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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PAOLA KARINA TULIPANO, LILLA BOROCZKY, MICHAEL C. LEE, VICTOR PAULUS MARCELLUS VLOEMANS, INGWER CURT CARLSEN, ROLAND OPFER, and CHARLES LAGOR

Appeal 2017-009654
Application 12/989,805[1]
Technology Center 3600

Before ST. JOHN COURTENAY III, LARRY J. HUME, and JOYCE CRAIG, *Administrative Patent Judges*.

HUME, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the Final Rejection of claims 1, 4, 7–9, 11–15, and 17–23, which are all claims pending in the application. Appellants have canceled claims 2, 3, 10, and 16. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] According to Appellants, the real party in interest is Koninklijke Philips N.V. App. Br. 1.

STATEMENT OF THE CASE[2]

The Invention

Appellants' disclosed embodiments and claimed invention relate to methods and systems for personalized guideline-based therapy augmented by imaging information. Title.

Exemplary Claim

Claim 1, reproduced below, is representative of the subject matter on appeal (*emphasis* added to contested limitation):

> 1. A guideline-based clinical decision support system (CDSS), including:
>
> a non-transitory computer-readable medium having stored thereon a guideline engine that executes one or more guidelines for treating a current patient;
>
> an external image system that interfaces with the guideline engine;
>
> a case-based data-mining engine that compares current patient attributes, including current patient image attributes, to attributes of reference patients, including reference patient image attributes, stored in the external image system and determines a level of similarity between the current patient and respective reference patients;
>
> a guideline authoring tool that receives user input related to the current patient for generating a custom treatment guideline for the current patient;

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[2] Our decision relies upon Appellants' Appeal Brief ("App. Br.," filed Jan. 13, 2017); Reply Brief ("Reply Br.," filed July 5, 2017); Examiner's Answer ("Ans.," mailed May 8, 2017); Final Office Action ("Final Act.," mailed Aug. 24, 2016); and the original Specification ("Spec.," filed Oct. 27, 2010).

an ontology engine that communicates with one or more clinical information systems to retrieve reference patient attribute information for comparison to attributes associated with the current patient; and

a CDSS interface that presents a ranked list of reference patients to a user in order of similarity between the reference patients and the current patient;

wherein the one or more clinical information systems include an electronic medical record database and a natural language processing database that store information related to reference patients; and

wherein the user selects one or more reference patients from the ranked list of reference patients whose patient information has a level of similarity below a predetermined threshold in order to view more detailed information related to the selected reference patient.

Prior Art

The Examiner relies upon the following prior art as evidence in rejecting the claims on appeal:

Agus at al. ("Agus")	US 2004/0096896 A1	May 20, 2004
Sachdeva et al. ("Sachdeva")	US 2005/0038669 A1	Feb. 17, 2005
Busche et al. ("Busche")	US 2006/0101072 A1	May 11, 2006
Yoshii	US 2006/0241978 A1	Oct. 26, 2006

Rejections on Appeal

R1. Claims 1, 4, 7–15, and 17–23 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 11.

R2. Claims 1, 4, 7–15, and 17–23 stand rejected under 35 U.S.C. § 112(a) for failing to comply with the written description requirement. Final Act. 15.

R3. Claims 1, 7–9, 11–15, and 17–23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Yoshi, Busche, Sachdeva, and Agus. Final Act. 22–23.

R4. Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Yoshi, Busche, Sachdeva, Agus, and Zakim. Final Act. 49.

CLAIM GROUPING

Based on Appellants' arguments (App. Br. 8–24) and our discretion under 37 C.F.R. § 41.37(c)(1)(iv), we decide the appeal of patent-ineligible subject matter Rejection R1 of claims 1, 4, 7–15, and 17–23 on the basis of representative claim 1; and we decide the appeal of obviousness Rejection R3 of claims 1, 7–9, 11–15, and 17–23 on the basis of representative claim 1. We decide Rejection R2 of claims 1, 4, 7–15, and 17–23, and Rejection R4 of claim 4, *infra*.

Remaining claims in Rejections R2 and R3, not argued separately, stand or fall with the respective independent claim from which they depend.[3]

ISSUES AND ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellants. To the extent Appellants have not

[3] "Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately." 37 C.F.R. § 41.37(c)(1)(iv). In addition, when Appellants do not separately argue the patentability of dependent claims, the claims stand or fall with the claims from which they depend. *In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986).

advanced separate, substantive arguments for particular claims, or other issues, such arguments are waived. 37 C.F.R. § 41.37(c)(1)(iv).

Although we agree with Appellants' arguments regarding rejection R2, we disagree with Appellants' arguments with respect to claims rejected under R1, R3 and R4, and, regarding rejections R1, R3, and R4, unless otherwise noted, we incorporate by reference herein and adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken, and (2) the reasons and rebuttals set forth in the Examiner's Answer in response to Appellants' arguments. We highlight and address specific findings and arguments regarding claim 1 for emphasis as follows.

