UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/993,419	06/12/2013	Lilla Boroczky	2010P01174WOUS	1087

24737 7590 05/23/2018	EXAMINER
PHILIPS INTELLECTUAL PROPERTY & STANDARDS 465 Columbus Avenue Suite 340 Valhalla, NY 10595	RAYYAN, SUSAN F

ART UNIT	PAPER NUMBER
2167	

NOTIFICATION DATE	DELIVERY MODE
05/23/2018	ELECTRONIC

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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 LILLA BOROCZKY, MARK R SIMPSON, YE XU,
and MICHAEL CHUN-CHIEH LEE

_____

Appeal 2017-010594
Application 13/993,419
Technology Center 2100

_____

Before JUSTIN BUSCH, JOHN P. PINKERTON, and JASON M. REPKO,
Administrative Patent Judges.

BUSCH, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellants appeal from the
Examiner's decision to reject claims 1–3, 9–14, 20, 21, 23, and 24, which
constitute all the claims pending in this application. We have jurisdiction
over the pending claims under 35 U.S.C. § 6(b). Claims 4–8, 15–19, and 22
were canceled previously. We affirm.

CLAIMED SUBJECT MATTER

Appellants' invention is generally directed to systems for analyzing
previous patients' data sets, displaying a subset of the previous patients' data
sets, and generating a treatment plan based on similarities between previous
patients' data sets and a current patient's data set. Spec. 1:20–2:8, 4:19–

5:24. Claims 1 and 12 are independent claims. Claim 1 is illustrative and reproduced below:

> 1.   A non-transitory computer-readable storage medium storing a set of instructions executable by a processor, the set of instructions being operable to:
>
> receive a current patient set of data relating to a current patient;
>
> compare the current patient set of data to a plurality of previous patient sets of data, each of the previous patient sets of data corresponding to a previous patient;
>
> select a plurality of the previous patient sets of data based on a level of similarity between the selected plurality of previous patient sets of data and the current patient set of data;
>
> rank the plurality of the previous patient sets of data based on the level of similarity between the selected plurality of previous patient sets of data and the current patient set of data;
>
> display at least one of the plurality of selected previous patient sets of data to a user based on the ranking; and
>
> generate a treatment plan based on corresponding treatment plans of the subset of the plurality of selected previous patient data sets.

REJECTIONS

Claims 1–3, 9–14, 20, 21, 23, and 24 stand rejected under 35 U.S.C. § 101 as being directed to ineligible subject matter. Final Act. 2–3.

Claims 1–3, 9, 12–14, 20, 23, and 24 stand rejected under 35 U.S.C. § 102(b) as anticipated by Frielinghaus (US 2007/0156453 A1; July 5, 2007). Final Act. 4–10.

Claims 10, 11, and 21 stand rejected under 35 U.S.C. § 103(a) as obvious in view of Frielinghaus and Takahashi (US 2009/0129658 A1; May 21, 2009). Final Act. 12–13.

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' arguments that the Examiner erred. In reaching this decision, we have considered all evidence presented and all arguments Appellants made. Arguments Appellants could have made, but chose not to make in the Briefs, are deemed waived. *See id.*

THE § 101 REJECTION

The Examiner concludes claims 1–3, 9–14, 20, 21, 23, and 24 are directed to judicially excepted subject matter. Final Act. 2–3; Ans. 9–15. In particular, the Examiner finds the claims are directed to merely comparing and organizing information and the recited steps involve concepts similar to those previously identified by courts as abstract. Final Act. 2 (citing *SmartGene, Inc. v. Advanced Biological Labs., SA*, 555 F. App'x 950 (Fed. Cir. 2014) (unpublished)); Ans. 11. The Examiner also concludes the particular elements recited in the claims impose insufficient meaningful limitations to transform the abstract idea into patent-eligible subject matter. Final Act. 2–3; Ans. 11–13. Appellants argue the § 101 rejection of all claims as a group. *See* App. Br. 10–14; Reply Br. 6–11. Accordingly, we select independent claim 1 as representative and decide the appeal of the § 101 rejection based on claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

Alice/Mayo Framework

The Patent Act defines patent-eligible subject matter broadly: "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. There is no dispute that claims 1–3, 9–14, 20, 21, 23, and 24 are directed to one of these categories.

In *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 70 (2012) and *Alice Corp. Pty. Ltd. v. CLS Bank International*, 134 S. Ct. 2347, 2354 (2014), the Supreme Court explained that § 101 "contains an important implicit exception" for laws of nature, natural phenomena, and abstract ideas. *See Diamond v. Diehr*, 450 U.S. 175, 185 (1981). In *Mayo* and *Alice*, the Court set forth a two-step analytical framework for evaluating patent-eligible subject matter: (1) "determine whether the claims at issue are directed to" a patent-ineligible concept, such as an abstract idea; and, if so, (2) "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements" add enough to transform the "nature of the claim" into "significantly more" than a patent-ineligible concept. *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 566 U.S. at 79); *see Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016).

Step one in the *Mayo/Alice* framework involves looking at the "focus" of the claims at issue and their "character as a whole." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). Step two involves the search for an "inventive concept." *Alice*, 134 S. Ct. at 2355; *Elec. Power*, 830 F.3d at 1353. For an inventive concept, "more is required than 'well-understood, routine, conventional activity already engaged in'" by the relevant community. *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1047 (Fed. Cir. 2016) (quoting *Mayo*, 566 U.S. at 79–80).

Step One of Alice Framework

Turning to step one of the *Alice* framework, the Examiner finds the claims merely recite steps involved in collecting, analyzing, and displaying information and, therefore, the claims are directed to an abstract idea. Final Act. 2–3. The Examiner finds the claims are more similar to the claims found ineligible by the Federal Circuit in *Electric Power* and *SmartGene* than the claims found eligible in *Google LLC v. Network-1 Techs., Inc.*, CBM 2015-00113, slip op. (PTAB Oct. 19, 2015). Ans. 13–15. Specifically, the Examiner finds *SmartGene's* recited expert rules are the same as, and provide the same results as, Appellants' claimed similarities. Final Act. 2; Ans. 11.

Appellants argue their claims are not similar to the claims in *SmartGene* and, accordingly, the Examiner erred in determining that Appellants' claims are directed to an abstract idea. App. Br. 10–12 (citing Memorandum from the Deputy Comm'r for Patent Examination Policy at the U.S. Patent and Trademark Office on Recent Subject Matter Eligibility Decisions 2, 4 (Nov. 2, 2016)). In particular, Appellants contend their claims are different from those in *SmartGene* because Appellants' claims determine a level of similarity between data sets, which is different than *SmartGene's* claims, which used rules to identify options. App. Br. 10–11.

Appellants further argue their claims are directed to "a computer-aided diagnostic and treatment system" that "provide[s] a particular solution to the problem of providing sufficient information to overcome a practitioner's skepticism of using computer-generated treatment plans." App. Br. 12; App. Br. 14 (arguing their "invention substantially improves the technology of computer-aided medical diagnostics" because it provides a

greater knowledge base than available to an individual practitioner). Appellants assert their claims, which select previous patients' data sets that are similar to a current patient's data set, are more like the claims in *Google LLC v. Network-1 Techs., Inc.*, CBM 2015-00113, slip op. at 4 (PTAB Oct. 19, 2015), which the Board found were necessarily rooted in computer technology based on the recitation of a particular correlation process for locating "a close but not necessarily exact match." App. Br. 12–13 (quoting *Google,* slip op. at 13); Reply Br. 7–11. Appellants further assert their claims, like those in *Google*, "cannot be performed by a human in any reasonable amount of time." Reply Br. 8.

