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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PENGLIN HUANG AND WEIDONG WAYNE JIANG

Appeal 2018-000542
Application 14/200,667
Technology Center 3600

Before MURRIEL E. CRAWFORD, KENNETH G. SCHOPFER, and TARA L. HUTCHINGS, *Administrative Patent Judges*.

CRAWFORD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134(a) of the Examiner's final rejection of claims 8, 9, and 11–20, which constitute all the claims pending in this application. Claims 1–7 and 10 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We AFFIRM.

THE INVENTION

Appellants' invention relates to predicting non-catastrophe and catastrophe losses and more specifically modeling losses of perils connected with non-catastrophe and/or catastrophe events. (Spec. 1, Title).

Claim 8 is representative of the subject matter on appeal.

8. A method comprising:

receiving non-catastrophe input variables selected from a group consisting essentially of exposure relativity, prior frequency and loss ratios, prior cancellation notices, building construction year, house vacancy ratio, establishment sizes, commercial insurance score, median year built, building construction description code, population density, and tenure of a business;

calculating a non-catastrophe risk-adjusted loss cost using the non-catastrophe input variables;

receiving catastrophe input variables selected from a group consisting essentially of building construction year, building construction description code, building number of stories, building occupancy, and distance to coast;

calculating winter storm average annual loss, severe thunderstorm annual loss, hurricane average annual loss, and hurricane conditional tail expectation using the catastrophe input variables;

combining by calculating a non-catastrophe and catastrophe risk-adjusted loss cost as a sum of a first summand which is the non-catastrophe risk adjusted loss, a second summand which is the winter storm average annual loss, a third summand which is the severe thunderstorm average annual loss, a fourth summand which is the hurricane average annual loss, and a fifth summand which is the hurricane conditional tail expectation; and

electronically pricing an insurance policy based on the calculations.

THE REJECTION

Claims 8, 9 and 11–20 are rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.

Claims 8, 9, and 11–20 are rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement.

ANALYSIS

35 U.S.C. § 101 REJECTION

We will sustain the rejection of claim 8, 9, and 11–20 under 35 U.S.C. § 101.

> The Supreme Court
>
> > set forth a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts. First, . . . determine whether the claims at issue are directed to one of those patent-ineligible concepts. . . . If so, . . . then ask, "[w]hat else is there in the claims before us?" . . . To answer that question, . . . 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. . . . [The Court] described step two of this analysis 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."

Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 573 U.S. 208, 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc*., 566 U.S. 66, 72–73 (2012)) (citations omitted).

To perform this test, we must first determine whether the claims at issue are directed to a patent-ineligible concept. 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.'" *See Enfish, LLC v.*

Microsoft Corp., 822 F.3d 1327, 1335 (Fed. Cir. 2016) (quoting *Internet Patents Corp.*, 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 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 judicial exception is integrated into a practical application. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 FR 50, 50–57 (Jan. 7, 2019) ("*Guidance*").

The Examiner determines that the claims are directed to calculating insurance related data. (Final Act. 5)

The Specification states that property insurance provides protection against most risks to property, such as fire, theft, and weather damage. This includes specific forms of insurance such as fire insurance, flood insurance, earthquake insurance, home insurance, or boiler insurance. (Spec. 1). The invention comprises a non-catastrophe prediction calculator, the hardware structure of which is suitable for analyzing non-catastrophe input variables to predict non-catastrophe losses connected with commercial property in a county in a state. The system further comprises a catastrophe prediction calculator, the hardware structure of which is capable of analyzing catastrophe input variables to predict catastrophe losses, i.e., winter storm losses, severe thunderstorm losses, and hurricane losses. (Spec. 2, ll. 20–23). The invention combines non-catastrophe losses with catastrophe losses. (Spec. 14, ll. 20–22). As such, the Specification supports the Examiner's

determination that the invention is related to calculating insurance related data.

The recitations in claim 8 also support this determination by reciting "receiving non-catastrophe input variables," "calculating a non-catastrophe risk-adjusted loss cost," "receiving catastrophe input variables," "calculating winter storm average annual loss," "combining by calculating a non-catastrophe and catastrophe risk-adjusted loss." These recitations relate to calculating insurance related data.

We thus agree with the Examiner's findings that claim 8 is directed to calculating insurance related data and more specifically calculating insurance related data including combining non-catastrophe and catastrophe loss cost. As claim 8 recites "*calculating* a non-catastrophe risk-adjusted loss cost," "*calculating* winter storm average annual loss,' "combining by *calculating* a non-catastrophe and catastrophe loss cost" and "electronically *pricing* an insurance policy," claim 8 recites steps related to a mathematical concept, which is a judicial exception. *Guidance*, 84 Fed. Reg. at 52

In addition, as the steps of claim 8 recite steps related to insurance, claim 8 recites the judicial exception of certain methods of organizing human activity or a fundamental economic practice. *Guidance* 84 Fed. Reg. at 52.

Also, we find the steps of claim 8 constitute "analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, which are essentially mental processes within the abstract-idea category." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016); s*ee also buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350,

1355 (Fed. Cir. 2014) (claims directed to certain arrangements involving contractual relations are directed to abstract ideas).

Thus, we find that claim 8 recites a mathematical concept, certain methods of organizing human activity, i.e., a fundamental economic practice, and a mental process, all of which are judicial exceptions. *Guidance*, 84 Fed. Reg. at 52.

Turning to the second prong of the "directed to" test, the Examiner finds that claim 8 recites electronically pricing an insurance policy and a computer readable medium comprising instructions and that these limitations reflect the use of generic components to perform well-understood, routine, and conventional operations in the field of insurance. In regard to the recitation of receiving input variables, the Examiner finds that the mere insignificant pre-solution activity, e.g., data gathering, fails to transform the claims into patent-eligible subject matter. Considered as a whole, the claims are nothing more than an implementation of the calculation of various insurance costs. (Final Act. 5).

In addition to the judicial exceptions discussed above, claim 8 requires electronically pricing. The recitation of the words "electronically pricing" does not 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.. We find no indication in the Specification, nor do Appellants direct us to any indication, that the operations recited in independent claim 1 invoke any inventive programming, require any specialized computer hardware or other inventive computer components, i.e., a particular machine, or that the claimed invention is implemented using other than generic computer components to

perform generic computer functions. *See DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014). In fact, claim 8 does not even recite a computer.

We also find no indication in the Specification that the claimed invention effects a transformation or reduction of a particular article to a different state or thing. Nor do we find anything of record, short of attorney argument, that attributes any improvement in computer technology and/or functionality to the claimed invention or that otherwise indicates that the claimed invention integrates the abstract idea into a "practical application," as that phrase is used in the revised Guidance. *See Guidance*, 84 Fed. Reg. at 55.

In view of the foregoing, we agree with the Examiner that claim 8 recites a judicial exception that is not integrated into a practical application and as such, claim 8 is directed to an abstract idea.

Turning to the second step of the *Alice* analysis, because we find that the claims are directed to abstract ideas, the claims must include an "inventive concept" in order to be patent-eligible, i.e., there must be an element or combination of elements that is 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*, 566 U.S. at 72–73).

Considered as an ordered combination, the recitation of "electronically pricing" adds nothing that is not already present when the steps are considered separately. This recitation is broad enough to include a generic computer or even an off the shelf electronic calculator. The sequence of data reception-analysis-access/display is equally generic and conventional or has otherwise been 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 claims do not, for example, purport to improve the functioning of any technology or technical field. Appellants have not directed our attention to a disclosure in the Specification spelling out different non-generic equipment and parameters that might be used to practice the steps of claim 8. Thus, claim 8 amounts to nothing significantly more than instructions to apply the abstract ideas using some unspecified, generic electronic calculator. Under our precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice*, 573 U.S. at 226.

We have reviewed all the arguments (Appeal Br. 9–85; Reply Br. 9–23) Appellants have submitted concerning the patent eligibility of the claims before us that stand rejected under 35 U.S.C. § 101. 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.

We are not persuaded of error on the part of the Examiner by Appellants' argument that the Examiner hides all of these claim limitations away to front a façade of "receiving input variables" and fails to include the specific recitations of claim 8. In this regard, Appellants characterize what

the claimed subject matter is directed to at a different level of abstraction than what the Examiner has characterized it to be directed to. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240–41 (Fed. Cir. 2016). An abstract idea can generally be described at different levels of abstraction. As the Examiner has done, the claimed abstract idea could be described as calculating insurance pricing. It could be described in other ways, including, the specific recitations in claim 8 such as Appellants have done. But its abstract nature remains the same. In this regard, the steps of "receiving non-catastrophe input variables" and "calculating a non-catastrophe input variables," "receiving catastrophe input variables," "calculating winter storm average annual loss," and "combining by calculating a non-catastrophe and catastrophe risk-adjusted loss" are specific steps that are performed in calculating insurance related data, and therefore, the Examiner's description of the abstract idea encompasses Appellants' description of what the claims are directed to. Therefore, while the invention of claim 8 can be characterized using the specific recitations in the claim, which is far more specific than the Examiner's description or our description of the recitations in claim 8, all describe an abstract idea.

We are not persuaded of error on the part of the Examiner by Appellants' argument that the claims are not directed to a mathematical formula. (Brief 16). We agree with the Examiner's response to this argument. (*See* Ans. 11–12). In any case, as we have determined that claim 8 recites the judicial exceptions of a fundamental economic practice and a mental process, the claims recite a judicial exception even if the Appellants are correct that the claims do not recite a mathematical concept.

We are not persuaded of error on the part of the Examiner by Appellants' argument that the claims improve an existing technological process. (Appeal Br. 24). In support of this argument, Appellants explain that the improvement over existing technical processes recited in the claims is the innovation of the calculator in which the non-catastrophe peril predictions are combined with the catastrophe peril predictions to reveal greater knowledge about perils through data science. However, these aspects of claim 8 are encompassed in the abstract idea of calculating insurance data. Appellants' argument, therefore, relies on the ineligible concept itself to establish that the claims recite an inventive concept. But "[i]t 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." *BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018). Moreover, no matter how much of an advance in the insurance field the claims recite, the advance lies entirely in the realm of abstract ideas, with no plausibly alleged innovation in the non-abstract application realm." *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018); *see also id.* at 1168.

We are also not persuaded of error on the part of the Examiner by Appellants' argument that other Examiners examining other patent applications have found similar subject matter patent-eligible as those other patent applications are to different subject matter and different claims and as such are not relevant to this application. (Appeal Br. 33).

We are not persuaded of error on the part of the Examiner by Appellants' argument that the Examiner has failed to explain why particular

requirements of the claims are either data gathering or insignificant pre-solution activity. (Appeal Br. 37). In this regard, Appellants argue that the claims do not recite generically "receiving input variables" but rather receiving the input of particular variables recited such as "non-catastrophe input variables."

First, the Examiner determined that the steps of receiving input variables was a recitation of mere insignificant pre-solution activity, e.g., data gathering. These limitations do not reflect a patent-eligible application of the patent-ineligible abstract idea. To the contrary, these limitations are recited at a high-level of generality and comprise routine techniques and extra solution activity that does not impart a sufficient inventive concept to claim 1. *See Mayo*, 566 U.S. at 79 ("well-understood, routine, conventional activity previously engaged in by scientists who work in the field . . . is normally not sufficient to transform an unpatentable law of nature into a patent-eligible application of such law."); *see also Parker v. Flook*, 437 U.S. 584, 590 (1978) ("The notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process exalts form over substance."). Appellants have not persuasively shown otherwise.

In addition, we agree with the Examiner that it makes no difference at all what the particular input variables are. Appellants may choose whatever input variables they desire from the universe of input variables. (Final Act. 3). The specific type of data, i.e., the precise data recited in claim 8, is nonetheless data that is received in a routine, conventional and well-understood manner.

We are not persuaded of error on the part of the Examiner by

Appellants' argument that the inventive concept is recited in the specific recitations of claim 8. When performing this step of the analysis, it is the recitations in addition to the abstract idea that are examined to determine whether they amount to significantly more than the abstract idea. The recitations that Appellants argue are significantly more than the abstract idea, such as "receiving non-catastrophe input variables selected from a group consisting essentially of exposure relativity," relate to a recitation of the abstract idea of calculating insurance related data including combining by calculating non-catastrophe and catastrophe cost.

We are not persuaded of error on the part of the Examiner by Appellants' argument that the Examiner has not provided evidence that the claims are not directed to significantly more than the abstract idea of calculating insurance related data including combining by calculating non-catastrophe and catastrophe cost. The only recitation in claim 8 that is not included in the abstract idea is the recitation that the pricing is done electronically. Calculating an end result from various variables is a routine computer function that may be performed by any computer system. Courts have regarded basic computer functions, such as the additional elements that the Examiner identifies, as insufficient to establish significantly more than an abstract idea, per Step 2B. *See Interval Licensing, LLC v. AOL, Inc.*, 896 F.3d 1335, 1345 (Fed. Cir. 2018) (the claim elements "merely recite routine and conventional steps in carrying out the well-established practice of accessing data from an external source and displaying that data on a user's device" that "offer 'nothing more than generic, pre-existing computer functionality"') (citation omitted); *Versata Dev. Group, Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1334, (Fed. Cir. 2015) (arranging, storing, and

retrieving information "are well-understood, routine, conventional activities previously known to the industry"); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1370 (Fed. Cir. 2015) ("[T]he interactive interface limitation is a generic computer element"); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) (relying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claims patent-eligible); *Bancorp Servs., L.L.C. v. Sun Life Assurance Co.*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) ("The computer required by some of Bancorp's claims is employed only for its most basic function, the performance of repetitive calculations, and as such does not impose meaningful limits on the scope of those claims."); *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."): *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1378 (Fed. Cir. 2017) (holding that considering claims reciting data retrieval, analysis, modification, generation, display, and transmission as an "'ordered combination"' reveals that they "amount to 'nothing significantly more' than an instruction to apply [an] abstract idea" using generic computer technology) (internal citation omitted).

In view of the foregoing, we will sustain the rejection as it is directed to claim 8. We will also sustain the rejection as it is directed to claims 9 and 11–19, which depend from claim 8, for the same reasons as each of these claims may limit the scope of the abstract idea to which independent claim 8 is directed but their character remains unchanged, especially given that these

dependent claims provide no insight to improvements in computer functionality beyond what one would expect from using a generic computer as a tool in performing the scheme as claimed. For example, claim 9, recites how the non-catastrophe risk adjusted loss is calculated, and claim 11 recites how the winter storm average annual loss, severe thunderstorm average annual loss, and the hurricane average annual loss are calculated. The other dependent claims include other similar recitations. Therefore, we determine that the limitations of the dependent claims do not meaningfully limit the claims beyond the claimed abstract idea.

We will also sustain the rejection as it is directed to claim 20 for the same reasons discussed in regard to the rejection of claim 8 because Appellants' arguments regarding the patent-eligibility of this claim mirrors Appellants' arguments which we found unpersuasive in regard to the eligibility of claim 8.

35 U.S.C. §112 REJECTION

We will sustain the Examiner's rejection of claims 8, 9, and 11–20 because we agree with the Examiner that the Specification fails to include the algorithms or formulas used to make the various calculations recited in the claims. The Examiner finds that the Specification does not disclose how the two calculation steps are performed. (Final Act. 4). As such, we do not agree with Appellants that the Examiner failed to identify claim limitations not disclosed in the Specification. (Brief 55). The issue here is clear, i.e., whether the Specification discloses the two calculations steps so as to comply with the requirements of 35 U.S.C. §112(a), first paragraph.

The disclosure is devoid of how the various calculations are performed, pursuant to the claim limitations, such as "calculating a non-catastrophe risk-adjusted loss" or "calculating winter storm average annual loss." Particularly, no algorithm or algorithm description is provided with respect to such calculations.

We agree with the Examiner's response to this argument in the Answer at pages 16–20 and adopt same as our own. Specifically, we note that Appellants direct our attention to Figures 2B–2G and pages 5–8 of the Specification as support for the two calculating steps. (Appeal Br. 55). Figures 2B–2G depict various steps of the invention as a flowchart. Figure 2G in step 2094 states that the method calculates a non-catastrophe risk adjusted loss cost, which is a product of multiplicands. In steps 2088 and 2090, the flowchart indicates that the method calculates a policy level non-catastrophe loss ratio relativity and calculates a lost costs and that each of these numbers is a multiplicand in calculating a non-catastrophe risk. However, there is no depiction in these figures of how the policy level non-catastrophe loss ratio relativity and the loss costs are calculated. Pages 5–8 of the Specification discuss these flow charts but do not provide any further information of how the various multiplicands are calculated. Thus, we do not find any indication that Appellants possessed the means for achieving the calculating steps. *See Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671, 683 (Fed. Cir. 2015) ("The more telling question [for written description analysis] is whether the specification shows possession by the inventor of how accessing disparate databases is achieved."); *see also In re Wilder*, 736 F.2d 1516, 1521 (Fed. Cir. 1984) (Affirming a rejection for lack of written description because the specification does "little more than

outlining goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate."); *Ex parte Smith*, Appeal 2012-007631, slip op. at 21 (PTAB Mar. 14, 2013) (informative) ("Beyond general statements of the function to be performed, which, at most, may render the claimed function obvious, the inventor has not shown how the recited opinion timeline is generated," which "is not sufficient because a description that merely renders the invention obvious does not satisfy the written description requirement.").

In view of the foregoing, we will sustain this rejection as is directed to claim 8 and claims 9, 11–19 dependent therefrom. We will also sustain this rejection of claim 20 for the same reason.

CONCLUSIONS OF LAW

We conclude the Examiner did not err in rejecting claims 8, 9, and 11–20 under 35 U.S.C. § 101.

We conclude the Examiner did not err in rejecting claims 8, 9, and 11–20 under 35 U.S.C. §112(a).

DECISION

The decision of the Examiner to reject claims 8, 9, and 11–20is 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