ANALYSIS

1. § 101 Rejection R1 of Claims – 1, 4, 7–15, and 17–23

Issue 1

Appellants argue (App. Br. 8–11; Reply Br. 3–5) the Examiner's rejection of claim 1 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter is in error. These contentions present us with the following issue:

Under our governing case law concerning 35 U.S.C. § 101, did the Examiner err in concluding claim 1 is directed to a judicial exception, i.e., an abstract idea, without significantly more, and thus is patent-ineligible under § 101?

Analysis

Alice Step 1 -- Abstract Idea

Appellants contend the Examiner has oversimplified the claims. App. Br. 9.

The Examiner concludes claim 1 is directed to presenting a list of reference patients to a user based on current patient attributes, which is an abstract idea based on its similarity to the identified category of receiving new and stored information and using rules to identify options. Final Act. 12.

Section 101 provides that anyone who "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." 35 U.S.C. § 101. The Supreme Court has repeatedly emphasized that patent protection should not extend to claims that monopolize "the basic tools of scientific and technological work." *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 71 (2012); *Alice Corp. Pty Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014). Accordingly, laws of nature, natural phenomena, and abstract ideas are not patent-eligible subject matter. *Id.*

The Supreme Court's two-part *Mayo/Alice* framework guides us in distinguishing between patent claims that impermissibly claim the "building blocks of human ingenuity" and those that "integrate the building blocks into something more." *Alice*, 134 S. Ct. at 2354. First, we "determine whether the claims at issue are directed to a patent-ineligible concept." *Id.* at 2355. If so, we "examine the elements of the claim to determine whether it contains

an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Id.* at 2357 (quoting *Mayo*, 566 U.S. at 72, 79). Although the two steps of the *Alice* framework are related, the "Supreme Court's formulation makes clear that the first-stage filter is a meaningful one, sometimes ending the § 101 inquiry." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) (citations omitted). We note the Supreme Court "has not established a definitive rule to determine what constitutes an 'abstract idea' for the purposes of step one. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (citing *Alice*, 134 S. Ct. at 2357).

However, our reviewing court has held claims ineligible as being directed to an abstract idea when they merely collect electronic information, display information, or embody mental processes that could be performed by humans. *Elec. Power Grp.*, 830 F.3d at 1353-54 (collecting cases). At the same time, "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 566 U.S. at 71. Under this guidance, we must therefore ensure at step one that we articulate what the claims are directed to with enough specificity to ensure the step one inquiry is meaningful. *Alice*, 134 S. Ct. at 2354 ("[W]e tread carefully in construing this exclusionary principle lest it swallow all of patent law.").

Under the "abstract idea" step we must evaluate "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*, 838 F.3d at 1257 (citation omitted).

Under step one, we agree with the Examiner that the invention claimed in independent claim 1 is directed to an abstract idea, i.e., "a guideline authoring tool that receives user input," "wherein the user selects one or more reference patients from the ranked list of reference patients." Claim 1. Further, we also conclude the claims are directed to organizing human activities and the recited functions or steps could be performed as a mental process, albeit with the aid of pen and paper.

As the Specification describes:

> Once the reference patients from the patient pool are ranked according to their respective distance values relative to the current patient, relevant medical information from the reference patients (e.g., medical histories, treatments, dosages, regimens, results, side effects, etc.) is presented to the user (e.g., in a list or table) on the CDSS interface.

Spec. 8, ll. 6–10.

We find this type of activity, i.e., receiving, storing, and processing order information, includes longstanding conduct that existed well before the advent of computers and the Internet, and could be carried out by a human with pen and paper. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011) ("That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.").

Our reviewing court has previously held other patent claims ineligible for reciting similar abstract concepts. For example, although the Supreme Court has altered the § 101 analysis since *CyberSource* in cases like *Mayo* and *Alice*, the Court continues to "treat[ ] analyzing information by steps people go through in their minds, or by mathematical algorithms, without

more, as essentially mental processes within the abstract-idea category." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146-47 (Fed. Cir. 2016) (alteration in original) (quoting *Elec. Power Grp.*, 830 F.3d at 1354). Also, collecting and comparing known information has been determined to be an abstract idea. *Classen Immunotherapies, Inc. v. Biogen IDEC*, 659 F.3d 1057, 1067 (Fed. Cir. 2011) ("Claim 1 of the '283 patent states the idea of collecting and comparing known information").

In this regard, the claims are similar to claims our reviewing court has found patent ineligible in *Electric Power Group*, 830 F.3d at 1353-54 (collecting information and "analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, [are] essentially mental processes within the abstract-idea category").

