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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HERB SORENSEN

Appeal 2018-002440
Application 13/838,614[1]
Technology Center 3600

Before JOSEPH A. FISCHETTI, NINA L. MEDLOCK, and ROBERT J. SILVERMAN, *Administrative Patent Judges*.

FISCHETTI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant seeks our review under 35 U.S.C. § 134 from the Examiner's non-final rejection of claims 1–3, 5, 7–12, 14, and 16–18. We have jurisdiction under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We affirm.

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[1] Appellant identifies Shopper Scientist, LLC. as the real party in interest. App. Br. 3.

THE INVENTION

Appellant's Specification describes a "method for analyzing shopping behavior… [wherein] a current number of shoppers may be detected and an in-store service deployed in response to detecting that a current number of shoppers exceeds a first predetermined threshold." Spec. ¶ 69 (Abstract).

Claim 1, reproduced below, is representative of the subject matter on appeal.

> 1. A system for analyzing shopper behavior within a store, the system comprising:
>
> a sensor system configured to:
>
> for each of a plurality of a first group of shopper trips in the store,
>
> detect a wireless signal for a shopper proxy device adjacent an entrance to the store;
>
> detect a wireless signal for the shopper proxy device adjacent an exit of the store;
>
> a data analyzer computing device configured to:
>
> determine a trip length for each shopper based on a time between the detected presence of the detected wireless signal at the entrance and the detected presence of the detected wireless signal at the exit of the store;
>
> determine a total number of shopper trips by multiplying a number of the detected wireless signals by a calibration factor, the calibration factor determined based on image data of the entrance and exit captured by one or more cameras, and the calibration factor relating a number of shopper proxy devices to a total number of actual shoppers observed in the image data during a calibration period;
>
> calculate a first relationship that is a distribution of the determined trip lengths over the number of shopper trips and trip length;

determine an average trip length based on the distribution of the first relationship;

for each of a plurality of a second group of shopper trips in the store,

receive transaction data for a plurality of purchase transactions at the store, and transaction data for a plurality of items, the transaction data for the plurality of purchase transactions including a number of items purchased for each purchase transaction;

calculate a second relationship that is a distribution of items purchased in the purchase transactions over the shopper trips;

determine an average number of items purchased based on the distribution of the second relationship;

wherein the sensor system is further configured to:

detect current wireless signals in the store; and

wherein the data analyzer computing device is further configured to:

determine a current total number of shoppers in the store by multiplying the detected current wireless signals by the calibration factor;

determine a number of items to be purchased by the current total number of shoppers by multiplying the average number of items purchased by the current total number of shoppers;

wherein the system further comprises an alert device to signal for deploying an in-store service, the alert device being configured to signal that the in-store service be deployed in response to one or both of:

the data analyzer computing device determining that the total number of shoppers exceeds a first predetermined threshold, in which case the alert device is configured to signal for deploying the in-store service

> after a predetermined period of time following detection that the current number of shoppers exceeds the first predetermined threshold, the predetermined period of time being equal in duration to the average trip length, and
>
> the data analyzer computing device estimating that the number of items to be purchased by the current total number of shoppers exceeds a second predetermined threshold, in which case the alert device is configured to signal for deploying the in-store service after the predetermined period of time following detection that the number of items to be purchased by the current total number of shoppers exceeds the second predetermined threshold.

THE REJECTION

The following rejection is before us for review.[2]

Claims 1–3, 5, 7–12, 14, and 16–18 are rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.

FINDINGS OF FACT

We adopt the Examiner's findings as set forth on pages 2–12 in the Non-Final Office Action and on pages 3–16 in the Examiner's Answer.

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[2] The Examiner withdraws the rejection under 35 U.S.C. § 103(a) and holds the 35 U.S.C. § 112(a) rejection moot. *See* Non-Final Act. 8. Therefore, the only rejection before us on appeal is the rejection made under 35 U.S.C. § 101.

ANALYSIS

35 U.S.C. § 101 REJECTION

We will affirm the rejection of claims 1–3, 5, 7–12, 14, and 16–18 under 35 U.S.C. § 101.

The Appellant argues 1–3, 5, 7–12, 14, and 16–18 as a group, and we select claim 1 as the representative claim for this group (App. Br. 12), and so the remaining claims stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2015).

