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c/o PARK, VAUGHAN, FLEMING & DOWLER LLP
2820 FIFTH STREET
DAVIS, CA 95618-7759

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SRICHARAN KALLUR PALLI KUMAR and JUAN J. LIU

Appeal 2018-003784
Application 14/243,498¹
Technology Center 3600

Before JOHN A. EVANS, JAMES W. DEJMEK, and
MICHAEL M. BARRY, *Administrative Patent Judges*.

DEJMEK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 1–27. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We affirm.

¹ Appellants identify Palo Alto Research Center Incorporated as the real party in interest. App. Br. 4.

STATEMENT OF THE CASE

Introduction

Appellants' disclosed and claimed invention generally relates to detecting anomalies (i.e., outliers) within an identified peer group from a data set of entities. Spec. ¶¶ 2, 4, 27. In a disclosed embodiment, a system for anomaly detection identifies a peer group within the data set based on "auxiliary information." Spec. ¶ 22. Auxiliary information "comprises features which are used to help group certain entities together, e.g., to identify or discover the peer group." Spec. ¶ 22. As an example of detecting anomalies in the medical claims field, Appellants describe auxiliary information may include how many different procedures a doctor has performed, the number of times the doctor has performed each of these procedures, how many prescriptions an entity has prescribed, and the number of times an entity has prescribed each of the prescriptions. Spec. ¶ 36. Thus, for example, a group of doctors that have performed a particular procedure at least a certain amount of times may be considered a peer group. "Given a data set of entities on which to detect anomalies, the system extracts from the data set of entities features which provide meaningful information about the entities." Spec. ¶ 22. The extracted features are different from the auxiliary information. The system subsequently compares the extracted features between entities in the identified peer group such that any significant differences are indicative of anomalies. Spec. ¶ 23.

Claim 1 is representative of the subject matter on appeal and is reproduced below with the disputed limitations emphasized in *italics*:

1. A computer-implemented method for detecting anomalies, the method comprising:

extracting from a data set of entities features which provide meaningful information about the entities;

identifying a peer group for the entities in the data set based on auxiliary information which is distinct from the extracted features; and

comparing the extracted features of an entity in the identified peer group against the extracted features of other entities in the identified peer group, thereby determining anomalies between entities of the identified peer group not based on the auxiliary information.

The Examiner's Rejection

1. Claims 2, 3, 6–9, 11, 12, 15–18, 20, 21, and 24–27 stand rejected under 35 U.S.C. § 112(a) as failing to comply with the written description requirement. Final Act. 10–11.
2. Claims 1–27 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 7–9.
3. Claims 1, 2, 4–6, 10, 11, 13–15, 19, 20, and 22–24 stand rejected under 35 U.S.C. § 103 as being unpatentable over Suresh et al. (US 2003/0158751 A1; Aug. 21, 2003) (“Suresh”) and Margaret M. Byrne et al., *Method to Develop Health Care Peer Groups for Quality and Financial Comparisons Across Hospitals*, HSR: HEALTH SERVICES RESEARCH 44:2, PART I 577–92 (April 2009) (“Byrne”). Final Act. 12–17.
4. Claims 3, 7–9, 12, 16–18, 21, and 25–27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Suresh, Byrne, and Kondaji et al. (US 2015/0161529 A1; June 11, 2015) (“Kondaji”). Final Act. 17–21.

ANALYSIS²

Rejection under 35 U.S.C. § 112(a) (written description)

Dependent claims 2, 6, 11, 15, 20, and 24 each recite, in relevant part, “determining a similarity metric between [an] individual profile of the target entity . . . and [an] individual profile of each entity . . . and identifying a subset of entities . . . wherein the determined similarity metric . . . is less than a predetermined threshold.” (Emphasis added.) Although the Examiner notes the Specification describes identifying a peer group where a similarity metric is “sufficiently small,” the Examiner finds “there is no description that being sufficiently small is determined by comparing to a predetermined threshold value or any stored or set value.” Final Act. 10 (citing Spec. ¶¶ 31, 41, 52). Moreover, the Examiner finds that “[t]he well-known meaning of a threshold is defined as a level, point or value above which something is true or will take place and below which it is not. Sufficiently small does not define at what value the predetermined threshold is and one of ordinary skill would not be able to determine this value or point.” Ans. 6. Thus, the Examiner rejects claims 2, 6, 11, 15, 20, and 24 (as well as claims 3, 7–9, 12, 16–18, 21, and 25–27, which depend directly or indirectly therefrom) under 35 U.S.C. § 112(a) as failing to comply with the written description requirement. Final Act. 10.