Therefore, in agreement with the Examiner, we conclude claim 1 involves nothing more than receiving, storing, processing, and transmitting data, without any particular inventive technology -- an abstract idea. *See Elec. Power Grp.*, 830 F.3d at 1354.

Accordingly, on this record, and under step one of *Alice*, we agree with the Examiner's conclusion the claims are directed to an abstract idea.

Alice Step 2 — Inventive Concept

If the claim is directed to a patent-ineligible concept, as we conclude above, we proceed to the "inventive concept" step. For that step we must "look with more specificity at what the claim elements add, in order to determine 'whether they identify an "inventive concept" in the application of the ineligible subject matter' to which the claim is directed." *Affinity Labs*, 838 F.3d at 1258 (quoting *Elec. Power Grp.*, 830 F.3d at 1353).

In applying step two of the *Alice* analysis, our reviewing court guides we must "determine whether the claims do significantly more than simply describe [the] abstract method" and thus transform the abstract idea into patentable subject matter. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014). We look to see whether there are any "additional features" in the claims that constitute an "inventive concept," thereby rendering the claims eligible for patenting even if they are directed to an abstract idea. *Alice*, 134 S. Ct. at 2357. Those "additional features" must be more than "well-understood, routine, conventional activity." *Mayo*, 566 U.S. at 79.

Evaluating representative claim 1 under step 2 of the *Alice* analysis, we agree with the Examiner that each of the limitations is not considered to be significantly more than the abstract idea. Ans. 42. Appellants further argue the claims set forth "something significantly more," without identifying what that precisely is. App. Br. 11. Appellants' argument is not persuasive as it does not identify what elements are set forth as being "significantly more." *Id.*[4]

Accordingly, as guided by our reviewing courts, and on this record, we are not persuaded of error in the Examiner's conclusion that the appealed claims are directed to patent-ineligible subject matter. Therefore, we sustain the Examiner's § 101 rejection of independent claim 1, and grouped claims 4, 7–15, and 17–23, which fall therewith. *See* Claim Grouping, *supra.*

[4] As evidence of the conventional nature of the computer-related technology, we note Appellants' Specification at least at page 4, lines 17–20.

2. § 112(a) Written Description Rejection R2: Claims 1, 4, 7–15, 17–23

Issue 2

Appellants argue (App. Br. 11–14; Reply Br. 5–6) the Examiner's rejection of claim 1 under 35 U.S.C. § 112(a) as lacking written description support is in error. These contentions present us with the following issue:

Did the Examiner err in finding the "wherein" clause lacks written description support, i.e., there is no originally filed support for the limitation "wherein the user selects one or more reference patients from the ranked list of reference patients whose patient information has a level of similarity below a predetermined threshold in order to view more detailed information related to the selected reference patient," as recited in claim 1, and as similarly recited in each of independent claims 15 and 23?

Analysis

Appellants contend the subject limitation is "found in originally filed claim 10, which is also present in PCT/IB2009/051882 and U.S. 61/051,895, both of which the present application claim [benefit]. See at least page 7, line 30 - page 8, line 16 of the present application. This portion also discloses that the distance value describes a level of similarity between the current patient and the reference patient, contrary to the Examiner's allegation in the Advisory Action." App. Br. 12.

In contending that claims 1, 14, 15 and 23 comply with the written description requirement, Appellants also point to page 8, line 23 – page 9, line 8 of the specification that explains:

> Distance values, which describe a level of similarity between the current patient and the reference patient, are calculated for

> patients based on the similar patient histories, which include variables such as tumor similarity, age, gender, etc. The similarity values are calculated based on these variables. Then, based on the calculated similarity values, a predefined number of closest matches is returned to the user. Thus, the attributes in the database are compared to the attributes of the current patient, and a predefined number indicative of similarity are presented to the user.

Reply Br. 6.

Regarding the rejection of claims 14, 15, and 22 over the term "generate and optimize a custom treatment guideline for the current patient from the received treatment guideline input," (claim 14), Appellants contend:

> Appellants refer the Examiner to page 9, line 23– page 10, line 2 and page 10, lines 12–18 of the specification. The attributes of the current patient are compared to the attributes of the reference patient, which are used to generate and optimize the treatment plan via the interface 12. Thus, claims 14, 15, and 22 comply with the written description requirement.

Reply Br. 6.

For essentially the same reasons argued by Appellants, we reverse the Examiner's rejection of independent claim 1, and also the rejection of independent claims 15 and 23, which recite the disputed limitation in commensurate form. For the same reasons, we also reverse the rejections of claims 4, 7–14, and 17–22 that depend therefrom.[5]

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[5] Because we agree with at least one of the dispositive arguments advanced by Appellant, we need not reach the merits of Appellants' other arguments. *See Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984) (finding an administrative agency is at liberty to reach a decision based on "a single dispositive issue").

