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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RALF WERNER MUNKES, MARKUS WERNER, and STEFAN RUSCHEL

Appeal 2018-005832
Application 13/715,149[1]
Technology Center 3600

Before DAVID M. KOHUT, ERIC B. CHEN, and JOSEPH P. LENTIVECH, *Administrative Patent Judges*.

KOHUT, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant appeals from the Examiner's decision to reject claims 1, 3, 5–10, 12–16, 18, 19, and 21–32.[2] We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We reverse.

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[1] According to Appellant, the real party in interest is "SOFTWARE AG." App. Br. 3.

[2] Claims 2, 4, 11, 17, and 20 are canceled. Amendment filed February 24, 2017 (listing of claims).

STATEMENT OF THE CASE

Appellant's invention relates "to finding paths between source and target elements in a model" and "the ability to filter out paths, objects, and/or other elements that are not of interest." Spec. ¶ 1. Claim 1 is exemplary and reproduced below.

> 1. A path finding method performed by an information processing system comprising at least one processor, the path finding method being executed on a computer-represented model comprising a plurality of computer-represented objects including concrete level objects and methodic-level objects, the computer-represented model being defined in accordance with a modeling convention and including a plurality of layers, the plurality of layers including a first layer describing what kind of computer-represented objects and/or connections are usable in the computer-represented model, the second layer defining the methodic-level objects, and a third layer defining the concrete-level objects, the path finding method facilitating data mining of information relating to the objects and/or relationships between objects represented by the model, the method comprising:
>
> receiving, from a user and via a user interface, input specifying a source object, a target object, a maximum step size, and at least one stopover item that must be present between the specified source object and the specified target object;
>
> developing a net representing at least all methodic-level objects in the model between the source and target objects and concrete-level objects in the model between the source and target objects, each of the methodic-level objects being a step of at least one path between the source and target objects and each of the concrete-level objects being a step of at least one path between the source and target objects, and all relationships between the concrete-level objects and the methodic-level objects in the model [represented] by connections between the concrete-level objects and the methodic-level objects, wherein

each said concrete-level object is an instance of an associated methodic-level object;

compiling a list of paths, through the net, from the source object to the target object, each said path having a path length associated therewith, each path including the one or more steps corresponding to the methodic-level objects, the one or more steps corresponding to the concrete-level objects, the one or more specified stopover items that must be present between the specified source object and the specified target, and the path length of each path in the list determined by the steps corresponding to the methodic-level objects and the concrete-level objects being less than the specified maximum step size;

following said compiling of the list of paths, displaying on a display the compiled list of paths to the user in text-based and/or graphical form and a filter list indicating model types, object types, attributes of objects, and/or relationship types in the developed net to enable the data mining without requiring the user to have detailed knowledge of the model and/or without requiring the user to input search queries using a predetermined technical scripting format, to provide consistent and repeatable results within a single modeling environment used to model the computer-represented model;

receiving, from the user via the user interface, input specifying one or more user-specified filters from the filter list;

excluding, from the list of paths and in connection with the at least one processor, individual ones of said paths that fail to meet the one or more user-specified filters; and

following said excluding and without the user having to make an adaptation to the computer-represented model or the modeling convention, updating the displayed list of paths to the user in text-based and/or graphical form to take into account updates thereto resulting from the excluding and further facilitate the data mining without requiring the user to have detailed knowledge of the model and/or without requiring the

> user to input search queries using a predetermined technical scripting format, to generate updated consistent and repeatable results within the single modeling environment used to model the computer-represented model.

REJECTION

Claims 1, 3, 5–10, 12–16, 18, 19, and 21–32 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Non-Final 2–4.

PRINCIPLES OF LAW

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) (citation omitted).

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, 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 (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 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 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 (citation 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.*

PTO GUIDANCE

The PTO recently published revised guidance on the application of § 101. USPTO's 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019).[3] 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) (9th ed. 2018).

