely anonymizing financial transaction records, e.g., credit card records.

3. Technological Invention

The definition of “covered business method patent” in Section 18(d)(1) of the AIA excludes patents for “technological inventions.” In determining whether a patent is for a technological invention, we consider “whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution.” 37 C.F.R. § 42.301(b). The following claim drafting techniques, for example, typically do not render a patent a “technological invention”:

(a) Mere recitation of known technologies, such as computer hardware, communication or computer networks, software, memory, computer-readable storage medium, scanners, display devices or databases, or specialized machines, such as an ATM or point of sale device.

(b) Reciting the use of known prior art technology to accomplish a process or method, even if that process or method is novel and non-obvious.

(c) Combining prior art structures to achieve the normal, expected, or predictable result of that combination.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,763–64 (Aug. 14, 2012).

Petitioner contends that the '224 patent claims fail to recite a novel and unobvious technological feature and do not solve a technical problem with a technical solution. Pet. 6–11. Patent Owner disagrees and states that the '224 patent is directed to an improvement in a technological field, anonymously linking computer data records, and solves the technical problem of providing electronic privacy for data records with the technical combination of hardware and software recited in the '224 patent. Prelim. Resp. 15–26.

We exercise our discretion and analyze claim 14 of the '224 patent to determine whether it is directed to a technological invention.

Claim 14, which depends from claim 1, is directed to a computer-implemented method for anonymously linking a plurality of data records that are associated with an individual. The claim encodes a first encoded identity reference from a first data subset of identifying elements of a data record and then encodes a second encoded identity reference from a second subset. An identical anonymization code is assigned to each of the first and second encoded identity references for anonymously representing an individual associated with the data record. The claim also requires that the anonymization code be inserted into the data record.

a. Lack of Novel and Unobvious Technological Feature

Petitioner states that the challenged claims merely employ well known technology to encode and link records and lack improved computer hardware or software programming techniques. Pet. 6–10. Patent Owner contends that the claimed data encoding and anonymous linking improve the technical field of anonymously linking data records and represents novel and

non-obvious technical features. Prelim. Resp. 17. The technology required by the claims however, is conventional. For example, as noted by Petitioner, the use of general purpose computers, databases, software, and modules to encode and link data were well-known in the art at the time of the invention. Pet. 7.

Based on the record presented, we determine that claim 1 lacks a novel and unobvious technological feature. Specifically, we credit the testimony of Petitioner's expert, Dr. Clark, and find that the encoding of the first and second identity references may be conducted using well known hashing schemes, such as those long-established by NIST. Ex. 1001, 5:57–67; Ex. 1003 ¶¶ 24, 35. Similarly, the creation of an anonymization code merely requires that an identical code be assigned to each of the encoded identity references. We credit Dr. Clark's testimony, as it is consistent with the art of record, that the concept of indexing and linking records together was well known in the art and does not represent a technological feature. Ex. 1003 ¶ 28; Ex. 1005, 48, 52 (assignment of “common, sequential identification number to all linked medical record numbers for the same patient”). Further, the claims recite known prior art technology to accomplish the method. For example, the '224 patent specification discloses that the method may be accomplished using conventional relational database management systems. Ex. 1001, 3:16–25, and 4:54–58.

b. Claim 1 Does Not Solve a Technical Problem Using
a Technical Solution

Petitioner contends that the challenged claims do not solve any technical problems using a technical solution. According to Petitioner, the '224 patent specification identifies the problem to be solved as deficiencies

inherent in the use of a traditional “Master Patient Index,” which associates a patient’s personal identifiers with an assigned code. Pet. 8–9. Petitioner contends that the problem involves the lack of a single, universal identifier and the potentially changing nature of personal identifiers. *Id.* Patent Owner disagrees and contends that the claimed invention provides electronic privacy for vulnerable data records in a manner that still permits accurate linking of records from disparate sources. Prelim. Resp. 21.