3. § 103 Rejection R3 of Claims 1, 7–9, 11–15, and 17–23

Issue 3

Appellants argue (App. Br. 14–23; Reply Br. 7–9) the Examiner's rejection of claim 1 under 35 U.S.C. § 103(a) as being obvious over the combination of Yoshii, Busche, Sachdeva, and Agus is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination teaches or suggests a system that includes, *inter alia*, the limitations:

> *wherein the one or more clinical information systems include an electronic medical record database and a natural language processing database that store information related to reference patients; and*
>
> *wherein the user selects one or more reference patients from the ranked list of reference patients whose patient information has a level of similarity below a predetermined threshold in order to view more detailed information related to the selected reference patient,*

as recited in claim 1?

Analysis

Appellants admit Yoshi discloses two databases, but argue "Yoshi does not describe anything related to [natural language programming] NLP." App. Br. 14.

The Examiner finds Yoshi's extracting keywords and description "written in a normal writing style by applying a character search technique" teaches or at least suggests the disputed natural language processing. Ans. 46.

We agree with the Examiner's findings because the claim term "a natural language processing database" reads on Yoshi's search capabilities:

> For example, after extracting preset areas corresponding to "keywords" showing symptoms for descriptions of symptoms (clinical finding data) written in a normal writing style by applying a character search technique, scores can be given on presence/absence of symptoms and the degree of seriousness. Specifically, a function of comparing symptoms can be implemented by incorporating a published technique such as a full text search system Namazu (http://www.namazu.org/) into a system.

Yoshi ¶ 167.

Appellants further argue the limitation "wherein the user selects one or more reference patients from the ranked list of reference patients whose patient information has a level of similarity below a predetermined threshold in order to view more detailed information related to the selected reference patient" is not taught by the cited references. App. Br. 15–16.

We note, as the Examiner also pointed out (Ans. 47), the claim term "in order to view" is not claimed as a display step, but, instead, recited as a motivation or intended purpose. Therefore, we do not give this term patentable weight. We point out that an intended use of a claimed device does not limit the scope of the claim. *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997) (product claim's intended use recitations not given patentable weight); *see also Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1345 (Fed. Cir. 2003) ("An intended use or purpose usually will not limit the scope of the claim because such statements usually do no more than define a context in which the invention operates.").

Here, we conclude the recited claim 1 language "in order to view" merely defines the purpose of the user selection, and the Examiner has shown that the cited references are capable of providing user selection. We further agree with the Examiner's finding that Agus's patient data ranking table and other ranking tables at least suggest the selection of patients from the "ranked list of reference patients whose patient information has a level of similarity below a predetermined threshold," as recited in claim 1. Ans. 47–48; Agus, ¶ 35, Figs, 5, 6, 7.

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner's reliance on the cited prior art combination to teach or suggest the disputed limitation of claim 1, nor do we find error in the Examiner's resulting legal conclusion of obviousness. Therefore, we sustain the Examiner's obviousness rejection of independent claim 1, and grouped claims 7–9, 11–15, and 17–23 which fall therewith. *See* Claim Grouping, *supra*.

4. Rejection R4 of Claim 4

In view of the lack of any substantive arguments directed to obviousness Rejection R4 of claim 4 under § 103 (*see* App. Br. 24), we sustain the Examiner's rejection of this claim. Arguments not made are waived.

REPLY BRIEF

To the extent Appellants *may* advance new arguments in the Reply Brief (Reply Br. 3–10) not in response to a shift in the Examiner's position in the Answer, we note arguments raised in a Reply Brief that were not raised in the Appeal Brief or are not responsive to arguments raised in the

Examiner's Answer will not be considered except for good cause (*see* 37 C.F.R. § 41.41(b)(2)), which Appellants have not shown.

CONCLUSIONS

(1) The Examiner did not err with respect to patent-ineligible subject matter Rejection R1 of claims 1, 4, 7–15, and 17–23 under 35 U.S.C. § 101, and we sustain the rejection.

(2) The Examiner erred with respect to Rejection R2 of claims 1, 4, 7–15, and 17–23 under 35 U.S.C. § 112(a), written description, and we do not sustain the rejection.

(3) The Examiner did not err with respect to obviousness Rejection R3 of claims 1, 7–9, 11–15, and 17–23 under 35 U.S.C. § 103(a), and we sustain the rejection.

(4) The Examiner did not err with respect to obviousness Rejection R4 of claim 4 under 35 U.S.C. § 103(a), and we sustain the rejection.

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

DECISION

We affirm the Examiner's decision rejecting claims 1, 4, 7–9, 11–15, and 17–23.

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED