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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MORRISON R. LUCAS

Appeal 2016-002678
Application 13/304,945
Technology Center 3600

Before: CHARLES N. GREENHUT, MICHELLE R. OSINSKI, and THOMAS F. SMEGAL, *Administrative Patent Judges*.

GREENHUT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from a rejection of claims 1–16. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

CLAIMED SUBJECT MATTER

The claims are directed to a method for phase unwrapping using confidence-based rework. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A method, executed by one or more computers, for unwrapping phase wrapped distance measurement data, the method comprising:
>
> receiving a signal comprising phase wrapped data including a plurality of nodes;
>
> selecting a root node from the plurality of nodes in the phase wrapped data;
>
> selecting next nodes to be unwrapped, from the neighbor nodes of the root node;
>
> starting to unwrap said next nodes;
>
> dynamically calculating a confidence factor for each node being unwrapped;
>
> when a closed loop wherein a current node can be unwrapped from either of two previously unwrapped nodes is encountered and unwrapped values for the current node predicted based on each of the two previously unwrapped nodes are different, comparing calculated confidence factors for the current node based on the two previously unwrapped nodes;
>
> using the compared confidence factors of the current node to determine which one of the two previously unwrapped nodes is an erroneous node;
>
> reprocessing the erroneous node to correct a previous unwrapping error to generate unwrapped data;
>
> converting the generated unwrapped data to distance measurement data; and
>
> transmitting the distance measurement data.

REJECTION

Claims 1–16 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to an abstract idea.

OPINION

The claims are argued based on claim 1 (App. Br. 3–11), which we agree is representative. 37 C.F.R. § 41.37(c)(1)(iv).

Principles of Law

A patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. The Supreme Court has consistently held that this provision contains an important implicit exception: laws of nature, natural phenomena, and abstract ideas are not patentable. *See Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) ("Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work."). Notwithstanding that a law of nature or an abstract idea, by itself, is not patentable, an application of these concepts may be deserving of patent protection. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293–94 (2012). In *Mayo*, the Court stated that "to transform an unpatentable law of nature into a patent-eligible *application* of such a law, one must do more than simply state the law of nature while adding the words 'apply it.'" *Mayo*, 132 S. Ct. at 1294 (citation omitted).

In *Alice*, the Court reaffirmed the framework set forth previously in *Mayo* "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355. The first step in the analysis is to "determine whether the claims at issue are directed to one

of those patent-ineligible concepts." *Id.* If the claims are directed to a patent-ineligible concept, then the second step in the analysis is to consider the elements of the claims "individually and 'as an ordered combination"' to determine whether there are additional elements that "'transform the nature of the claim' into a patent-eligible application." *Id.* (quoting *Mayo*, 132 S. Ct. at 1298, 1297).

In *Gottschalk*, the Court, citing *O'Reilly v. Morse* (56 U.S. 62 (1853)), cautioned that a claim "so abstract and sweeping as to cover both known and unknown uses" is not directed to patent-eligible subject matter under 35 U.S.C. § 101. *Gottschalk v. Benson,* 409 US at 68. In *Alice* the Supreme Court reaffirmed this principle:

> We have long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable. We have interpreted § 101 and its predecessors in light of this exception for more than 150 years. We have described the concern that drives this exclusionary principle as one of pre-emption. Laws of nature, natural phenomena, and abstract ideas are 'the basic tools of scientific and technological work. [M]onopolization of those tools through the grant of a patent might tend to impede innovation more than it would tend to promote it, thereby thwarting the primary object of the patent laws. We have repeatedly emphasized this concern that patent law not inhibit further discovery by improperly tying up the future use of these building blocks of human ingenuity.

Alice Corp. Pty. Ltd. v. CLS Bank Intern., 134 S. Ct. at 2354 (quotations and citations omitted).

Analysis

The abstract idea to which claim 1 is directed is phase unwrapping data. Final Act. 2. The Examiner correctly determined that mathematical algorithms, whether expressly recited in the claim or not (*see* App. Br. 4),

could be employed to perform the various steps recited. Ans. 2–3. Appellant correctly argues that this, in and of itself, is not determinative of eligibility. App. Br. 4. However, the Examiner has never held otherwise. Rather, the Examiner points to the absence of any concrete structure or manipulative steps for achieving any one of, or all of, the series of what amounts to abstract goals, recited in claim 1. Ans. 4. Under the broad scope of the claim, signals can be received, and data transmitted in any way, by any means. Similarly, node selection, unwrapping, calculating confidence factors, determining error, reprocessing, and converting can each be accomplished with any structure and through the use of any undefined algorithms, without limitation to that which is disclosed in the Specification. Ans. 4. The extent of this claim is significant and elements limiting the claim to a patent-eligible invention are lacking.

The Examiner does not dispute that algorithms can help define structures or steps. *See* App. Br. 8–11; *see also, e.g., Aristocrat Tech. Australia Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008). But a well-defined algorithm consisting of a number of concrete manipulative steps differs significantly from reciting a series of abstract goals each, and all, of which can be achieved through some undefined series of manipulative steps, and through the use of essentially any structure or means. The latter "inhibit[s] further discovery by improperly tying up the future use of these building blocks of human ingenuity." *Alice, supra* (quotation and citation omitted). Appellant's admission that the claimed method is applicable to a wide variety of imaging fields (App. Br. 7), none of which have any express basis in the claim to limit its scope, is an

argument supporting, rather than rebutting, the Examiner's position concerning the expansive and preemptive nature of this claim.

While we have carefully considered the claims in the cases cited by Appellant and the PTO's published guidelines (App. Br. 3–11), none of the exemplary claims, exhibit as much abstraction and preemptive effect as that currently before us. We agree with the Examiner that cases reciting concrete structures such as robotic arms and rubber molding are clearly distinguishable. Ans. 3–4. We additionally note that, while above, we have discussed the premise of Appellant's arguments based on opinions not from our reviewing courts (App. Br. 8–11), we agree with the Examiner that such decisions are not controlling before the PTO. Ans. 3–4.

DECISION

The Examiner's rejection is affirmed.

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