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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MATTS ANDERSSON and GUNNAR FLIVIK[1]

Appeal 2019-000014
Application 14/435,178
Technology Center 2100

Before ROBERT E. NAPPI, DENISE M. POTHIER, and JASON V. MORGAN, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1, 2, 4 through 10, 12 through 18, and 79 through 107, which constitute all the claims pending in this application. Oral arguments were heard on March 10, 2020. A transcript of the hearing will be added to the record in due course. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We reverse.

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). According to Appellant, Ortoma AB is the real party in interest. Appeal Br. 2.

INVENTION

The invention relates generally to method for planning an orthopedic procedure including positioning a virtual implant component relative to a 3D volume of scan data of a patient. Spec., Abstract. Claim 1 is reproduced below.

> 1. A computer-implemented method for positioning a virtual implant component relative to a volume of scan data of a patient, said method comprising:
>
> receiving a 3D volume of scan data of a patient, said scan data of a patient comprising scan data representing a bony anatomy of the patient;
>
> storing the 3D volume of scan data in a memory;
>
> transforming at least a portion of the 3D volume of scan data stored in a memory into multiple 2D views each showing a portion of said bony anatomy, said transforming comprising:
>
> generating, with a processor, a first 2D view of scan data based on the 3D volume of the scan data of the patient,
>
> generating, with the processor, a second 2D view of scan data based on the 3D volume of scan data, wherein the second 2D view of scan data is provided from the 3D volume of scan data at an angle relative to the first 2D view of scan data, and
>
> generating, with the processor, a third 2D view of scan data based on the 3D volume of scan data, wherein the third 2D view of scan data is provided from the 3D volume of scan data at an angle relative to the first 2D view of scan data and the second 2D view of scan data;
>
> storing in a memory and displaying said first, second and third 2D views of scan data on a graphical user interlace;
>
> receiving in a memory first positional information for the virtual implant component relative to the first 2D view of scan data input through the graphical user interface displaying the

first 2D view of scan data, said first positional information having a maximum of two degrees of freedom;

receiving in a memory second positional information for the virtual implant component relative to the second 2D view of scan data input through the graphical user interface displaying the second 2D view of scan data, said second positional information having a maximum of two degrees of freedom;

receiving in a memory third positional information for the virtual implant component relative to the third 2D view of scan data input through the graphical user interface displaying the third 2D view of scan data, said third positional information having a maximum of two degrees of freedom;

combining, with the processor, the first positional information, the second positional information, and the third positional information to create 3D positional information for the virtual implant component relative to the 3D volume of scan data, wherein the combination of the first positional information, the second positional information, and the third positional information comprises positional information for three different dimensions; and

displaying, in the graphical user interface, a 3D representation of the virtual implant component in a position relative to a 3D representation of the patient anatomy as defined by the 3D positional information.

EXAMINER'S REJECTION[2]

The Examiner rejected claims 1, 2, 4 through 10, 12 through 18, and 79 through 107 under 35 U.S.C. § 101 for being directed to patent-ineligible

[2] Throughout this Decision we refer to the Appeal Brief filed May 7, 2018 ("Appeal Br."); Reply Brief filed September 24, 2018 ("Reply Br."); Final Office Action mailed December 29, 2017 ("Final Act."); and the Examiner's Answer mailed July 23, 2018 ("Answer").

subject matter. Final Act. 5–8.

ANALYSIS

We have reviewed Appellant's arguments in the Appeal Brief, the Examiner's rejections, and the Examiner's response to Appellant's arguments. Appellant's arguments have persuaded us of error in the Examiner's rejection of all the claims under 35 U.S.C. § 101. Patent eligibility under § 101 is a question of law that may contain underlying issues of fact.

PRINCIPLES OF LAW

A. Section 101

An invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. However, the U.S. Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *E.g.*, *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Court's two-part framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.,* the use of a third party to mitigate settlement risk."); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4

in petitioners' application explain the basic concept of hedging, or protecting against risk.").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); "tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Court held that "a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 187; *see also id.* at 191 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). Having said that, the Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (citation omitted) (citing *Benson* and *Flook*); *see, e.g.*, *id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must 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." *Alice*, 573 U.S. at 221 (internal quotation marks omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

B. USPTO Section 101 Guidance

In January 2019, the U.S. Patent and Trademark Office (USPTO) published revised guidance on the application of § 101. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019 Revised Guidance").[3] "All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance." *Id.* at 51; *see also* October 2019 Update at 1.

Under the 2019 Revised Guidance and the October 2019 Update, we first look to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of

[3] In response to received public comments, the Office issued further guidance on October 17, 2019, clarifying the 2019 Revised Guidance. USPTO, *October 2019 Update: Subject Matter Eligibility* (the "October 2019 Update") (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf).