We agree with the Examiner that claim 1, as a whole, is directed to collecting, analyzing, and displaying information. Ans. 12. Specifically, claim 1 recites collecting ("receive a current patient data set" and implicitly receive the recited "previous patient sets of data"), analyzing (comparing the current patient data to previous patients' data, selecting and ranking a subset of the previous patients' data identified as similar to the current patient data, and generating a treatment plan based on the selected subset of data), and displaying (displaying some of the previous patients' data) information. The Federal Circuit has "treated *collecting information,* including when limited to particular content (which does not change its character as information), as within the realm of abstract ideas." *Elec. Power*, 830 F.3d at 1353–54 (emphasis added) (finding collecting, analyzing, and displaying information, regardless of particular content, is an abstract idea); *Content Extraction*, 776 F.3d at 1347 (finding collecting, recognizing, and storing information is an abstract idea); *Digitech*, 758 F.3d at 1350 ("The method in the '415 patent claims an abstract idea because it describes a process of *organizing*

information through mathematical correlations and is not tied to a specific structure or machine" (emphasis added)); *see also Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1348–49 (Fed. Cir. 2015); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015). Although claim 1 limits the information to current and previous patient data, the particular content of the data manipulated does not change the nature of the claim.

Contrary to Appellants' assertions, the character of the claims as a whole is related to filtering patient data sets to identify and rank patient data sets similar to a current patient's data in order to provide a recommended treatment plan. Accepting Appellants' characterization of their invention, claim 1 provides a "solution to the problem of providing sufficient information to overcome a practitioner's skepticism of using computer-generated treatment plans" and "improves the technology of computer-aided medical diagnostics" by providing a greater knowledge base than available to an individual practitioner. App. Br. 12, 14. Accordingly, the claims allegedly solve a business problem (i.e., a practitioner trusting data) by providing the practitioner the underlying data that resulted in the suggested treatment plan. This problem and solution do not improve computer capabilities, but rather merely use computer technology as a tool to help sift through data (the purpose of computer databases and search methodologies). *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016) (explaining that *Alice's* first step "asks whether the focus of the claims is on the specific asserted improvement in computer capabilities (i.e., the self-referential table for a computer database) or, instead, on a process that qualifies as an 'abstract idea' for which computers are invoked merely

as a tool"). Moreover, simply using a computer to do what was previously done manually does not add significantly more to the abstract idea. *See Bancorp Servs. LLC v. Sun Life Assurance Co. of Canada*, 687 F.3d 1266, 1279 (Fed. Cir. 2012) ("the computer simply performs more efficiently what could otherwise be accomplished manually").

For the above reasons, we are unpersuaded the Examiner erred in concluding the claims are directed to an abstract idea.

Step Two of Alice Framework

Next, we turn to step two of *Alice* to determine whether the limitations, when considered both "individually and 'as an ordered combination'" contain an "inventive concept" sufficient to transform the claimed "abstract idea" into a patent-eligible application. *Alice*, 134 S. Ct. at 2355–58. The Examiner concludes the particular elements recited in the claims impose insufficient meaningful limitations to transform the abstract idea into patent-eligible subject matter. Final Act. 2–3; Ans. 11–13.

Appellants primarily argue only that the claims are not directed to an abstract idea. *See* App. Br. 10–14; Reply Br. 6–11. To the extent Appellants argue their claims recite significantly more than the abstract idea itself because claim 1 identifies "similar" data sets rather than using rules to find exact matches, *see* App. Br. 11–13; Reply Br. 8–11, we are unpersuaded by such arguments. Appellants' claims merely recite comparing a first data set with other data sets, selecting and ranking a plurality of the other data sets based on their "level of similarity" to the first data set, displaying at least one of the selected plurality of other data sets, and generating a treatment plan based on the selected other data sets. Claim 1's "level of similarity" is broad enough to encompass any comparison that can

distinguish between how similar a first data set is to other data sets. For example, claim 1 encompasses a system that selects and ranks data sets based on how many fields have values in the first data set that exactly match the fields' values in the other data sets.