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

[3] The USPTO also recently published updated revised guidance on the application of § 101 which provides additional examples and explanation and responds to five major themes from comments solicited from the public. USPTO's October 2019 Patent Eligibility Guidance Update, 84 Fed. Reg. 55942 (October 18, 2019). The update focuses on clarifying patent examiner practice. *Id.*

conclude the claim is directed to a judicial exception (*id.* at 54) and 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.

Id. at 56.

ANALYSIS

For this rejection, Appellant's arguments, the Examiner's responses, and the Non-Final Action each address all claims as a group and only claim 1 with particularity. App. Br. 14–29; Ans. 2–13; Non-Final 2–6. We therefore decide the appeal of this rejection on the basis of claim 1.

Step 2A(1): The Examiner fails to show the claims recite judicial exceptions.

Appellant argues that the Examiner does not explain why the claim features identified as constituting judicial exceptions are in fact judicial exceptions. App. Br. 14–18; Reply 2–6. As to the alleged failure of the Examiner to meaningfully identify claim features as judicial exceptions, Appellant contends:

> The Office Action[] . . . moves . . . through iterative levels of abstraction, arriving at a fragment of a thought that bears no resemblance to the . . . claims . . . or . . . relied-upon court cases. That is, [after] merely reproducing some (but not all) language of claim 1, the Office Action abstracts that limited text to nine (9) words[—]"[r]eceiving, developing, compiling, displaying, receiving, excluding, and updating data"[— that are] not a bona

> fide statement of what the claims . . . [are] "directed to" under a proper *Alice* part 1 analysis. . . . [T]he Office Action . . . farther abstracts the claim language [to] . . . "organizing human activity" and "idea of itself." **The Office Action is not free to rely on an abstraction ("organizing human activity" or "idea of itself") of an abstraction (the nine words excerpted from claim 1) of an abstraction (the selected language of claim 1 amounting to almost five lines of text) of the actual claim language (which actually includes 40+ lines of text) when framing the abstract idea to which the claims allegedly are directed.**

App. Br. 15–16. Appellant also presents claim features that are recited in detail but not discussed by the Examiner, contending:

> [C]laim 1 (for example) is specific about what inputs are received from the user, how the net is developed and the specific feature of the developed net based on the received inputs, compiling a list of specific paths through the net, displaying compiled list of paths to the user in text-based and/or graphic form and a filter list including specific features, receiving user-specific filters, and excluding individual paths that fail to meet the one or more user-specified filters.

Id. at 17. Appellant further contends that "[s]o much of the claim has not been considered it is somewhat difficult to know where to begin pointing out the errors in this approach." *Id.* at 16 (underlining omitted).

We agree with Appellant and add the following for emphasis. The claimed invention develops and uses a net of source objects, target objects, pathways between the source objects and target objects, required stopover items and maximum path lengths between the source objects and target objects, and statuses of each object as a methodic-level object and instanced concrete-level object (each concrete-level object is an instance of a methodic-level object). Spec. ¶ 18. Via these features, the claimed invention also permits a user to compile a list of paths restricted to (filtering out) objects, items, and path segments meeting user-specified criteria. *Id.*