To satisfy the written description requirement, the disclosure must reasonably convey to skilled artisans that Appellants possessed the claimed

² Throughout this Decision, we have considered the Appeal Brief, filed September 27, 2017 (“App. Br.”); the Reply Brief, filed February 21, 2018 (“Reply Br.”); the Examiner’s Answer, mailed December 22, 2017 (“Ans.”); and the Final Office Action, mailed April 27, 2017 (“Final Act.”), from which this Appeal is taken.

invention as of the filing date. *See Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). Specifically, the description must “clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed” and

the test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed.

Ariad Pharms., Inc., 598 F.3d at 1351 (internal quotations and citations omitted). Additionally, the Examiner has the initial burden of presenting evidence or reasons why persons skilled in the art would not recognize in an applicant’s disclosure a description of the invention defined by the claims. *In re Wertheim*, 541 F.2d 257, 265 (CCPA 1976).

Here, we agree with Appellants (*see* App. Br. 35–36; Reply Br. 13–14) that both the claims and Specification provided adequate written description support for “the determined similarity metric . . . is less than a predetermined threshold,” as recited in claim 2. In particular, the Specification describes that a sub-set of entities is identified when the determined similarity metric is between the two entities is “sufficiently small.” Spec. ¶ 31. Further, the Specification explains “when two data points are considered similar or ‘close’ to one another, they are considered to belong to the same peer group.” Spec. ¶ 31. Although very broadly claimed, we agree with Appellants that an ordinarily skilled artisan would understand that a sub-set of entities (i.e., a peer group) is identified when the similarity metric between the entities is sufficiently small so as to be less than a predetermined threshold. Accordingly, we agree with Appellants that

the inventors had possession of the claimed subject matter (i.e., “less than a predetermined threshold”) as of the filing date.

For the reasons discussed *supra*, we find on the record before us sufficient support for the disputed limitation. Accordingly, we reverse the Examiner’s rejection under 35 U.S.C. § 112(a) of claims 2, 3, 6–9, 11, 12, 15–18, 20, 21, and 24–27.

Rejection under 35 U.S.C. § 101

Appellants dispute the Examiner’s conclusion that the pending claims are directed to patent-ineligible subject matter. App. Br. 6–27; Reply Br. 8–12. As an initial matter, Appellants assert the Examiner improperly relies on a “concept” and what “the claims do not explicitly recite,” instead of considering all the words in the claim and applying the “directed to” inquiry to determine whether the claims themselves are “directed to” a patent-ineligible concept. App. Br. 17–18; Reply Br. 8–9, 11. Moreover, Appellants dispute the Examiner’s conclusion that the claims correspond to ‘an idea of itself’ and, thus, are directed to an abstract idea. App. Br. 18–21. Appellants argue “[b]y determining anomalies between entities of the identified peer group, **not based on the auxiliary information**, the steps of the instant claims are more than abstract processes.” App. Br. 20. Appellants assert “[t]he instant claims can account for data which is clustered in nature, and thus amount to significantly more than merely presenting the results of abstract processes.” App. Br. 20. Appellants further assert the application provides a specific implementation of a solution to a problem relating to traditional anomaly detection and a

particular way to achieve a desired outcome. App. Br. 23. According to Appellants, their application

(1) teaches how the claimed invention improves another technology (i.e., data mining of large quantities of raw data); and

(2) provides a particular solution to a problem (i.e., avoiding traditional inaccuracies in anomaly detection by using an outlier identification which takes into account both the extracted features and the peer group discovered using auxiliary information).

