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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NATHAN W. LEVIN and FANSAN ZHU

Appeal 2018-002886
Application 13/879,220
Technology Center 3700

Before LINDA E. HORNER, BRETT C. MARTIN, and BRANDON J. WARNER, *Administrative Patent Judges.*

MARTIN, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 7, 8, 12–15, 24, 63, and 64. *See* Final Act. 2–11. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM IN PART.

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Fresenius Medical Care Holdings, Inc. Appeal Br. 1.

CLAIMED SUBJECT MATTER

The claims are directed to a dry weight predictor. Claim 64, reproduced below, is illustrative of the claimed subject matter:

> 64. A method for administering a dosage of a medicament to a user having a body mass index value including a bioimpedance measurement system, the bioimpedance measurement system comprising a central processing unit, a stimulating system including stimulating electrodes, and a recording system including recording electrodes, the method comprising:
>
> determining a resistance value of extracellular fluid volume of a user's calf by the stimulating and recording electrodes, the resistance value being sent to the central processing unit;
>
> measuring a circumference of the user's calf by the stimulating and recording electrodes, the circumference measurement being sent to the central processing unit;
>
> the central processing unit calculating a normalized resistivity based on the resistance value, the circumference measurement, and a body mass index value of the user;
>
> the central processing unit calculating an offset value between the normalized resistivity and a reference value for the normalized resistivity;
>
> the central processing unit calculating an estimated dry weight of the user, the estimated dry weight being based on the offset value, and a weight of the user determined during the calculation of the offset value is different from the estimated dry weight;
>
> determining a dosage of a medicament based on utilizing the estimated dry weight to determine a dosage of a medicament; and
>
> administrating the dosage of the medicament to the user.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Zhu	US 2006/0122450 A1	June 8, 2006
Woo	US 2009/0062728 A1	Mar. 5, 2009
Moissl et al., "*Body Fluid Volume Determination via Body Composition Spectroscopy in Health and Disease*," Physiol. Meas. 27 (2006) (921−33) ("Moissl")		

REJECTIONS

Claims 7, 8, 12–15, 24, 63, and 64 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Ans. 2.

Claims 7, 8, 12–15, 24, 63, and 64 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Ans. 3–5.

Claims 7, 8, 12–15, 24, and 63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhu and Moissl. Ans. 5–9.[2]

Claim 64 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhu, Moissl, and Woo. Ans. 9–11.

[2] The statement of the rejection on page 5 of the Answer omits claim 24, but the detailed explanation of the rejection includes an analysis of the obviousness of claim 24 on page 9 of the Answer.

OPINION

Written Description

The Examiner rejects independent claims 63 and 64, and by extension their dependent claims, for failing to comply with the written description requirement. According to the Examiner, the specification is insufficiently specific in describing the CPU as that which does the calculating of the claimed values. Ans. 2. We first note that original claim 57 specifically stated that the computer system is programmed to perform the step of calculating a difference value, which is equivalent to the claimed offset value of claims 63 and 64. Claim 42 likewise recited a computer program for executing the method of claim 26, which means the computer performs the various steps contained therein. For this reason alone, the claims find sufficient written description support. Furthermore, we agree with Appellant that "[t]he specification provides sufficient description to a person having ordinary skill in the art to understand that the central processing unit is utilized for executing commands, including mathematical operations." Reply Br. 2 (citing Spec. ¶¶ 37–41, 51). The Examiner appears to be looking for an *ipsis verbis* description of the computer specifically performing the steps as claimed, when all that is required is that one of ordinary skill in the art understand that the CPU performs the various operations, which the Specification adequately establishes. Accordingly, we do not sustain the Examiner's rejection.

Subject Matter Eligibility

Standard for Patent Eligibility

In issues involving subject matter eligibility, our inquiry focuses on whether the claims satisfy the two-step test set forth by the Supreme Court in *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014). The Supreme Court

instructs us to "first determine whether the claims at issue are directed to a patent-ineligible concept," *id.* at 216–18, and, in this case, the inquiry centers on whether the claims are directed to an abstract idea. If the initial threshold is met, we then move to the second step, in which we "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Id.* at 217 (*quoting Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 79, 78 (2012)). The Supreme Court describes the second step as a search for "an 'inventive concept'—*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Id.* (quoting *Mayo*, 566 U.S. at 72–73).

The USPTO recently published revised guidance on the application of § 101. USPTO's January 7, 2019 Memorandum, *2019 Revised Patent Subject Matter Eligibility Guidance* ("Memorandum"). Under that guidance, 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 organizing human activity such as a fundamental economic practice, or mental processes); and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h)).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look 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.

See Memorandum.