Appellant's Figure 5, reproduced below, illustrates an example of the

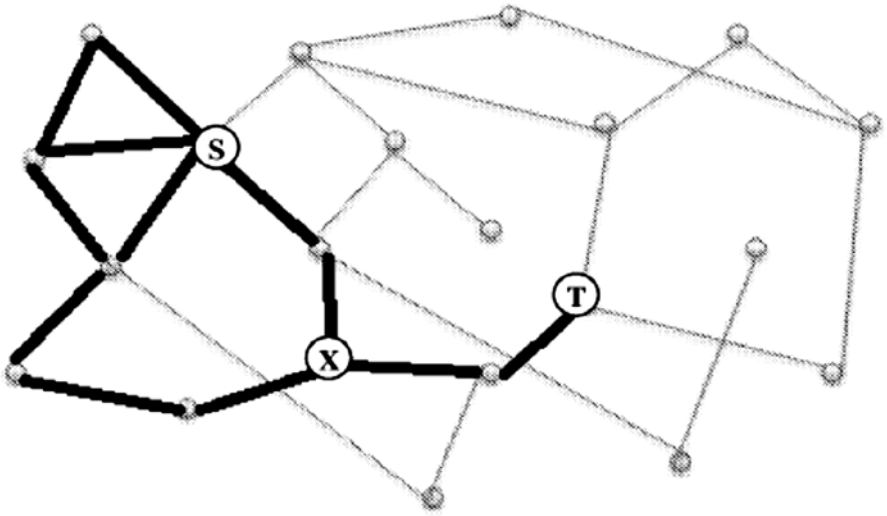

Fig. 5

> Figure 5 illustrates "an example of a net that includes methodic objects, relations between the method objects, and concrete objects." Spec. ¶ 25 (describing Figure 3).

invention's above features (*see infra*) and particularly a "net that includes methodic objects, relations between the method objects, and concrete objects." *Id.* (describing Figure 3).[4] The Specification describes the net as follows:

> [M]ethodic objects and relations therebetween, together with concrete objects, may be thought of as comprising one net. . . . The dot with the "S" in it is an example for a source item, where the user starts his question, and the dot with the "T" in it is the target item in this example. The very thick and dark relations are paths that lead, more or less, directly from the source item to the target item. All dots in these paths symbolize

[4] The net of Figure 5 is identical to the net of Figure 3 (but selects a different target object "T" and changes Figure 3's target object to a stopover item "X"). To explain the claimed features lacking proper examination, we reproduce Figure 5 and Specification descriptions of Figures 3 and 5.

> steps, and may be used to determine the path length. This may be helpful, for example, when a user wants to limit the number of steps to reduce the number of results. [N]ot all paths . . . that lead to the target are marked with heavy, darker lines. This helps to illustrate that where step limits are imposed, some paths will not be relevant for a user.

Id. ¶ 45 (describing Figure 3). The Specification further explains:

> To make the result paths at least somewhat more defined, it is also possible to define one or more stopovers. If the user defines such stopovers, then only paths that contain all of the defined stopovers will be added to the result. Paths that do not contain all stopovers will be ignored. Stopovers may in some instances be methodic objects or concrete objects (e.g., the source is a person S, the target refers to one or more functions T, and the stopover is process X).

Id. ¶ 48 (describing Figure 5).

Thus, as shown above, Claim 1 recites all of the above features within the claim operations identified by the Examiner as constituting judicial exceptions**.** However, as reflected by Appellant's contentions (App. Br. 14), the Examiner does not meaningfully address the above features, much less show they constitute judicial exceptions. Instead, the Examiner only summarily finds "[t]his [combination] is simply the recited receiving, developing, compiling, displaying, receiving, excluding, and updating data which can be performed in a computer and is similar to the kind of 'organizing human activity' and is an idea of itself." Non-Final 4 (emphasis omitted).

As demonstrated by the Guidance, the judicial exception of "organizing human activity" is not a sweeping category for all activities that manage and process data. The judicial exception of "organizing human activity" is rather limited to:

> (b) ***Certain*** methods of organizing human activity—fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions).

84 Fed. Reg. 52 (emphasis added). The Examiner has not shown how the above claim features fall within one of these "certain" (i.e., specific) methods of organizing human activity. Additionally, because the Examiner has failed to show that the claim limitations equate to judicial exceptions, the Examiner has also failed to show that the claim limitations result in an "idea of itself."

Thus, for all the reasons indicated above, we do not sustain the rejection of claims 1, 3, 5–10, 12–16, 18, 19, and 21–32 under 35 U.S.C. § 101.

DECISION

In summary:

Claims Rejected	Basis	Affirmed	Reversed
1, 3, 5–10, 12–16, 18, 19, and 21–32	§ 101		1, 3, 5–10, 12–16, 18, 19, and 21–32

REVERSED