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 id.* 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 183 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.*, *Diehr*, 450 U.S. 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.* (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.*

The PTO recently published revised guidance on the application of § 101. USPTO, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Guidance"). Under the 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* Manual of Patent Examining Procedure ("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 generally Guidance.

The U.S. Court of Appeals for the Federal Circuit has explained that "the 'directed to' inquiry applies a stage-one filter to claims, considered in

light of the [S]pecification, based on whether 'their character as a whole is directed to excluded subject matter.'" *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (quoting *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)). It asks whether the focus of the claims is on a specific improvement in relevant technology or on a process that itself qualifies as an "abstract idea" for which computers are invoked merely as a tool. *See id.* at 1335–36.

In so doing, as indicated above, we apply a "directed to" two prong test: 1) evaluate whether the claim recites a judicial exception, and 2) if the claim recites a judicial exception, evaluate whether the claim "appl[ies], rel[ies] on, or use[s] the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception." Guidance, 84 Fed. Reg. at 53; *see also* MPEP §§ 2106.05(a)–(c), (e)–(h).

The Specification describes the problem addressed by the claims as:

> Methods of tracking customer entry into a retail environment exist but customer volume may not correlate with in-store service needs. For example, many customers may enter a store in a short period of time. However, if only a portion of the customers make purchases or the purchases are of a small number of items, additional in-store service may be unnecessary. In addition, deploying additional employees to sales registers immediately following an influx of shoppers may not be reflective of shopper behavior in a given retail environment as some shoppers may linger in a store for an amount of time before making a purchase.

Spec. ¶ 2.

The preamble of claim 1 states it is for "analyzing shopper behavior within a store." Understood in light of the Specification, claim 1 recites, in pertinent part,

determine a trip length for each shopper based on a time between the detected presence of the detected wireless signal at the entrance and the detected presence of the detected wireless signal at the exit of the store;

determine a total number of shopper trips by multiplying a number of the detected wireless signals by a calibration factor, the calibration factor determined based on image data of the entrance and exit . . . , and the calibration factor relating a number of shopper proxy devices to a total number of actual shoppers observed in the image data during a calibration period;

calculate a first relationship that is a distribution of the determined trip lengths over the number of shopper trips and trip length;

determine an average trip length based on the distribution of the first relationship;

for each of a plurality of a second group of shopper trips in the store,

receive transaction data for a plurality of purchase transactions at the store, and transaction data for a plurality of items, the transaction data for the plurality of purchase transactions including a number of items purchased for each purchase transaction;

calculate a second relationship that is a distribution of items purchased in the purchase transactions over the shopper trips;

determine an average number of items purchased based on the distribution of the second relationship;

. . .

determine a current total number of shoppers in the store by multiplying the detected current wireless signals by the calibration factor;

determine a number of items to be purchased by the current total number of shoppers by multiplying the average number of items purchased by the current total number of shoppers;

> wherein the system further comprises an alert device to signal for deploying an in-store service, the alert device being configured to signal that the in-store service be deployed in response to one or both of:
>
> . . .
>
> determining that the total number of shoppers exceeds a first predetermined threshold, in which case . . . deploying the in-store service after a predetermined period of time following detection that the current number of shoppers exceeds the first predetermined threshold, the predetermined period of time being equal in duration to the average trip length, and
>
> . . . estimating that the number of items to be purchased by the current total number of shoppers exceeds a second predetermined threshold, in which case . . . deploying the in-store service after the predetermined period of time following detection that the number of items to be purchased by the current total number of shoppers exceeds the second predetermined threshold.

Accordingly, the Examiner found that the claims "are directed to the abstract ideas of collecting and analyzing shopper data to determine if extra help is required in store based on the analysis of the collected data." (Non-Final Act. 9.)

We agree with the Examiner's finding here because claim 1 requires determining "if extra help is required in [a] store;" "determin[ing] a trip length for each shopper;" determin[ing] a total number of shopper trips;" "determin[ing] an average number of items purchased;" "determin[ing] a current total number of shoppers in the store;" and "determining that the total number of shoppers exceeds a first predetermined threshold." These describe elements of "managing personal behavior or relationships or interactions between people" (determining if extra help is required in store) which is a certain method of organizing human activity which is an

abstraction. Guidance, 84 Fed. Reg. at 52. The patent-ineligible end of the spectrum includes certain methods of organizing human activity. *Id.* (citing *Alice*, 573 U.S. 219–20).