Moreover, as discussed above, Appellants' claim 1 merely recites the routine use of a conventional computer to automate a practitioner's well-known, conventional, and routine steps for analyzing patient data and generating a treatment plan. *See Enfish*, 822 F.3d at 1335–36 ("[T]he first step . . . asks whether the focus of the claims is on the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an 'abstract idea' for which computers are invoked merely as a tool."); *Bancorp*, 687 F.3d at 1279; *OIP Techs.*, 788 F.3d at 1363 ("[R]elying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible."); *see also Intellectual Ventures I LLC v. Capital One Bank*, 792 F.3d 1363, 1370 (Fed. Cir. 2015) ("[O]ur precedent is clear that merely adding computer functionality to increase the speed or efficiency of the process does not confer patent eligibility on an otherwise abstract idea."); *see also Alice*, 134 S. Ct. at 2358–59. Here, the focus of the claims is not on an improvement in computers as tools or upon an innovative way to use computers or other devices, but is focused on an independently abstract idea that uses generic and routine steps as tools.

Neither the fact that the recited process and systems can more efficiently perform a human process nor the ability to display the data underlying the ultimate suggested treatment improves a computer or technology, but rather improves the process itself. *See Gottschalk v. Benson*,

409 U.S. 63, 66 (1972) (explaining that the claimed steps could easily "be carried out in existing computers long in use, no new machinery being necessary."). Accordingly, the claimed limitations, considered both individually and together, do not add significantly more to the abstract idea and, therefore, do not render the subject matter patent eligible.

Summary

For the above reasons, Appellants have not persuaded us the Examiner erred in rejecting claims 1–3, 9–14, 17, 18, 20, 21, 23, and 24 under 35 U.S.C. § 101 as being directed to merely an abstract idea, rendering the claimed subject matter ineligible.

THE §§ 102 AND 103 REJECTIONS

The "display . . . previous patient sets of data" Step

The Examiner finds Frielinghaus discloses every limitation recited in claims 1–3, 9, 12–14, 20, 23, and 24. Final Act. 4–10 (citing Frielinghaus ¶¶ 7, 21, 22, 28, 31, 38, 46, 52–54, 56). The Examiner further finds Frielinghaus discloses every limitation recited in claims 10, 11, and 21, except for the particular metrics used for determining the similarity between patient data sets, which the Examiner finds Takahashi teaches. Final Act. 12–13 (citing Takahashi ¶ 56).

Of particular note with respect to the independent claims, the Examiner finds Frielinghaus's provision of "data corresponding to results of [the] treatment plan (of the selected previous sets of data . . . to the medical personnel and/or patient," which includes probabilities," discloses the recited displaying step. Final Act. 5; Ans. 5. The Examiner further finds Frielinghaus analyzes prior patient information, analyzes current patient data relative to prior patients' data, provides a treatment plan or plans based on

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the analysis, and reports probabilities to the medical personnel or patient. Ans. 5 (citing Frielinghaus ¶¶ 53, 54, Fig 4 (items 56, 58, 60)). The Examiner finds "[t]he data selected corresponds to the previous patient data including treatment plans and results of previous patents," and the "data is provided to the medical personnel and therefore displayed for the use in treatment planning." Ans. 6.

Appellants contend Frielinghaus is like other prior art systems, which provide "no information regarding the prior patient's set of data that lead to the system's determination that the prior patient's set of data was substantially similar to the current patient's set of data." App. Br. 7. Appellants assert Frielinghaus merely informs a user of a similarity score and does not disclose the prior patient's data. *Id.* Appellants further argue "neither a reported treatment plan (58, 72) nor reported probabilities (60, 74) correspond to a set of prior patient's data." Reply Br. 3.

Claims 9 and 20

Claims 9 and 20 depend directly from independent claims 1 and 12, respectively. Claims 9 and 20 recite additional limitations relating to copying first and second elements from two different previous patients' treatment plans wherein the second element relates to a current patient's attribute that is similar to the corresponding attribute of the second previous patient but different than the corresponding attribute of the first previous patient. The Examiner finds Frielinghaus's paragraph 56 discloses these additional limitations. Final Act. 7, 10 (citing Frielinghaus ¶ 56); Ans. 8 (citing Frielinghaus ¶¶ 23–24, 54, 56, Abstract).

Appellants argue the Examiner has not demonstrated Frielinghaus discloses the additional limitations recited in dependent claims 9 and 20.

App. Br. 8–9; Reply Br. 5. In particular, Appellants assert Frielinghaus merely discloses creating a second treatment plan for a current patient based in part on the results of the first treatment plan selected. App. Br. 9. Appellants argue Frielinghuas's disclosure of a second treatment plan based on the current patient's post-treatment data does not disclose copying a first element for one previous patient's treatment plan and a second element from another previous patient's treatment plan. App. Br. 9. Appellants also assert Frielinghaus fails to disclose that the second element copied to the current patient's treatment plan relates to a current patient's attribute that is similar to the corresponding attribute of the previous patient from whose treatment plan the second element was taken but is different than the corresponding attribute of the previous patient from whose treatment plan the first element was taken. App. Br. 9; Reply Br. 5.

The Examiner responds to Appellants' arguments by explaining how Frielinghaus's system works. Ans. 8 (citing Frielinghaus ¶¶ 23–24, 54, 56, Abstract). Specifically, the Examiner finds Frielinghaus discloses analyzing prior patient data and outputting a first treatment plan to medical personnel, collecting data after performing the first treatment, and creating a second treatment plan using a different treatment option than used in the first treatment plan. Ans. 8 (citing Frielinghaus ¶¶ 23–24, 54, 56, Abstract).

In both the Final Action and the Answer the Examiner fails to identify sufficiently what aspect of Frielinghaus allegedly discloses the recited second element relates to an attribute of the current patient that is both different than a corresponding attribute of a first previous patient (from whose treatment plan the recited first element was copied) and similar to a corresponding attribute of a second previous patient (from whose treatment

plan the second element was copied). Accordingly, we are persuaded the Examiner erred in rejecting claims 9 and 20 as anticipated by Frielinghaus.

Summary

For the reasons discussed above, we are not persuaded the Examiner erred in rejecting independent claims 1 and 12, and claims 2, 3, 13, 14, 23, and 24, which depend therefrom, as anticipated by Frielinghaus, but we are persuaded the Examiner erred in rejecting dependent claims 9 and 20 as anticipated by Frielinghaus. Claims 10 and 21 depend directly from claims 1 and 12, respectively, and claim 11 depends from claim 10. Appellants do not separately argue the patentability of claims 10, 11, and 21 with particularity. *See* App. Br. 10. Accordingly, we are not persuaded the Examiner erred in rejecting claims 10, 11, and 21 as obvious in view of Frielinghaus and Takahashi for the same reasons discussed with respect to claims 1 and 12.

DECISION

We affirm the Examiner's decision to reject claims 1–3, 9–14, and 20–24 as directed to ineligible subject matter under 35 U.S.C. § 101.

We affirm the Examiner's decision to reject claims 1–3, 12–14, 23, and 24 under 35 U.S.C. § 102(b) as anticipated by Frielinghaus.

We reverse the Examiner's decision to reject claims 9 and 20 under 35 U.S.C. § 102(b) as anticipated by Frielinghaus.

We affirm the Examiner's decision to reject claims 10, 11, and 12 under 35 U.S.C. § 103(a) as obvious in view of Frielinghaus and Takahashi.

Because we affirm at least one ground of rejection with respect to each claim on appeal, the Examiner's decision 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)(1)(iv).

<u>AFFIRMED</u>