App. Br. 23 (tabbing added for ease of reference); Reply Br. 10. Appellants explain that where “‘traditional anomaly’ detection methods involve extracting features from the raw data and comparing data points based on these extracted features to identify outliers,” Appellants’ system determines a data set where “raw data exists as entities of a data set on which to detect anomalies, and that these entities are stored in some type of storage medium or device.” App. Br. 23 (quoting Spec. ¶¶ 3, 29, Fig. 3 (internal quotations omitted)); Reply Br. 10–11.

Next, Appellants attempt to analogize their invention to claims found patent eligible by the Federal Circuit. For example, Appellants assert that, similar to the invention in *McRO*,³ embodiments of their invention “incorporate ‘rules’ (e.g., determining anomalies by comparing extracted features, using a similarity metric, and differences in results of the comparison) that improve the technological process of detecting anomalies in a data set (e.g., by identifying a peer group using auxiliary information distinct from the extracted features).” App. Br. 22. At the same time,

³ *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016).

Appellants attempt to distinguish their invention from claims the courts have found patent ineligible. For example, Appellants assert that the claims in *FairWarning*,⁴ which were directed to accessing a patient's information and analyzing data in a log file, are not the same as claim 1's recitations of "identifying a peer group" and "comparing the extracted features".

App. Br. 19. Appellants also assert that, unlike the claims in *SmartGene*,⁵ Appellants' claims recite steps that cannot be performed solely in the human mind because the recited data set of entities "can include a vast amount of information, e.g., medical claims," and each claim step "is not a familiar part of the conscious process that a human (i.e., doctors) can and do perform in their heads." App. Br. 21.

As to dependent claims 2–9, 11–18, and 20–27, Appellants assert they are not directed essentially to a patent-ineligible method of calculating using a mathematical formula simply because some elements of some claims use a mathematical term. App. Br. 24 (citing *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) for the proposition that "[i]f a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory."); Reply Br. 11–12. Rather, Appellants assert these claims include many steps other than "using the weighted Euclidean distance," as recited in claims 3, 12, and 21. App. Br. 24; Reply Br. 11–12.

⁴ *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093–94 (Fed. Cir. 2016).

⁵ *SmartGene, Inc. v. Advanced Biological Labs., SA*, 555 F. App'x 950 (Fed. Cir. 2014).

Appellants further argue that even if the claims were directed to an abstract idea, the claims amount to significantly more than the abstract idea. App. Br. 26. More specifically, Appellants assert that similar to the additional elements in *BASCOM*,⁶ the additional steps of the claims transform the process into an inventive application or an inventive concept by providing a solution to the problem of traditional anomaly detection, in which “the outlier identification takes into account **both** the extracted features and the peer group discovered using auxiliary information.” App. Br. 26 (quoting Spec. ¶ 30 (internal quotations omitted)).

The Supreme Court’s two-step framework guides our analysis of patent eligibility under 35 U.S.C. § 101. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 217 (2014). In addition, the Office recently published revised guidance for evaluating subject matter eligibility under 35 U.S.C. § 101, specifically with respect to applying the *Alice* framework. USPTO’s 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Office Guidance”). If a claim falls within one of the statutory categories of patent eligibility (i.e., a process, machine, manufacture, or composition of matter) then the first inquiry is whether the claim is directed to one of the judicially recognized exceptions (i.e., a law of nature, a natural phenomenon, or an abstract idea). *Alice*, 573 U.S. at 217. As part of this inquiry, we must “look at the ‘focus of the claimed advance over the prior art’ to determine if the claim’s ‘character as a whole’ is directed to excluded subject matter.” *Affinity Labs of Tex., LLC v. DirecTV*,

⁶ *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349–50 (Fed. Cir. 2016).

LLC, 838 F.3d 1253, 1257–58 (Fed. Cir. 2016) (internal citations omitted). Per Office Guidance, this first inquiry has two prongs of analysis: (i) does the claim recite a judicial exception (e.g., an abstract idea), and (ii) if so, is the judicial exception integrated into a practical application. 84 Fed. Reg. at 54. Under the Office Guidance, if the judicial exception is integrated into a practical application, *see infra*, the claim is eligible under § 101. 84 Fed. Reg. at 54–55. If the claim is directed to a judicial exception (i.e., recites a judicial exception and does not integrate the exception into a practical application), the next step is to determine whether any element, or combination of elements, amounts to significantly more than the judicial exception. *Alice*, 573 U.S. at 217; 84 Fed. Reg. at 56.