Examiner's Findings and Conclusion

In the first step of the *Alice* inquiry, the Examiner rejects claims 7, 8, 12−15, 24, 63, and 64 "because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more." Ans. 3. The Examiner identifies the claimed series of steps for calculating a patient's dry weight as the abstract idea. *Id.* At *Alice* step 2, the Examiner additionally finds that the claims do not add a meaningful limitation to the abstract idea so as to amount to significantly more than the judicial exception. *Id.*

Analysis According to the Guidelines

Step One: Do Claims 63 and 64 Fall Within a Statutory Category of § 101?

We first examine whether the claims recite one of the enumerated statutory classes of subject matter, i.e., process, machine, manufacture, or composition of matter, eligible for patenting under 35 U.S.C. § 101. Claims 63 and 64 are directed to a method, which is one of the statutory classes (i.e., a process) under 35 U.S.C. § 101.

Step 2A, Prong One: Do Claims 63 and 64 Recite a Judicial Exception?

We next look to whether the claims recite any judicial exceptions, including certain groupings of abstract ideas, i.e., mathematical concepts,

certain methods of organizing human activity such as a fundamental economic practice, or mental processes.

Claim 63

In this instance, claim 63, for example, recites the steps of determining a resistance value, measuring a circumference of the user's calf, calculating a normalized resistivity, calculating an offset value, and calculating an estimated dry weight of the user. Specifically, the claims recite:

> determining a resistance value of extracellular fluid volume of a user's calf by the stimulating and recording electrodes, the resistance value being sent to the central processing unit;
>
> measuring a circumference of the user's calf by the stimulating and recording electrodes, the circumference measurement being sent to the central processing unit;
>
> the central processing unit calculating a normalized resistivity based on the resistance value, the circumference measurement, and a body mass index value of the user;
>
> the central processing unit calculating an offset value between the normalized resistivity and a reference value for the normalized resistivity; and
>
> the central processing unit calculating an estimated dry weight of the user, the estimated dry weight being based on the offset value, and a weight of the user determined during the calculation of the offset value is different from the estimated dry weight.

Although these steps are claimed as being done by a processor or computer, the activities themselves are all capable of being performed in the human mind and, as such, each step of selecting, forming, and storing in the claim falls into the abstract idea of mental processes. *See*, *e.g.*, *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*."). Claim 64 recites steps similar to those discussed above. We therefore determine that claims 63 and 64 recite the abstract idea of mental processes, which is a judicial exception to patent-eligible subject matter.

Step 2A, Prong Two: Do Claims 63 and 64 Recite Additional Elements that Integrate the Judicial Exceptions into a Practical Application?

Claim 63

Following our Office guidance, having found that claim 63 recites a judicial exception, we next determine whether the claim recites "additional elements that integrate the exception into a practical application" (*see* MPEP §§ 2106.05(a)–(c), (e)–(h)). *See* Revised Guidance, 84 Fed. Reg. at 54. As noted above, each of the claimed steps is merely recited as being performed by a computer or processor. As used in the claims, the computer and processor are merely generic components of a computer system that do not result in an improvement in the functioning of a computer or other technology or technological field. The recitations of the generic structures with which the recited steps are performed are merely instructions to use a computer system as a tool to perform the abstract idea. Thus, the claims do not apply, rely on, or use the mental process steps in a manner that imposes a meaningful limit on those steps. Rather, the claim is simply a drafting effort designed to monopolize the mental process steps of claim 63.

The additional elements do not add meaningful limits to the mental process steps recited in claim 63. Instead, the generic computer system limitations are no more than instructions to apply the judicial exception (i.e., a mental process) using generic computer elements. *See* MPEP § 2106.05(f) ("Use of a computer or other machinery in its ordinary capacity for . . . tasks (*e.g.,* to receive, store, or transmit data) or simply adding a general purpose

computer or computer components after the fact to an abstract idea . . . does not provide significantly more.").

In short, the additional elements discussed above: (1) do not improve the functioning of a computer or other technology; (2) are not applied with any particular machine; (3) do not effect a transformation of a particular article to a different state; and (4) are not applied in any meaningful way beyond generally linking the use of the judicial exception to a particular technological environment. *See* MPEP §§ 2106.05(a)–(c), (e)–(h). Consequently, the claimed invention does not integrate the abstract idea into a "practical application."

For these reasons, the additional elements of claim 63 do not integrate the judicial exception into a practical application. Thus, claim 63 is directed to an abstract idea, which is a judicial exception to patent eligible subject matter under 35 U.S.C. § 101.

Claim 64

Claim 64 contains limitations similar to claim 63, but adds the steps of determining a dosage and then administering said dosage. These two additional steps, considered collectively, integrate the judicial exception into a practical application. According to claim 64, one would perform all of the steps to determine a proper dosage according to the method, but then would actually administer such a dosage to a user. We agree with Appellant that "administering a more accurate dosage of a medicament to a patient" determined according to the method "provides a real improvement to dialysis patients at risk for overhydration." App. Br. 15. By taking the data and calculations from the rest of the claim and then actually administering that calculated dosage to a patient, claim 64 goes beyond the abstract idea

itself, and integrates the idea into a practical application. Accordingly, we do not sustain the Examiner's rejection of claim 64.