Turning to the second prong of the "directed to" test, claim 1 only generically requires "a sensor system," "a data analyzer computing device," "an alert device" and "one or more cameras." These components are described in the Specification at a high level of generality. *See* Spec. ¶¶ 20–23, 29–30, Figures 1–3. We fail to see how the generic recitations of these most basic computer components and/or of a system so integrates the judicial exception as to "impose[] a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception." Guidance, 84 Fed. Reg. at 53.

Thus, we find that the claims recite the judicial exception of a certain method of organizing human activity that is not integrated into a practical application.

That the claims do not preempt all forms of the abstraction or may be limited to in-store customer behavior, does not make them any less abstract. *See OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015) ("And that the claims do not preempt all price optimization or may be limited to price optimization in the e-commerce setting do not make them any less abstract.").

Turning to the second step of the *Alice* analysis, because we find that the claims are directed to abstract ideas/judicial exceptions, the claims must include an "inventive concept" in order to be patent-eligible, i.e., there must be an element or combination of elements sufficient to ensure that the claim in practice amounts to significantly more than the abstract idea itself. *See*

Alice, 573 U.S. at 217–18 (quoting *Mayo Collaborative Servs.*, 566 U.S. at 72–73).

Concerning this step the Examiner found the following:

> The claims do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional elements or combination of elements in the claims other than the abstract idea *per se* [e.g. *a sensor system, a data analyzer computing device, an alert device, detecting a wireless signal*] amount to no more than amount to no more than mere instructions to implement the idea on a computer, or by recitation of generic computer structure that serves to perform generic computer functions that are well-understood, routine, and conventional activities previously known to the industry [e.g. performing repetitive calculations; receiving, processing, and storing data; electronic recordkeeping; automating mental tasks; receiving or transmitting data over a network].

Non-Final Act. 10 (bracketed material in the original). We agree with the Examiner. "[T]he relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea . . . on a generic computer." *Alice*, 573 U.S. at 225. They do not.

Taking the claim elements separately, the function performed by the computer at each step of the process is purely conventional. Using a computer to detect, determine, calculate, compute, and apply decision criteria to data to generate a result, amounts to electronic data query and transmit same, which are some of the most basic functions of a computer. All of these computer functions are well-understood, routine, conventional activities previously known to the industry. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016); *see also In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) ("Absent a possible narrower construction of the terms 'processing,'

'receiving,' and 'storing,' . . . those functions can be achieved by any general purpose computer without special programming"). In short, each step does no more than require a generic computer to perform generic computer functions.

Considered as an ordered combination, the computer components of Appellant's claims add nothing that is not already present when the steps are considered separately. The sequence of data reception-analysis (detect, determine, calculate, compute, and apply decision criteria to data to generate a result) and storing is equally generic and conventional or otherwise held to be abstract. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014) (sequence of receiving, selecting, offering for exchange, display, allowing access, and receiving payment recited an abstraction); *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1378 (Fed. Cir. 2017) (holding that sequence of data retrieval, analysis, modification, generation, display, and transmission was abstract); *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (holding sequence of processing, routing, controlling, and monitoring was abstract). The ordering of the steps is, therefore, ordinary and conventional.

Thus, the claims at issue amount to nothing significantly more than instructions to apply the abstract ideas of managing personal behavior, relationships or interactions between people using some unspecified, generic computer. Under our precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice*, 573 U.S. at 225–26.

We have reviewed all the arguments Appellant has submitted concerning the patent eligibility of the claims before us that stand rejected

under 35 U.S.C. § 101. (App. Br. 12–27; Reply Br. 2–12.[3]) We find that our analysis above substantially covers the substance of all the arguments, which have been made. But, for purposes of completeness, we will address various arguments in order to make individual rebuttals of same.

Appellant lists various claim limitations (Appeal Br. 14–15, 18–19) as examples of claimed improvements without providing evidence that they are improvements in the computer as contrasted with managing personal behavior or relationships or interactions between people. Although machine-based entities are by definition in some sense technological, their use has become so notoriously settled that merely invoking them is no more than abstract conceptual advice to use well known technology for its intended purpose. *See In re TLI Commc'ns LLC Pat. Litig.*, 823 F.3d 607, 612–13 (Fed. Cir. 2016) (Using a generic telephone for its intended purpose was a well-established "basic concept" sufficient to fall under *Alice* step 1.).