> organizing human activity such as a fundamental economic practice, or mental processes) ("Step 2A, Prong One"); and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)) ("Step 2A, Prong Two").[4]

2019 Revised Guidance, 84 Fed. Reg. at 52–55.

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look, under Step 2B, to whether the claim:

> (3) adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); or
>
> (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

2019 Revised Guidance, 84 Fed. Reg. at 52–56.

DISCUSSION

The Examiner determines the claims are not patent eligible because they are directed to a judicial exception without reciting significantly more. Final Act. 5–8. Specifically, the Examiner determines the claims are

[4] This evaluation is performed by (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception, and (b) evaluating those additional elements individually and in combination to determine whether the claim as a whole integrates the exception into a practical application. *See* 2019 Revised Guidance — Section III(A)(2), 84 Fed. Reg. at 54–55.

directed to the abstract idea of organizing human activity. Final Act. 5. Further, the Examiner recites limitations of claims 1, 80, and 94 and states:

> These steps combine gathered positional informations [sic] of a virtual model, which corresponds to concepts identified as abstract ideas by the courts, similar to the kind of collecting information, analyzing it, and displaying certain results of the collection and analysis at issue in Electric Power Group, (Electric Power hereinafter), LLC v. Alstom S.A., 119 USPQ2d 1739 Fed. Cir. 2016. Additionally, see organizing and manipulating information through mathematical correlations at issue in Digitech Image Tech., (Digitech hereinafter), LLC v. Electronics for Imaging, Inc., 758 F.3d 1344 (Fed. Cir. 2014).

Final Act. 6.

Appellant argues the Examiner has erred in finding that the claims are directed to abstract idea similar to that at issue in *Elec. Power Grp., LLC v. Alstom SA.*, 830 F.3d 1350 (Fed. Cir. 2016) and *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc*., 758 F.3d 1344, 1351 (Fed. Cir. 2014). Appeal Br. 15–16. Appellant states:

> Claim 1 expressly requires user interaction with the separately created 2D view through a graphical user interface in order to position a virtual implant within the virtual space as represented by the separate 2D views. There is no analog to these steps presented or analyzed by the court in *Electric Power*. Claim 1 can only be said to be "not meaningfully different" when those clear and important claim limitations are over-generalized or ignored.

Appeal Br. 16. Further, Appellant argues that the claims are different from those at issue in *Digitech* as they recite user input thorough a user interface, and the Examiner's analysis considers the claims at an unreasonably high level of generality. Appeal Br. 17.

We are persuaded of error. As discussed above, the case law and the

2019 Revised Guidance identify abstract ideas as including: certain methods of organizing human activity, such as fundamental economic practices; mathematical formulas; and mental processes. In the Final Office Action the Examiner has identified that the claims recite a method of organizing human activity. Final Act. 5. Further, in the Final Office Action and the Answer, the Examiner cites to *Electric Power Group* and *Digitech* as support for the finding that "collecting information, analyzing it, and displaying certain results of the collection and analysis" is an abstract idea. Final Act. 6; Answer 7, 17.

We disagree with the Examiner's analysis and find that the Examiner has not sufficiently shown that the claims recite an abstract concept. Each of claims 1, 80, and 94 recites steps of a) receiving and storing a 3D volume scan data of a bony anatomy of a patient; b) transforming the 3D volume scan into 2D views; c) generating and storing three 2D views based upon the 3D volume, each with a different angle relative to the other views; d) receiving positon information of a virtual implant relative the each 2D view where the positional information has a maximum of two degrees of freedom in each view; and e) combining the received positional information to create and display a 3D representation of the virtual implant relative to a 3D representation of the patent anatomy. We do not see, nor has the Examiner explained, how these limitations recite any steps related to organizing human activity, such as an economic process.

Also, in *Digitech*, the court said "a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible." *Digitech*, 758 F.3d at 1351. While the claim limitations directed to the transformation of views from 3D to 2D and

from 2D to 3D may be based on mathematical concepts, the mathematical concepts are not recited in the claims. Accordingly, we do not see, nor has the Examiner explained how these limitations recite a mathematical concept.

Further, the Examiner's reliance on *Electric Power Group* is insufficient to show that the claim is drawn to a mental process. In *Electric Power Group*, the court said "we have treated 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." *Elec. Power Grp.*, 830 F.3d at 1354. While the claims at a very high level recite steps of gathering data, manipulating the data and displaying the results, we do not consider the Examiner to have shown sufficiently that the steps discussed above could be practically performed in the human mind as in *Electric Power Group*. Thus, we do not find that the Examiner has shown that the claims recite a judicial exception (abstract idea), and we do not sustain the Examiner's rejection of independent claims 1, 80, and 94, and the claims which depend thereupon under 35 U.S.C. § 101.

CONCLUSION

We reverse the Examiner's rejection of claims 1, 2, 4 through 10, 12 through 18, and 79 through 107, under 35 U.S.C. § 101.

In summary:

Claim Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1, 2, 4–10, 12–18, 79–107	101	Eligibility		1, 2, 4–10, 12–18, 79–107

REVERSED