The ’224 patent specification identifies the problem as multiple records pertaining to a single individual needing to be identified even though the records from different data sources may use different types of personal identifiers, and linking the records to make it difficult to discover the identity of the individual. Ex. 1001, 1:37–53. Consistent with the ’224 patent specification, Arellano characterizes the problem as a lack of standards for collecting personal identification information creating a need to assign a common sequential identification number to all linked records for a person. Ex. 1005, 51–52. Similarly, Pommerening describes this problem as involving proper classification of data and the adequacy of encryption procedures. Ex. 1004, 120.

Lack of standard identifiers is not a technical problem, nor is a need to assign a common identification number to a particular individual. Similarly, properly classifying data and employing adequate encryption procedures are not technical solutions in the context of the ’224 patent. Specifically, the ’224 patent employs conventional, well known encryption techniques to encode the data. We conclude that Petitioner has demonstrated on this record that claim 1 of the ’224 patent claim lacks a technical solution to a technical problem.

We conclude that claim 1 of the '224 patent is not a technological invention under § 18(d)(1). Specifically, we have considered Patent Owner's contentions but determine that Petitioner has demonstrated that the claim does not recite a novel and unobvious technological feature. Further, Petitioner has demonstrated that claim 1 is not directed to a technical solution to a technical problem.

Based upon the record presented, we hold that Petitioner has standing to file a covered business method review of the '224 patent.

C. Statutory Eligibility Under 35 U.S.C. § 101

Petitioner contends that claims 1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42 are unpatentable under 35 U.S.C. § 101, because they are directed to ineligible subject matter. Pet. 14–22. Patent Owner disagrees. Prelim. Resp. 27–44.

“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. Supreme Court precedents provide three specific exceptions to the broad categories of § 101: laws of nature, physical phenomena, and abstract ideas. *Bilski v. Kappos*, 561 U.S. 593, 601 (2010). “The ‘abstract ideas’ category embodies the longstanding rule that ‘[a]n idea of itself is not patentable.’” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014) (citing *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (quotations omitted)).

In *Alice*, the Supreme Court referred to the framework set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S. Ct.

1289 (2012), “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. In the first step, “we determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* “If so, we then ask, ‘[w]hat else is there in the claims before us?’” *Id.* (quoting *Mayo*, 132 S. Ct. at 1297). In the second step, we consider the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application. *Id.* Step two of the analysis may be described as 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. *Id.* (citing *Mayo*, 132 S. Ct. at 1294).

1. Abstract Idea

Petitioner contends that the claims recite an abstract idea. According to Petitioner, the claimed system and method of anonymously linking a plurality of data records represents long-utilized abstract concepts of encrypting (encoding) information and indexing (linking) the information. Pet. 17; Ex. 1003 ¶¶ 18–28. Generally, Petitioner contends that the claimed system and method steps merely recite a generic computer implementation of an abstract idea that can be performed using paper and pencil. Pet. 9–10, 22; Ex. 1003 ¶ 29.

Patent Owner contends that the claims are not directed towards an abstract idea but require specific and concrete elements including encoding the first and second encoded identity references, assigning an identical

anonymization code to the encoded identity references and inserting the anonymization code into the data record. Prelim. Resp. 32. Patent Owner further contends that Petitioner failed to provide sufficient specificity in analyzing the claims in context of the abstract idea. *Id.* at 34.

We select claim 1 as representative of the challenged claims as each challenged claim is directed towards encoding first and second identity references, assigning an anonymization code and inserting the anonymization code into the record. These four recited steps in claim 1 are directed towards an abstraction—a “disembodied concept” that represents a basic building block of human ingenuity. Specifically, the steps all describe an abstract idea of making personal identifiers secret (encoding/encrypting) and indexing the secret (indexing/linking). We do not agree with Patent Owner that the addition of the conventional computing databases and other conventional components to the abstract idea renders the abstraction concrete. Thus, we analyze the claims to determine if they incorporate enough meaningful limitations to ensure that the claims cover more than just an abstract idea. *See Mayo*, 132 S. Ct. at 1297.

2. Inventive Concept

Petitioner contends that the challenged claims fail to recite an inventive concept but instead add only a generic computer, database, and network technology to the abstract idea of encoding and linking. Pet. 18–21. Petitioner further states that the ’224 patent does not disclose any special software programming or improvements to a basic computer or database, and that the claims would not require such. *Id.* at 19. For example, Petitioner states that the encoding steps merely require conventional

encryption techniques. *Id.* at 20. Petitioner states that no special programming or improvement to a basic computer is required to carry out the system and method of the challenged claims. *Id.* at 19–21.

According to Patent Owner, the claims present “a novel solution necessarily rooted in computer database and cryptography technology to overcome a problem specifically arising in electronic records management technology.” Prelim. Resp. 43. Patent Owner states that the ’224 patent claims contain substantive, concrete limitations that specify that, for each of a plurality of data records, the claimed system must encode first and second encoded identify references from first and second subsets of identify elements in the data record, and be assigned an identical anonymization code that is inserted into the record. *Id.* at 40. Patent Owner further contends that the fact that the system could be implemented on a conventional database does not show that the claims are mere implementations of well-known systems. *Id.* at 41.

The ’224 patent specification states that the first and second data subsets are encoded using well known encoding techniques, including one defined by the National Institute of Standards and Technology (NIST). Ex. 1001, 5:49–67. Furthermore, the specification discloses that the claimed systems and methods are conducted using conventional computer technology on conventional networks, such as the Internet. *Id.* at 3:16–25, and 4:16–67.

Consistent with the ’224 patent specification, Dr. Clark testifies that the claims implement the abstract concepts through the use of general purpose computers, databases, and software. Ex. 1003 ¶ 30. Dr. Clark states that no special programming or improvements to a basic computer or

database are required to implement the claims. *Id.* ¶¶ 31–32. We credit Dr. Clark’s testimony as it is consistent with the teachings of the ’224 patent specification.

Based on the record presented, we determine that the challenged claims do not add meaningful limitations to avoid preempting the basic concepts of making personal identifiers secret (encoding/encrypting) and indexing the secret (indexing/linking). In essence, the challenged claims recite systems and methods for encoding personal identification information and linking that information using a computer, and do no more than merely recite the use of computer technology for one of its most basic functions, handling potentially large datasets that would be labor intensive and tedious if conducted using pen and paper. Ex. 1003 ¶ 29.

We have considered Patent Owner’s remaining arguments but do not find them persuasive. For example, Patent Owner contends that the encoding of the first and second subsets of the identifying elements of data records, assigning an anonymization code and placing it into the record, is distinguishable from the prior art. Prelim. Resp. 40. A claim however, may be novel but still lack subject matter eligibility. *Parker v. Flook*, 437 U.S. 584, 588 (1978) (“For the purpose of our analysis [under § 101], we assume that respondent’s formula is novel and useful and that he discovered it.”).

We have reviewed the Petition and all of Patent Owner’s rebuttal arguments and evidence relied upon in its Patent Owner Preliminary Response. On this record, we conclude that Petitioner has demonstrated that it is more likely than not that claims 1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42 are unpatentable under 35 U.S.C. § 101 as directed to non-statutory subject matter.

D. Section 103 Obviousness Challenge

Petitioner raises two (2) separate challenges based on 35 U.S.C. § 103. Generally, Petitioner contends that all of the challenged claims are obvious over the combination of Pommerening and Arellano as well as obvious over the combination of Johansson and Arellano. Pet. 22–77. These contentions are discussed in detail below.

1. Background on Obviousness

An invention is not patentable under 35 U.S.C. § 103 if it is obvious. *KSR Int’l v. Teleflex Inc.*, 550 U.S. 398, 426–27 (2007). The facts underlying an obviousness inquiry include:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Graham v. John Deere Co., 383 U.S. 1, 17–18 (1966). In addressing the findings of fact, “[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*, 550 U.S. at 416. As explained in *KSR*:

If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 417. Accordingly, a central question in analyzing obviousness is “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.*

2. The Prior Art References

a. Pommerening

Pommerening provides a discussion of privacy and security for data flow and data storage for population-based cancer registries. Ex. 1004, 112. Pommerening employs a special trusted office that communicates with reporting physicians and generates a cryptographic pseudonym for each case, which is passed on to a registration office for permanent storage. *Id.* The pseudonyms are said to be distinct and permit the matching of data while permitting privacy. *Id.* at 113.

Pommerening’s registration office performs a second encryption that links data only in the main memory of the registration office’s computer. *Id.* at 118. The cooperating registration office only sees the resulting linkage data in its own linkage format. *Id.* at 116. Pommerening’s system is designed to provide identification data for record linkage, even where there are multiple notifications of the same individual. *Id.* at 113. Linkage data is generated by extracting information including name(s), surname(s), phonetic codes, and birthdate. *Id.* at 117.

b. Johansson

Johansson describes a method and apparatus for encrypting original identifying information to protect an individual’s personal information, such as in the banking industry. Ex. 1006, 1:4–16. Johansson seeks to store

information relating to an “original identity” information and associated “descriptive information.” *Id.* at 1:40–42. The original identity information can include name, address, and personal code numbers. *Id.* at 4:28–35. The original identity information is kept separated from the descriptive information by initially having the original identity information encrypted to form an “update identity.” *Id.* at 1:47–52. The update identity then undergoes a second encryption to result in a storage identity, which is associated with the descriptive information. *Id.* at 1:52–54. The storage identity is then stored along with the descriptive information on a storage medium. *Id.* at 1:54–56. According to Johansson, the resulting records may be regarded as pure information records as opposed to personal records. *Id.* at 1:58–61. By encrypting the original identity information in two separate steps when generating the storage identity, Johansson is said to enable the creation of “floating” storage identities of the records, which prevents unauthorized tracking. *Id.* at 2:1–7.

c. Arellano

Arellano describes the importance of standardization across multiple master person index files due to the existence of disparate information systems used to collect and record data. Ex. 1005, 44. Using an appropriate name encoding system is crucial to proper identification. *Id.* at 45.

Arellano states that, for each record, it must be determined whether the record represents a person already in the file or requires the creation of a new index number. *Id.* at 48. If an incoming record represents a patient already in the system, a point is assigned, whereas a new member number is assigned where there is no match. *Id.* Arellano states that “great success”

was achieved when assigning a common sequential identification number to all linked medical records for the same patient, regardless of the facility. *Id.* at 52.

According to Arellano, it is critical for linkages to be created using key personal identifiers, such as name, address, birth date, gender code, race code, and birthplace code. For example, Arellano discloses a comparison of three vendor algorithms where the algorithms identified individuals as follows:

First Algorithm	Characters from first and last name, gender, and social security number
Second Algorithm	Complete last name and three characters from first name, birth date, gender and social security number (including blanks)
Third Algorithm	Complete last name and first six characters of first name, birth date, gender, and social security number (including blanks)

Id. at 49. Arellano notes that the combined ability of the first and second vendor algorithms identifies the probability-based linkages 82 to 90% of the time. *Id.* at 50.

3. Pommerening and Arellano

Petitioner states that Pommerening describes encoding subsets of healthcare identity elements and generating an anonymous (pseudonym) identifier for linking records. Pet. 23–25. Petitioner contends that Arellano teaches the use of data subsets and algorithms for linking healthcare records. *Id.* at 25–26. According to Petitioner, one of ordinary skill in the art had reason to combine the teachings of Pommerening and Arellano and arrive at

the subject matter of the challenged claims. *Id.* at 27. Specifically, Petitioner contends that one skilled in the art would assign unique encoded identifiers, link the records based on subsets of identifying elements, and would assign new identifiers where an incoming record was not already associated with an identifier, because the combination would have provided robust linking algorithms with the ability to link de-identified records, thus preserving patient privacy. *Id.* at 27–30. In essence, we understand Petitioner to argue that the challenged claims represent known elements (encoding identity information and indexing/linking records) for their known purpose (privacy of data, ability to locate all records pertaining to an individual) to achieve a predictable result (ensure that data records are kept private while at the same time correctly associated with an individual). Ex. 1003 ¶ 58. Patent Owner disagrees.