Here, we conclude Appellants’ claims recite an abstract idea of a mental process. In particular, Appellants’ claims are generally directed to identifying anomalies between entities based on extracted features within a peer group of entities. This is consistent with how Appellants describe the claimed invention. *See Spec.* ¶ 4; *see also App. Br.* 8–9. Identifying anomalies is an evaluation of whether an extracted feature of an entity is distinct from those of the other entities in the group. Consistent with our Office Guidance and case law, we conclude that evaluation is a mental process and, thus, an abstract idea. *See* 84 Fed. Reg. at 52; *see also CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371–72 (Fed. Cir. 2011) (concluding claims directed to “detecting credit card fraud based on information relating to past transactions” can be performed in the human mind and were drawn to a patent-ineligible mental process); *FairWarning*, 839 F.3d at 1093–94 (concluding claims directed to “collecting and

analyzing information to detect misuse and notifying a user when misuse is detected” to be mental processes within the abstract-idea category).

Claim 1 is reproduced below and includes the following claim limitations that recite this concept of evaluation, emphasized in *italics*.

1. A computer-implemented *method for detecting anomalies*, the method comprising:

extracting from a data set of entities features which provide meaningful information about the entities;

identifying a peer group for the entities in the data set based on auxiliary information which is distinct from the extracted features; and

comparing the extracted features of an entity in the identified peer group against the extracted features of other entities in the identified peer group, thereby determining anomalies between entities of the identified peer group not based on the auxiliary information.

More particularly, identifying anomalies between entities based on extracted features within a peer group of entities comprises (i) identifying a peer group for entities based on auxiliary information distinct from the extracted features (i.e., the claimed “identifying” step), and (ii) comparing the extracted features of entities in the identified peer group, thereby determining anomalies between the identified peer group entities not based on the auxiliary information (i.e., the claimed “comparing” step).

We also are unpersuaded by Appellants’ argument that the claimed invention is patent eligible because it recites steps that cannot be performed solely in the human mind. *See* App. Br. 21; 84 Fed. Reg. at 52 n.14.

Although the claimed invention certainly purports to accelerate the process of detecting anomalies, the speed increase comes from the capabilities of a general-purpose computer, rather than the claimed method itself. *See, e.g., Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d

1266, 1278 (Fed. Cir. 2012) (“[T]he fact that the required calculations could be performed more efficiently via a computer does not materially alter the patent eligibility of the claimed subject matter.”).

Because the claim recites a judicial exception, we next determine whether the claim integrates the judicial exception into a practical application. 84 Fed. Reg. at 54. To determine whether the judicial exception is integrated into a practical application, we identify whether there are “*any additional elements recited in the claim beyond the judicial exception(s)*” and evaluate those elements to determine whether they integrate the judicial exception into a recognized practical application. 84 Fed. Reg. at 54–55 (emphasis added); *see also* MPEP § 2106.05(a)–(c), (e)–(h).

Here, we find the additional limitations do not integrate the judicial exception into a practical application. More particularly, the claims do not recite: (i) an improvement to the functionality of a computer or other technology or technical field (*see* MPEP § 2106.05(a)); (ii) use a “particular machine” to apply or use the judicial exception (*see* MPEP § 2106.05(b)); (iii) a particular transformation of an article to a different thing or state (*see* MPEP § 2106.05(c)); or (iv) any other meaningful limitation (*see* MPEP § 2106.05(e)). *See also* 84 Fed. Reg. at 55. Specifically, extracting from a data set of entities features which provide meaningful information about the entities is mere data-gathering and recites the type of extra-solution activity (i.e., in addition to the judicial exception) the courts have determined insufficient to transform judicially excepted subject matter into a patent-eligible application. *See* MPEP § 2106.05(g); 84 Fed. Reg. at 55, 55 n.31; *see also Bancorp Servs, L.L.C. v. Sun Life Assur. Co. of Can.*, 771 F.Supp.2d

1054, 1066 (E.D. Mo. 2011) *aff'd*, 687 F.3d at 1266 (explaining that “storing, retrieving, and providing data . . . are inconsequential data gathering and insignificant post solution activity”); *Bilski v. Kappos*, 561 U.S. 593, 612 (holding the use of well-known techniques to establish inputs to the abstract idea as extra-solution activity that fails to make the underlying concept patent eligible); *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1355 (Fed. Cir. 2016) (explaining that “selecting information, by content or source, for collection analysis, and display does nothing significant to differentiate a process from ordinary mental processes”).