Although we agree with Appellant that the claims must be read, as a whole (Reply Br. 10–11), we nevertheless find, on balance, that claim 1 is directed to a certain method of organizing human activity for the reasons specified above with respect to our "directed to" findings. As found *supra*, claim 1 only includes the following generically recited device limitations:

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[3] Arguments which Appellant could have made but chose not to make in the Appeal Brief have not been considered in the Reply Brief and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2004). *See also*, 37 C.F.R. § 41.39(a)(1). The claim comparison chart presented in the Reply Brief on pages 3–7 could have been presented in the Appeal Brief because both cases used in the comparison, *Electric Power Gro*up and *FairWarning IP,* were cited and relied on by the Examiner in the Non–final Action at pages 4 and 5 respectively. Notwithstanding, nothing in these cases changes our findings at prong 2 of the "directed to test."

"a sensor system," "a data analyzer computing device," 'an alert device" and "one or more cameras." What remains in the claim after disregarding these device limitations, are abstractions, i.e., determin[ing] a trip length for each shopper;" determin[ing] a total number of shopper trips;" "determin[ing] an average number of items purchased;" "determin[ing] a current total number of shoppers in the store;" and "determining that the total number of shoppers exceeds a first predetermined threshold."

The question is whether the claims as a whole "focus on a specific means or method that improves the relevant technology" or are "directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery." *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016). Here we agree with the Examiner that the claims are directed to the human behavior result of determining "if extra help is required in [a] store." (Non-Final Act. 9.)

We also disagree with Appellant that under the holding in *Enfish*, our decision would be different. (Appeal Br. 14; *Enfish*, 822 F.3d 1327). We are unpersuaded by the Appellant's argument that its claims are directed to an improvement in computer technology like that of claim 17 in *Enfish* and, therefore, are patent-eligible. In *Enfish*, the invention at issue was directed at a wholly new type of logical model for a computer database: a self-referential table that allowed the computer to store many different types of data in a single table and index that data by column and row information. *Enfish*, 822 F.3d at 1330–32. In finding the claims are "not directed to an abstract idea," but "to a specific improvement to the way computers operate," the Federal Circuit noted that "the claims are not simply directed to *any* form of storing tabular data, but instead are specifically directed to a

self-referential table for a computer database." *Id.* at 1336–37. We find nothing in the claims before us which arises to this level of technical improvement/proficiency in the claimed "a sensor system," "a data analyzer computing device," "an alert device" and "one or more cameras." Instead, we find the claims are focused on "if extra help is required in [a] store."

Appellant further argues:

> In the claimed system, a calibration factor is used to determine a total number of shoppers in a store from a number of detected wireless signals, each of which is associated with a shopper. By applying a determined average trip length and a determined average number of items purchased in a transaction to a current total number of shoppers in the store, the system can determine a number of items to be purchased by the current total number of shoppers.

(Appeal Br. 16.) Appellant also argues, "it is not an essential step of the alleged abstract idea at issue in this Appeal to generate and apply a calibration factor to determine a total number of shopper trips . . . ." (*Id.* at 18–19.) We are unpersuaded by Appellant's arguments because the calibration factor is among those items identified above as part of the abstraction. (See Guidance, Fed. Reg. 84 at 52). Even though the abstraction might be novel, it still is patent ineligible. "[A] claim for a *new* abstract idea is still an abstract idea." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (citing *May*o, 566 U.S. at 90).

We also affirm the rejection of dependent claims 2, 3, 5, 7–9, 11, 12, 14, and 16–18 under 35 U.S.C. § 101 because Appellant maintains the eligibility of these claims "for at least all of the reasons discussed with reference to claim 1" (*see, e.g.*, Appeal Br. 20), and because Appellant does not challenge such with any reasonable specificity (*see In re Nielson*, 816 F.2d 1567, 1572 (Fed. Cir. 1987)). A statement which merely points out

what a claim recites will not be considered an argument for separate patentability of the claim. *See* 37 C.F.R. § 41.37 (c)(1)(vii) (2004).

For the reasons identified above, we determine there are no deficiencies in the Examiner's prima facie case of patent ineligibility of the rejected claims. Therefore, we will sustain the Examiner's § 101 rejection of claims 1–3, 5, 7–12, 14, and 16–18.

CONCLUSIONS OF LAW

We conclude the Examiner did not err in rejecting claims 1–3, 5, 7–12, 14, and 16–18 under 35 U.S.C. § 101.

DECISION

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