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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte VICTOR GORELIK and PHILIP C. DOYLE

Appeal 2018-002062
Application 11/937,737
Technology Center 3600

Before MARC S. HOFF, ELENI MANTIS MERCADER, and BETH Z. SHAW, *Administrative Patent Judges*.

SHAW, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a rejection of claims 1, 3, 4, 6–8, 10–12, 14–16, 18, 21–24, 26, 28, 29, and 31. Claims 2, 5, 9, 17, 19, 20, 25, 27, 30, 32, and 33 have been canceled.

We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

The claims are directed to a method for adjusting the scale resolution of displayed data. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A computer-implemented method of adjusting the scale resolution of a displayed set of data values of a chart associated with a financial instrument displayed in a graphical user interface (GUI), the method comprising:
>
> monitoring the displayed chart to detect a rescale condition, said chart including data points representing variations in the set of data values, wherein detecting the rescale condition includes detecting a spike in the set of data values that causes the chart's scale resolution to decrease such that, due to the decreased scale resolution, the variations in the set of values for the financial instrument are graphically compressed;
>
> determining that the spike is an anomaly;
>
> removing the spike from the set of data values based on the spike being an anomaly;
>
> automatically rescaling the chart with the spike removed such that the scale resolution of the chart is increased; and
>
> displaying the rescaled chart on the GUI with the increased scale resolution such that the variations in the set of values for the financial instrument are graphically expanded due to the increased scale resolution, wherein the determining that the spike is an anomaly is determined by:
>
> a) identifying a time interval associated with the financial instrument, the financial instrument having a first set of data

related thereto, wherein the first set of data includes a plurality of values selected from the group consisting of:

(i) a first value associated with a high value for the financial instrument during the time interval, (ii) a second value associated with a low value for the financial instrument during the time interval, (iii) a third value associated with an opening value for the financial instrument during the time interval, and (iv) a fourth value associated with a closing value for the financial instrument during the time interval,

b) based upon the first set of data, analyzing whether the time interval includes the spike, and based upon a pre-determined confidence C, determining that the time interval includes the spike

$$C = [1 - \int_R^\infty dx \int_R^\infty f(x,y)dy] * 100\%$$

wherein R is a user selected threshold, x is equal to the high value minus the closing value, and y is equal to the high value minus the opening value.

REJECTION

The Examiner rejected claims 1, 3, 4, 6–8, 10–12, 14–16, 18, 21–24, 26, 28, 29, and 31 ("the pending claims") under 35 U.S.C. § 101.

CONTENTIONS AND ANALYSIS

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 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 Supreme Court's two-step 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, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 192 (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 (1853))); 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 Supreme 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 176; *see also id.* at 192 ("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 Supreme 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.* (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 (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.* (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.*

The PTO 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.

The Examiner concludes the "claim limits describe idea(s) which are analogous to the basic concept of a mathematical procedure for converting one form of numerical representation to another." Final Act. 5. We agree that the claim limitation:

> based upon the first set of data, analyzing whether the time interval includes the spike, and based upon a pre-determined confidence C, determining that the time interval includes the spike

$$C = [1 - \int_{R}^{\infty} dx \int_{R}^{\infty} f(x,y)dy] * 100\%$$

> wherein R is a user selected threshold, x is equal to the high value minus the closing value, and y is equal to the high value minus the opening value

explicitly recites a mathematical concept, because the limitation explicitly states the "analyzing whether the time interval includes the spike" is "based on a pre-determined confidence C," which is determined using an explicit calculation or equation. Therefore, the claim recites a mathematical concept, which is a judicial exception identified in the Memorandum, and thus an abstract idea.

We next determine if there are additional element(s) or a combination of elements in the claim that integrate the judicial exception into a practical application. *See* MPEP § 2106.05(a)–(c), (e)–(h); Memorandum.

The claim as a whole is directed to a particular improvement in adjusting the scale resolution of a displayed set of data values of a chart associated with a financial instrument displayed in a graphical user interface. The additional elements recite a specific manner of "monitoring the displayed chart to detect a rescale condition," "detecting a spike in the set of data values," "determining that the spike is an anomaly," "removing the spike from the set of data values," "automatically rescaling the chart with the spike removed such that the scale resolution of the chart is increased," and "displaying the rescaled chart on the GUI with the increase scale resolution such that the variations in the set of values for the financial instrument are graphically expanded due to the increase scale resolution," which provides a specific improvement over prior systems, resulting in an improved way of adjusting the scale resolution of a displayed set of data values of a chart associated with a financial instrument displayed in a graphical user interface. *See* Memorandum § III A ("An additional element reflects an improvement

in the functioning of a computer, or an improvement to other technology or technical field."). In this regard, claim 1 is similar to the claims held patent eligible *Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1361 (Fed. Cir. 2018). There, the claims were directed to an improved display interface that allowed users to more quickly access stored data and programs in small-screen electronics, thereby improving the efficient functioning of the computer. *Id.* at 1359. The prior art taught that small-screen electronic interfaces required users to scroll through and switch views to find desired data and functions. *Id.* at 1363. Core Wireless's invention improved the efficiency of these display interfaces. By displaying only a limited list of common functions and data from which to choose, the invention spared users from time-consuming operations of navigating to, opening up, and then navigating within, each separate application. *Id.* The invention therefore increased the efficiency with which users could navigate through various views and windows. *Id.* The Federal Circuit concluded that the claims were patent eligible because the claims "recite[d] a specific improvement over prior systems, resulting in an improved user interface for electronic devices," and thus were directed to "an improvement in the functioning of computers." *Id.* at 1363.

Claim 1 of the similarly recites a method that differs from prior art methods and provides a "graph being scaled to prevent the spike from substantially affecting visual information relating to the set of transactions." Spec., Abstract. The invention provides an improved process for adjusting the scale resolution of a displayed set of data values of a chart displayed in a GUI, which if practiced, will "prevent the spike from substantially affecting the scale at which the information relating to the set

of transaction is displayed." Spec. ¶ 16. In addition, akin to the claims in *Core Wireless*, claim 1 recites a "specific" and "particular" manner of removing the spike, "automatically rescaling the chart with the spike removed such that the scale resolution of the chart is increased," and "displaying the rescaled chart on the GUI with the increase scale resolution such that the variations in the set of values for the financial instrument are graphically expanded due to the increase scale resolution," that improves the efficient functioning of computers. *See Core Wireless*, 880 F.3d at 1362, 1363; *see also Data Engine Techs. LLC v. Google LLC*, 906 F.3d 999, 1009 (Fed. Cir. 2018) (holding claims eligible as reciting a specific a particular manner of navigating a three-dimensional spreadsheet that improves the efficient functioning of computers). The claim as a whole therefore integrates the mathematical concept into a practical application.

Accordingly, we do not sustain the rejection of the pending claims under 35 U.S.C. § 101.

DECISION

For the above reasons, the Examiner's rejection of claims 1, 3, 4, 6–8, 10–12, 14–16, 18, 21–24, 26, 28, 29, and 31 is reversed.

REVERSED