Additionally, we disagree with Appellants (*see* App. Br. 22–23) that the claims, as a whole, are directed to a specific implementation of a solution to a technological problem. Unlike the claims in *Enfish and McRO*, the instant claims are not focused on an improvement to computers or software as tools, but rather use computers to execute the judicial exception. *See* Ans. 5; *see also Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017).

In *DDR Holdings*,⁷ the Federal Circuit explained that the patent-eligible claims specified “how interactions with the Internet are manipulated to yield a desired result . . . that overrides the routine and conventional sequence of events ordinarily triggered by the click of a hyperlink.” *DDR Holdings*, 773 F.3d at 1258. The court reasoned that those claims recited a technological solution “necessarily rooted in computer technology” that addressed a “problem specifically arising in the realm of computer networks.” *DDR Holdings*, 773 F.3d at 1257. In *McRO*, a “specific asserted

⁷ *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014).

improvement in computer animation, i.e., the automatic use of rules of a particular type” was held to be not abstract. In contrast, Appellants describe the problem to be solved (both in their Specification and briefings) with traditional anomaly detection inaccuracies as one rooted in the particular calculations and data methods employed, not in the hardware or software used to implement their invention. *See* Spec. ¶ 3; App. Br. 20, 22–23; Reply Br. 10–11. Thus, the problem does not arise specifically in the realm of computer networks or the software arts.

Moreover, in *BASCOM*, the court found “the patent describes how its particular arrangement of elements is a technical improvement,” and, when construed in favor of *BASCOM*,⁸ the claims may be read to improve an existing technological process. *BASCOM*, 827 F.3d at 1350. We disagree with Appellants (*see* App. Br. 26) that providing a solution to the problem of traditional anomaly detection, in which the outlier identification takes into account both the extracted features and the peer group discovered using auxiliary information, “transform[s] the process into an inventive application or inventive concept by providing a solution to the problem of traditional anomaly detection.” App. Br. 26. To the contrary, the Specification does not specify how or why Appellants’ purported solution is a *technological* improvement, let alone why it could not be performed merely on pen and paper or in a human’s mind.

Additionally, we are unpersuaded by Appellants’ arguments that the claims in *Digitech* differ from Appellants’ claims. Even if Appellants’ claims were “not directed essentially to a method of calculating using a

⁸ In *BASCOM*, *BASCOM* appealed the district court’s granting of a motion to dismiss under Fed. R. Civ. P. 12(b)(6). *BASCOM*, 827 F.3d at 1341.

mathematical formula,” this alone neither confers patent eligibility upon Appellants’ claims nor does it negate that Appellants’ claimed invention recites a mental process, which is a type of abstract idea. In other words, just because a claim may not recite one type of judicial exception, does not mean it cannot recite another one.

For at least the foregoing reasons, the claims do not integrate the judicial exception into a practical application.

Because we determine the claims are directed to an abstract idea or combination of abstract ideas, we analyze the claims under step two of *Alice* to determine if there are additional limitations that individually, or as an ordered combination, ensure the claims amount to “significantly more” than the abstract idea. *Alice*, 573 U.S. at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72–73, 77–79 (2012)). As stated in the Office Guidance, many of the considerations to determine whether the claims amount to “significantly more” under step two of the *Alice* framework are already considered as part of determining whether the judicial exception has been integrated into a practical application. 84 Fed. Reg. at 56. Thus, at this point of our analysis, we determine if the claims add a specific limitation, or combination of limitations, that is not well-understood, routine, conventional activity in the field; or simply append well-understood, routine, conventional activities at a high level of generality. 84 Fed. Reg. at 56.

