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Paper 49
Date: April 11, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CRUSOE ENERGY SYSTEMS, LLC,
Petitioner,

v.

UPSTREAM DATA INC.,
Patent Owner.

PGR2023-00039
Patent 11,574,372 B2

Before JACQUELINE WRIGHT BONILLA, *Deputy Chief Administrative Patent Judge*, and MICHAEL P. TIERNEY and MICHAEL W. KIM, *Vice Chief Administrative Patent Judges*.

KIM, *Vice Chief Administrative Patent Judge*.

DECISION
Delegated Director Review of Final Written Decision
37 C.F.R. § 42.75

I. INTRODUCTION

The Acting Director initiated a *sua sponte* Director Review of the Final Written Decision in this proceeding. Paper 46, 2 (citing 37 C.F.R. § 42.75(b)). The Acting Director then delegated to a Delegated Rehearing Panel ("DRP") to determine "whether the Board misapprehended or overlooked any material issue of fact or law in its determination that claims 1 and 24 are unpatentable under 35 U.S.C. § 101." Paper 47, 2.

After careful review of the record, we determine that the original Board panel misapprehended the nature of claims 1 and 24 in characterizing the subject matter of those claims as being directed to an abstract idea. Accordingly, we vacate that portion of the Final Written Decision and, instead, determine that Petitioner has not met its burden of showing, by a preponderance of the evidence, that claims 1 and 24 are patent in-eligible under § 101.

II. BACKGROUND

A. Procedural History

On July 20, 2023, Crusoe Energy Systems, LLC ("Petitioner") filed a Petition requesting post-grant review of claims 1–4, 7–12, 15–30, 34–37, and 40 (the "challenged claims") of U.S. Patent No. 11,574,372 B2 (Ex. 1001, "the '372 patent"). Paper 2, 1 ("Pet."). In addition to several obviousness challenges, the Petition included a section challenging claims 1–4, 7–12, 15–30, 34–37, and 40 under 35 U.S.C. § 101. Pet. 112–118. In that section, Petitioner stated that "[t]he '372 Patent centers around the abstract idea of using natural gas to power a blockchain mine." Pet. 114 (citing Ex. 1001, Abstract; Ex. 1003 ¶¶ 522–524).

Upstream Data Inc. ("Patent Owner") filed a Preliminary Response. Paper 6 ("Prelim. Resp."). The Preliminary Response responded to Petitioner's § 101 challenge by, among other things, disputing that "[t]he claims [could] be distilled down simply to 'using natural gas to power a blockchain mine' as Petitioner alleges." *Id*. at 75 (citing Pet. 113).

On January 22, 2024, the original Board panel issued a Decision Granting Institution of Post-Grant Review. Paper 14 ("DI"). In that Decision, although the original Board panel determined that the Petitioner demonstrated at that stage that it was more likely than not that it would prevail on its assertions that the challenged claims would have been obvious (DI 19–58), and, thus, instituted trial, the original Board panel reserved its analysis of the § 101 challenge until a full record was developed during trial. *See id*. at 58 ("[T]he question of whether the subject matter of claims 1–4, 7–12, 15–30, 34–37, and 40 is ineligible is an issue best resolved on a full record."). The Examiner's position in favor of the patent eligibility of the claims was additionally noted:

> At this stage of the proceeding, we note that during prosecution the Examiner expressly stated that "[w]ith regard to any rejections under 35 USC § 101 based upon the *Alice Corporation Pty. Ltd. v. CLS Bank*[1] guidelines, the Examiner finds that the claimed invention amounts to significantly more than a judicial exception or an abstract idea." Ex. 1002, 42. The Examiner also stated that "the claimed invention demonstrates a practical application" because the '372 patent's Specification "clearly teaches and describes blockchain mining at hydrocarbon facility." *Id*. Therefore, because we institute post-grant review all other challenges, we also institute post-grant review as to

[1] *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014).

> Petitioner's challenge on Ground 6. *See SAS Inst.* [*Inc. v. Iancu*], 138 S. Ct. [1348,]1359–60 [(2018)].

Id. (first alteration in original).

After institution, Patent Owner filed a Response in which its position on the § 101 challenge was essentially the same as that presented in its Preliminary Response. Paper 20. Petitioner filed a Reply in which it repeated, among other things, that "[t]he '372 Patent centers around the abstract idea of using natural gas to power a blockchain mine, and the claims recite nothing more than 'generic processes and machinery.'" Paper 25 at 26 ("Reply"). Patent Owner filed a Sur-reply, in which it argued again that "the '372 Patent is not directed to an abstract idea." Paper 33, 25. A hearing was conducted on October 25, 2024. Paper 44 ("Tr."). The parties' § 101 contentions were not a major focus of oral argument.

A Final Written Decision issued on January 21, 2025. Paper 45 ("Final Dec."). On the obviousness challenges, the Final Written Decision indicates that Petitioner had *not* met its burden of showing, by a preponderance of the evidence, that the challenged claims were unpatentable. *Id*. at 12–35. On the § 101 challenge, however, the Final Written Decision indicates that Petitioner *did show* by a preponderance of the evidence that independent claims 1 and 24 (albeit not dependent claims

2–4, 7–12, 15–23, 25–30, 34–37, and 40)[2] were unpatentable under § 101. *Id*. at 54. Specifically, the Final Written Decision states its "agree[ment] with Petitioner that claims 1 and 24 result in a system and method that is broadly directed to the abstract idea of 'using natural gas to power a blockchain mine.'" *Id*. at 42 (citing Pet. 114). The Final Written Decision also states its agreement with Petitioner that the additional limitations in claims 1 and 24, particularly the "generator connected to the source of gas," "blockchain mining devices," and "network interface," "do not integrate the recited judicial exception into a practical application" and that claims 1 and 24 are "'directed to a result or effect that itself is the abstract idea and merely invoke[s] generic processes and machinery' rather than 'a specific means or method that improves the relevant technology.'" *Id*. at 45 (citing *Yu v. Apple Inc*., 1 F.4th 1040, 1043 (Fed. Cir. 2021) (quoting *Smart Sys. Innovations, LLC v. Chi. Transit Auth.*, 873 F.3d 1364, 1371 (Fed. Cir. 2017)); *Rady v. Boston Consulting Grp*., No. 2022-2218, 2024 WL 1298742, at *3 (Fed. Cir. Mar. 27, 2024) ("The fact that Rady's patent describes the use of specialized hardware does not, standing alone, mean that his claims are not directed to an abstract idea.")) (alteration in original).

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[2] The Decision states that Petitioner failed to articulate adequately and with particularity why dependent claims 2–4, 7–12, 15–23, 25–30, 34–37, and 40 are patent ineligible under § 101.

> In this regard, we agree with Patent Owner that the Petition "is plainly insufficient and fails to meet Petitioner's burden to perform an analysis as to each claim." PO Resp. 83. Other than its conclusory analysis, Petitioner does little to support its conclusion that "[c]laim 1 of the '372 [p]atent is representative of all the patent claims." Pet. 118 (citing Ex. 1003 ¶¶ 527–530).

Final Dec. 56–57 (alterations in original).

B. Principles of Law and MPEP

35 U.S.C. § 101 provides that "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor."

Section 101, however, "contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice*, 573 U.S. at 216 (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)). *Alice* identifies a framework for determining whether claimed subject matter is directed to an abstract idea. *Id*. at 217. According to *Alice*, "[w]e must first determine whether the claims at issue are *directed to* a patent-ineligible concept." *Id*. at at 218 (emphasis added).

> Under *Alice* step one, we consider whether the claims at issue are directed to patent-ineligible subject matter, here, an abstract idea. This "directed to" inquiry does more than "simply ask whether the claims *involve* a patent-ineligible concept." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (emphasis in original). Instead, we must look to the character of the claims as a whole to determine whether they are "directed to" patent-ineligible subject matter. *Id*.

AI Visualize, Inc. v. Nuance Commc'ns, Inc., 97 F.4th 1371, 1378 (Fed. Cir. 2024). If so, the next step is "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*, 573 U.S. at 217–18 (quoting *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 566 U.S. 66, 73 (2012)) (alteration in original).

The MPEP describes the process the Office follows in evaluating whether a claim is drawn to patent-eligible subject matter under § 101.

Consistent with the statute, the process entails, at Step 1, determining whether the claimed subject matter falls within one of the four statutory categories of invention (i.e., process, machine, manufacture, or composition of matter). *See* MPEP § 2106.03.

Consistent with *Alice*'s two-part framework, Step 2 of the process is a two-part test to identify whether claims are directed to a judicial exception, i.e., an abstract idea, law of nature, or natural phenomenon (Step 2A; *see* MPEP § 2106.04), and then to evaluate if additional elements of the claim provide an inventive concept; that is, whether they provide "significantly more" than the recited judicial exception (Step 2B; *see* MPEP § 2106.05).

Step 2A is a two-pronged inquiry. "Prong One asks does the claim recite an abstract idea, law of nature, or natural phenomenon?" MPEP § 2106.04.II.A.1. "Prong Two asks does the claim recite additional elements that integrate the judicial exception into a practical application?" MPEP § 2106.04.II.A.2. Only after a determination is made that the claimed subject matter is directed to a judicial exception under the Step 2A inquiry do we proceed to the Prong Two inquiry and then to Step 2B. "The Step 2A Prong One analysis articulated in MPEP § 2106.04 . . . require[es] a claim to recite (i.e., set forth or describe) an abstract idea in Prong One before proceeding to the Prong Two inquiry." MPEP § 2106.04(a)(1). If the claim as a whole is not directed to a judicial exception, the eligibility analysis is concluded. MPEP § 2106.04.II.

C. Claims 1 and 24 of the '372 Patent

Independent claim 1 of the '372 patent is reproduced below.

1. A system comprising:

a source of combustible gas produced from a facility selected from a group consisting of a hydrocarbon production, storage, or processing facility;

a generator connected to the source of combustible gas to receive a continuous flow of combustible gas to power the generator; and

blockchain mining devices connected to the generator; in which:

the blockchain mining devices each have a mining processor and are connected to a network interface;

the network interface is connected to receive and transmit data through the internet to a network that stores or has access to a blockchain database;

the mining processors are connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database;

the network is a peer-to-peer network;

the blockchain database is a distributed database stored on plural nodes in the peer-to-peer network; and

the blockchain database stores transactional information for a digital currency.

Ex. 1001, 19:52–20:7.

III. ANALYSIS

A. USPTO Step 1

Regarding Step 1, there is no dispute that claim 1 is drawn to a "machine" and claim 24 is drawn to a "process" and, thus, are drawn to statutory subject matter for which a patent may be obtained.

B. USPTO Step 2A – Prong One

1. Claim Analysis[3]

We consider the claim as a whole[4], as one of ordinary skill in the art would have interpreted it in light of the specification[5] at the time of filing.

Independent claim 1 describes a system comprising seven elements: (1) a source, (2) a generator, (3) blockchain mining devices, (4) a mining processor, (5) a network interface, (6) a peer-to-peer network, and (7) a blockchain database.[6]

The source, which is "combustible gas produced from a facility selected from a group consisting of a hydrocarbon production, storage, or processing facility," is connected to the generator in order to power it. The

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[3] "[T]he important inquiry for a § 101 analysis is to look to the claim." *Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013). "In *Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can.*, 687 F.3d 1266, 1273 (Fed. Cir. 2012), the court observed that 'claim construction is not an inviolable prerequisite to a validity determination under § 101.' However, the threshold of § 101 must be crossed; an event often dependent on the scope and meaning of the claims." *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1347–48 (Fed. Cir. 2015).

[4] "In determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be considered as a whole." *Diamond v. Diehr*, 450 U.S. 175, 188 (1981).

[5] "First, it is always important to look at the actual language of the claims. . . . Second, in considering the roles played by individual limitations, it is important to read the claims 'in light of the specification.'" *Smart Sys. Innovations*, 873 F.3d at 1378 (Linn, J., dissenting in part and concurring in part) (citing, *inter alia*, *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016)).

[6] Independent claim 24 recites substantively identical limitations, and so our analysis of independent claim 1 applies equally to independent claim 24.

blockchain mining devices are connected to the generator. They each have a mining processor and are connected to the network interface. The network interface is connected to a peer-to-peer network that stores or has access to the blockchain database, wherein the blockchain database is a distributed database stored on plural nodes in the peer-to-peer network storing transactional information for a digital currency. The mining processors are adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database.

2. The Abstract Idea[7]

Based on our claim analysis (above), we are unpersuaded that the Petitioner has met its burden of showing, by a preponderance of that evidence, that an abstract idea is recited in independent claim 1. That claim describes seven interconnected elements that together form an integrated system for mining transactions. Petitioner focuses on the first three claim limitations – "a source of combustible gas . . . to power the generator [connected to blockchain mining devices]" – and characterizes that, in abridged form (i.e., "using natural gas to power a blockchain mine"), as an abstract idea. Pet. 114. Petitioner has not identified any language in the first three claim limitations, describing the combustible gas, generator, and blockchain mining devices, individually and in the combination as claimed, that recite an abstract idea.

The Petitioner asserts that since using waste natural gas to generate electricity is known, and there is an economic incentive to "us[e] natural gas to power a blockchain mine" as claimed (via the first three limitations),

[7] *See* MPEP § 2106.04.

claim 1 "centers around" (i.e., is directed to) an abstract idea. Pet. 114; Reply 26. According to Petitioner, claim 1 "recite[s] nothing more than 'generic processes and machinery' to achieve the result of powering a blockchain mine with natural gas," rather than "any 'specific means or method that improves the relevant technology.'" Pet. 114–115 (quoting *Yu*, 1 F.4th at 1043 (quoting *Smart Sys. Innovations*, 873 F.3d at 1371); Reply 26. We disagree.

Claim 1 does not describe a result or effect that itself is an abstract idea. It describes a machine defined by its constituent parts. *Cf. US Synthetic Corp. v. Int'l Trade Comm'n*, 128 F.4th 1272, 1284 (Fed. Cir. 2025) ("In contrast, the claimed PDC is not an abstract result of generic computer functionality, but instead is a physical composition of matter defined by its constituent elements, dimensional information, and inherent material properties. *Cf. SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1168 (Fed. Cir. 2018) (holding claims patent ineligible because 'the focus of the claims is not a physical-realm improvement but an improvement in wholly abstract ideas')").

Petitioner cites *Yu*. Pet. 112–117. That case is inapposite. *Yu* involved claims directed to using multiple photos to produce a result – an enhanced digital image. The representative claim[8] reflected this, reciting "*producing a resultant digital image from said first digital image enhanced with said second digital image*." *Yu*, 1 F.4th at 1042 (emphasis added). The court noted that that claim "results in 'producing a resultant digital image from said first digital image enhanced with said second digital image'" and that

[8] Claim 1 of U.S. 6,611,289.

"Yu d[id] not dispute that, as the district court observed, the idea and practice of using multiple pictures to enhance each other has been known by photographers for over a century." *Id*. at 1043. Accordingly, the court concluded that the claim is "'directed to a result or effect that itself is the abstract idea and merely invoke[s] generic processes and machinery' rather than 'a specific means or method that improves the relevant technology.'" *Id*. (quoting *Smart Sys. Innovations*, 873 F.3d at 1371) (alteration in original).

We must focus on the language of the claims themselves, considered in light of the specification. *See, e.g.*, *TecSec, Inc. v. Adobe Inc.*, 978 F.3d 1278, 1292 (Fed. Cir. 2020). When we do so, it is apparent that there is nothing similar to *Yu* recited in claim 1 before us.

The '372 patent's specification does not alter that view. The '372 patent explains, *inter alia*, that "excess natural gas is often wasted at remote oil and gas facilities by either venting the gas to the atmosphere or burning it via flaring," "[t]he oil well operator may attempt to capture the gas and consume it," and the "cheaper the electricity the more reward the miner will receive relative to competition." Final Dec. 41–42 (quoting Ex. 1001, 1:11–13, 6:55–58, 13:20–21) (alteration in original). These disclosures ascribe certain advantages to using excess natural gas, such as reducing waste. Although "using natural gas to power a blockchain mine" may have such advantages, as discussed in the specification, this is insufficient to show that what is recited in claim 1 "centers around" (i.e., is *directed to*) "using natural gas to power a blockchain mine," as Petitioner contends. The words of the claim itself indicate otherwise.

As Petitioner has not met its burden of showing, by a preponderance of the evidence, that independent claim 1 recites an abstract idea under Step 2A, Prong One, we do not reach Step 2A, Prong Two or Step 2B. MPEP § 2106.04.II.A.1. The same analysis applies to independent claim 24.

V. CONCLUSION

After careful review of the record, we determine that the original Board panel misapprehended the nature of claims 1 and 24 in characterizing them as being directed to an abstract idea. Accordingly, we vacate that portion of the Final Written Decision and, instead, determine that Petitioner has not met its burden of showing, by a preponderance of the evidence, that claims 1 and 24 are patent ineligible under 35 U.S.C. § 101.

VI. ORDER

In consideration of the foregoing, it is hereby

ORDERED that the portion of the Final Written Decision (Paper 45) addressing the patentability of claims 1 and 24 under 35 U.S.C. § 101 is vacated; and

FURTHER ORDERED that Petitioner has not proven, by a preponderance of the evidence, that claims 1 and 24 are unpatentable under 35 U.S.C. § 101.

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