Step 2B: Does Claim 63 Recite an Inventive Concept?

We next consider whether claim 63 recites any elements, individually or as an ordered combination, that transform the abstract idea into a patent-eligible application, e.g., by providing an inventive concept. *Alice*, 573 U.S. at 217–18. As noted above, the only additional elements in claim 63 are a processor and computer used for routine computer functionality to enact the method steps and use of electrodes for data collection. These additional elements do not provide, either individually or as a combination, improvements to another technology or technical field or the functioning of the computer itself.

According to Office guidance, under Step 2B, "examiners should . . . evaluate *the additional elements* individually and in combination . . . to determine whether they provide an inventive concept (*i.e.*, whether the additional elements amount to significantly more than the exception itself)." *See* Guidance 84 Fed. Reg. at 56 (emphasis added). Thus, the second step of the inquiry (Step 2B) looks at the additional elements in combination. *See*, *e.g.*, Examples accompanying Guidance (Example 37 (claim 3 analysis) and Example 40 (claim 2 analysis)). *See also BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) ("It has been clear since *Alice* that a claimed invention's use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention 'significantly more' than that ineligible concept.")

As noted above, the computer and processor are invoked as conventional tools. Apart from being used to perform the abstract idea

itself, these generic computer system components only serve to perform well-understood functions (e.g., storing, selecting, analyzing, and outputting data). *See FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1096 (Fed. Cir. 2016) ("the use of generic computer elements like a microprocessor or user interface do not alone transform an otherwise abstract idea into patent-eligible subject matter"). The electrodes likewise are used in a conventional manner to obtain data necessary for the ultimate calculation of dry weight. In our view, claim 63 fails to add a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field, but instead "simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception." *See* Guidance, 84 Fed. Reg. at 56. That is, we are not persuaded that claim 63 is directed to a specific application designed to achieve an improved technological result, as opposed to being directed to merely ordinary functionality of the above-recited additional elements to apply an abstract idea. For the reasons discussed above, we find no element or combination of elements recited in claim 63 that contains any "inventive concept" or adds anything "significantly more" to transform the abstract concept into a patent-eligible application. *See Alice*, 573 U.S. at 221.

Appellant's Contentions

Appellant first asserts that the present claims constitute an "improvement of estimating a dry weight," but the only alleged improvement is in the automation of the data collection and calculation. Reply Br. 3. Appellant also attempts to analogize the claims at issue to those in *Thales Visionix v. United States*, 850 F.3d 1343 (Fed. Cir. 2017). Reply Br. 4. As Appellant points out, it was the "unique configuration of

sensors" in *Thales* that amounted to improvement in the data gathering. *Id.* Appellant's claims, however, merely recite using known sensors in a known way to collect data and then process it with a computer. The improvement lies in the administration of a better dosage of medicament, which is encompassed in claim 64, not in the mere collection and processing of data found in claim 63. Accordingly, we sustain the Examiner's rejection of claim 63, as well as those claims dependent therefrom, for which Appellant offers no separate arguments.

Obviousness

Appellant points out that "Moissl is cited in the Office Action merely to support the proposition that it would have been known that the 'determination being made at a time when the individual's actual weight is different from the predicted/estimated value for the individual's dry weight,'" and that "none of Zhu, Moissl, and Woo, alone or in combination, disclose, or even suggest, all of the features included in claim 63." App. Br. 16−17 (making the same argument for claim 64). Although Appellant provides scant argument on this point, we still must look to the sufficiency of the cited evidentiary support for this claim limitation. In Moissl, the Examiner points us to Table one and the related description of "Subjects." Ans. 7 (citing Moissl p. 923). The Examiner provides no explanation as to how this portion of Moissl meets the alleged limitation. The portions of Moissl cited by the Examiner merely describe average characteristics for various subject groups across three locations and provide ranges of various characteristics. This says nothing about any particular subject, nor does it support the claimed comparison/difference between actual weight and predicted/estimated dry weight. The Examiner did not have a high bar given the lack of argument by Appellant, but we see no correlation between Moissl

and the claim language at issue such that we could affirm this rejection. Accordingly, we do not sustain the Examiner's obviousness rejection of the claims.

CONCLUSION

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
63, 64	112 ¶ 1			63, 64
7, 8, 12–15, 24, 63, 64	101		7, 8, 12–15, 24, 63	64
7, 8, 12–15, 24, 63	103(a)	Zhu, Moissl		7, 8, 12–15, 24, 63
64	103(a)	Zhu, Moissl, Woo		64
Overall Outcome:			7, 8, 12–15, 24, 63	64

TIME PERIOD FOR RESPONSE

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. § 1.136(a)(1)(iv).

AFFIRMED IN PART