Here, Appellants’ claims do not recite specific limitations (or a combination of limitations) that are beyond what was well-understood, routine, and conventional. As an initial matter, we note, as does the Examiner (*see, e.g.*, Final Act. 9), Appellants describe the components of the

claimed invention at a high level of generality and the components perform generic functions that are well-understood, routine, and conventional. *See* Spec. ¶¶ 49, 54, Fig. 7.

For example, the claims’ recitation of a method that is computer-implemented (claim 1), a computer system (claim 19), non-transitory computer-readable storage medium (claim 10), processor (claim 19), and storage device (claim 19), fail to transform a patent-ineligible concept into an eligible one. *See Mortgage Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324–25 (Fed. Cir. 2016) (generic computer components, such as an “interface,” “network,” and “database,” fail to satisfy the inventive concept requirement; *Alice*, 573 U.S. at 226 at 2360 (“Nearly every computer will include a ‘communications controller’ and a ‘data storage unit’ capable of performing the basic calculation, storage, and transmission functions required by the method claims.”). Further, the claims’ recitation of extracting features from a data set of entities reflects merely the storage and retrieval of data, which require nothing more than generic computer implementation and are well-understood, routine, and conventional techniques. *See, e.g., Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343, 1347–48 (Fed. Cir. 2014) (“The concept of data collection, recognition, and storage is undisputedly well-known. Indeed, humans have always performed these functions. . . .”); *id.* at 1348 (“storing information” into memory and using a computer to “translate the shapes on a physical page into typeface characters” are insufficient to confer patent eligibility).

For the reasons discussed *supra*, we are unpersuaded of Examiner error. Accordingly, we sustain the Examiner’s rejection of claims 1–27 under 35 U.S.C. § 101.

Rejections under 35 U.S.C. § 103

In rejecting independent claim 1, the Examiner finds Suresh teaches the “extracting” and “comparing” steps as recited but finds “Suresh does not explicitly disclose identifying a peer group for the entities in the data set based on auxiliary information which is distinct from the extracted features.” Final Act 12–13 (citing Suresh ¶¶ 19–20, 26, 41, 69–70, 78, 80–81, 109–110). The Examiner finds Byrne teaches, *inter alia*, developing peer groups based on specific characteristics (e.g., the size of facility or geographic location”) of medical centers or providers, i.e., entities in the data set. Final Act. 13 (citing Byrne 577–78); Ans. 7. The Examiner concludes “it would have been obvious to a person of ordinary skill in the art . . . to combine the known concept of identifying peer groups from Byrne with the peer groups for determining anomalies from Suresh in order to measure health care facility performance through equitable comparisons across health systems.” Final Act. 13 (citing Byrne 577–78).

Suresh relates to a method for determining potentially fraudulent service provider activity from claims data related to a particular type of entity (e.g., a healthcare facility). Suresh ¶ 19. Based on selected metrics derived from the claims data (e.g., length of stay, cost, diagnosis code counts for a healthcare entity), a profile of the entity’s activity may be created. Suresh ¶¶ 19, 78, 86, Table 3. In a disclosed embodiment, the profile is compared with other peer service providers to discern unusual and

potentially inappropriate activity. Suresh ¶ 78. Additionally, information may be obtained within a particular group by looking at characteristics of that group (e.g., driving elements, such as a principle diagnosis). Suresh ¶¶ 109, 119.

Byrne relates to a method to develop health care peer groups for quality and financial comparisons across hospitals. Byrne 577. In a disclosed embodiment, Byrne discloses establishing appropriate peer groups (i.e., grouping entities by similarity on specific characteristics), for such comparisons can help health care leaders and administrators make equitable comparisons across hospitals or health systems. Byrne 577–78. These characteristics may include, for example, the size and geographic location of a medical center. Byrne 579. According to Byrne, peer groups can help promote fair allocation of resources, evaluate efficiency or financial performance, as well as assess quality of care and outcomes in health care systems. Byrne 578.

Appellants argue the Examiner’s proposed combination of Suresh and Byrne fails to teach or suggest claim 1. App. Br. 28–35; Reply Br. 12–14. More specifically, Appellants submit that Suresh’s disclosure of “peer providers (to which the provider is compared) are not identified ‘based on auxiliary information which is distinct from the extracted features.’” App. Br. 31. Appellants further “submit[] that none of ‘the characteristics,’ ‘the selected characteristics,’ ‘domains,’ ‘measures,’ ‘structural characteristics,’ and ‘weight[ed] characteristics’ of Byrne is the same as auxiliary information of the instant application, which auxiliary information is distinct from the extracted features.” App. Br. 32. Accordingly, Appellants contend neither Suresh nor Byrne teaches “identifying a peer

group based on auxiliary information which is distinct from the extracted features.” App. Br. 31–32. Appellants further contend that “the Suresh system in combination with the Byrne system would at most identify peer groups based on extracted features (i.e., characteristics)” and, thus, “the Examiner’s proposed combination or modification of Suresh and Byrne would change the principle of operation of the Suresh and Byrne inventions being modified.” Reply Br. 13. App. Br. 33–35.

To the extent Appellants are arguing that neither Suresh nor Byrne individually teach or suggest the claimed invention, we are unpersuaded of Examiner error at least because Appellants’ arguments are not responsive to the rejection as articulated by the Examiner. *See* Ans. 7. Non-obviousness cannot be established by attacking references individually where, as here, the ground of unpatentability is based upon the teachings of a combination of references. *In re Keller*, 642 F.2d 413, 426 (CCPA 1981). Rather, the test for obviousness is whether the combination of references, taken as a whole, would have suggested the patentee’s invention to a person having ordinary skill in the art. *In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Here, the Examiner finds, and we agree, that Byrne’s disclosure of developing a peer group for medical centers or providers based on specific characteristics (e.g., the size of facility or geographic location) teaches “identifying a peer group for the entities in the data set based on auxiliary information which is distinct from the extracted features,” as recited in claim 1. *See* Final Act. 13; Ans. 7. Appellants’ Specification does not provide a limiting definition for the term “auxiliary information” that would preclude Byrne’s specific characteristics. Given its plain and ordinary meaning in the

context of the claim and Specification, “auxiliary information” may be any information (e.g., a feature) that is separate or distinct in any manner from the “extracted features.” Appellants do not present any persuasive evidence—nor does the record otherwise reflect—that Byrne’s specific characteristics are the same as Suresh’s claims data metrics.

In response to Appellants’ assertion that the proposed combination or modification of Suresh and Byrne would change the principle of operation of these references, Appellants do not provide any persuasive evidence or reasoning to support this assertion. It is well-settled that mere attorney arguments and conclusory statements, which are unsupported by factual evidence, are entitled to little probative value. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *see also In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974) (attorney argument is not evidence). Nor have Appellants presented sufficient evidence that combining Suresh’s method of comparing metrics-based profiles of peer service providers to discern unusual and potentially inappropriate activity with Byrne’s method of establishing a peer group based on specific characteristics would have been “uniquely challenging or difficult for one of ordinary skill in the art.” *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 420 (2007)). Accordingly, this assertion is entitled to little probative weight.

For the reasons discussed *supra*, we are unpersuaded of Examiner error. Accordingly, we sustain the Examiner’s § 103 rejection of claim 1. For similar reasons, we also sustain the Examiner’s § 103 rejection of independent claims 10 and 19, which recite similar limitations and were not argued separately. *See App. Br. 35; see also 37 C.F.R. § 41.37(c)(1)(iv)*

(2017). Further, we sustain the Examiner's rejections of claims 2–9, 11–18, and 20–27, which depend therefrom and were not argued separately. *See* App. Br. 35; *see also* 37 C.F.R. § 41.37(c)(1)(iv).

DECISION

We affirm the Examiner's decision rejecting claims 1–27 under 35 U.S.C. § 101.

We affirm the Examiner's decision rejecting claims 1–27 under 35 U.S.C. § 103.

We reverse the Examiner's decision rejecting claims 2, 3, 6–9, 11, 12, 15–18, 20, 21, and 24–27 under 35 U.S.C. § 112(a).

Because we affirm at least one ground of rejection with respect to each claim on appeal, the Examiner's decision rejecting claims 1–27 is affirmed. *See* 37 C.F.R. § 41.50(a)(1).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 41.50(f).

AFFIRMED