Patent Owner contends that the proposed combination fails to address the features recited in independent claims 1, 15, and 29. Prelim. Resp. 47. Patent Owner states that Pommerening acknowledges that its encryption process cannot compensate for slight variations in identification data, such as mistakes in spelling names. Patent Owner alleges that the claimed invention provides a concrete solution for linking disparate data records where an individual has multiple changing identity elements. *Id.* at 47–48. Arellano, however, teaches one skilled in the art to employ a combination of algorithms using data records having different identifiers to match (link) the disparate records. Ex. 1003 ¶¶ 50–51; Ex. 1005, 49–50. Further, the challenged claims do not require a specific level of accuracy in linking disparate records.

Patent Owner contends that Pommerening and Arellano each fail to

describe or suggest encoding two different first and second encoded identity references from two subsets of identity elements. Prelim. Resp. 49.

According to Patent Owner, although the '224 patent specification notes that the subsets of identifying elements are preferably not identical, the specification goes on to state that the selection identifying elements within the subsets should remain constant for every record processed. *Id.* Patent Owner states that neither Pommerening nor Arellano teaches or suggests such a solution. Patent Owner, however, does not identify where this “solution” is required by the challenged claims.

Patent Owner argues that Pommerening fails to teach or suggest encoding any encoded identity references, much less two distinct encoded identity references. Prelim. Resp. 50–52. Patent Owner then states that Arellano is similarly deficient. *Id.* at 52–53. Patent Owner contends that the proposed combination of Arellano with Pommerening fails to remedy the shortcomings of Pommerening. *Id.* at 53. Additionally, Patent Owner contends that Pommerening and Arellano fail to describe or suggest anonymously linking the data records using an identical anonymization code and inserting it into the record. *Id.* at 54.

The ground raised by Petitioner is one of obviousness. Dr. Clark testifies that Pommerening teaches one skilled in the art to de-identify records, encrypt records, and assign anonymization codes, thus ensuring an individual’s privacy. Ex. 1003 ¶¶ 46–48 and 57. Dr. Clark testifies that Arellano teaches the use of a variety of data subsets and algorithms to link healthcare records, and the benefits that can be obtained by combining algorithms. *Id.* ¶ 50.

We credit Dr. Clark’s testimony, as it is consistent with the teachings

of the Pommerening and Arellano references. We conclude, based on the record presented, that one skilled in the art would have combined the teachings of Pommerening and Arellano to arrive at the challenged claims as the claims represent known elements, combined for their known purpose to achieve a predictable result, matching identity records associated with an individual while maintaining privacy. *Id.* ¶ 58.

Patent Owner contends that Petitioner has failed to address the features recited in claims 3–7, 12, 14, 17–22, 26, 28, 31–35, 40, and 42. Prelim. Resp. 61–68. We have reviewed Patent Owner’s contentions but do not find them persuasive based on the record presented. For example, Patent Owner contends that Petitioner has failed to demonstrate that Arellano describes “determining whether each of the first and second encoded identity references has an assigned anonymization code” as recited in claims 3, 4, and 6. *Id.* at 63. As noted by Petitioner, Arellano describes determining whether an incoming record represents an existing patient in the file, matching the record where there is an existing patient and assigning a new number if not. Ex. 1005, 48.

We hold that, based on the record presented, Petitioner has demonstrated that it is more likely than not that the challenged claims are obvious over the combined teachings of Pommerening and Arellano.

4. Johansson and Arellano

Petitioner states that Johansson describes encrypting a subset of personally identifying information known as original identity information, which may include a name and address. Pet. 53. Johansson refers to the encrypted original identity information as an “update identity.” Ex. 1006,

1:40–52. According to Petitioner, the update identity is subjected to a second encryption by a reversible algorithm to form a storage identity. Pet. 54. Petitioner concludes that Johansson teaches one skilled in the art to encode subsets of identity references and assign them anonymous identifiers. *Id.* Petitioner contends that linking the records of Johansson together using an anonymization code would have been obvious in light of Arellano’s description of algorithms to link records using such an identifier. *Id.* at 54. Specifically, Petitioner identifies several benefits that would have been apparent to one skilled in the art including an increase in efficacy and robustness of the algorithms, and the ability to link de-identified records. *Id.* at 56. Patent Owner disagrees.

Patent Owner states that Johansson and Arellano fail to describe or suggest encoding two separate encoded identity references from first and second subsets of identifying elements for anonymously linking a plurality of data records and placing it into the record. Prelim. Resp. 70–76. For example, Patent Owner contends that Johansson is limited to a single encoded identity reference and fails to describe a first and second encoded identity reference. *Id.* at 70–71. Patent Owner also contends that Johansson fails to describe anonymously linking data records. *Id.* at 71. Patent Owner concludes that Arellano cannot remedy the deficiencies of Johansson as Johansson is directed to storage of data, a different problem than Arellano. *Id.* at 72.

Dr. Clark testifies that one skilled in the art would have reason to use the linking algorithms of Arellano with the de-identified records of Johansson because Arellano’s methods would increase the number of correct matches, facilitating more accurate analysis of the studies called for in

Johansson. Ex. 1003 ¶ 69. Additionally, Dr. Clark testifies that the combination of Johansson and Arellano to arrive at the subject matter of the challenged claims would have been obvious as the claims represent a combination of well-known elements, combined for their intended purpose to achieve a predictable result. *Id.* ¶ 71. We credit Dr. Clark's testimony, as it is consistent with the teachings of the Johansson and Arellano references.

Patent Owner contends that Petitioner fails to address dependent claims 11, 12, 14, 25, 26, 28, 39, 40, and 42. Prelim. Resp. 77–78. The dependent claims require the information to include information such as name, birth date, and zip code, and relate to healthcare and financial transaction records. As noted by Petitioner, Arellano is directed to healthcare information including name and birth date information, and Johansson describes the use of identifying information, including name and address. Pet., 59; Ex. 1005, 51; Ex. 1006, 4:28–35. Based on the record presented, we determine that it would have been obvious to one skilled in the art to have used names, birthdates and zip codes to identify a particular individual.

We hold that, based on the record presented, Petitioner has demonstrated that it is more likely than not that the challenged claims are obvious over the combined teachings of Johansson and Arellano.

III. CONCLUSION

The Petitioner has demonstrated that it is more likely than not that claims 1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42 are not patentable as being directed to subject matter that is not patent-eligible and, further, would have been obvious over the prior art.

The Board has not made a final determination on the patentability of any challenged claim.

IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that pursuant to 35 U.S.C. § 324(a), a covered business method patent review of the '224 patent is hereby instituted commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 324(d) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial;

FURTHER ORDERED that the trial is instituted as to '224 patent claims 1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42 on the ground of 35 U.S.C. §101 as being directed to non-statutory subject matter;

FURTHER ORDERED that the trial is instituted as to '224 patent claims 1–7, 11, 12, 14–22, 25, 26, 28–35, 39, 40, and 42 on the obviousness grounds as follows:

- i) over Pommerening and Arellano;
- ii) over Johansson and Arellano.

FURTHER ORDERED that no other ground set forth in the Petition is authorized;

FURTHER ORDERED that an initial conference call with the Board is scheduled for 2 PM Eastern Time on September 22, 2015. The parties are directed to the Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,765–66 (Aug. 14, 2012) for guidance in preparing for the initial conference call. The parties should be prepared to discuss any proposed changes to the Scheduling Order herewith and any motions the parties anticipate filing during the trial.

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Patent 6,397,224

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