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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NIR BARAK and EITAN HADAR

Appeal 2017-004940
Application 13/406,036¹
Technology Center 3600

Before JASON V. MORGAN, ERIC B. CHEN, and SHARON FENICK,
Administrative Patent Judges.

MORGAN, *Administrative Patent Judge.*

DECISION ON APPEAL
STATEMENT OF THE CASE

Introduction

This is an appeal under 35 U.S.C. § 134(a) from the Examiner’s Final Rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

Invention

Appellants disclose a method that includes monitoring a usage of a leased image provided by a cloud vendor, by a client computing device. A threshold period

¹ Appellants identify CA, Inc., as the real party in interest. Appeal Br. 2 (herein, citations to “Appeal Br.” refer to the Appeal Brief filed April 19, 2016).

of time associated with the usage is determined. Whether an access to the leased image should be terminated based upon an expiry of the threshold period of time or based upon a request received from the client computing device is determined.

Abstract. “These images are essentially virtual machines that provide various applications or services to the customer.” Spec. ¶ 4.

Exemplary Claims (key limitations emphasized)

1. A method to secure a virtual machine operating in a cloud computing environment provided by a cloud vendor, the method comprising:

monitoring, by a computer system, *a usage* of the virtual machine operating in the cloud computing environment, *by a client computing device*;

determining, by the computer system, *whether an access* to the virtual machine *should be terminated based upon an expiry of a threshold period of time associated with the usage or based upon a request received from the client computing device*;

locking the virtual machine, by the computer system, based upon the determining whether the access to the virtual machine should be terminated;

monitoring, by the computer system, an access request received for the locked virtual machine; and

enabling, by the computer system, access to the locked virtual machine when it is determined that the access request is valid.

5. The method of claim 1 further comprising:

billing the client computing device for a total usage time defined as a time period for which *the virtual machine is not dormant and unlocked*.

9. The method of claim 1 further comprising:

generating a status report comprising information related to an active virtual machine associated with the client computing device, a locked virtual machine associated with the client

computing device, and for each one of the active and locked virtual machines, a period of time for which the active virtual machine and the locked virtual machine have been used by the client computing device, and whether or not another client computing device attempted to activate the locked virtual machine.

Rejections

The Examiner rejects claims 1–20 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 4–5.

The Examiner rejects claims 5, 9, 14, and 18 under 35 U.S.C. § 112, second paragraph, as being indefinite. Final Act. 5–6.

The Examiner rejects claims 1–3, 5, 6, 8, 10–12, 14, 15, 17, and 19 under 35 U.S.C. § 103(a) as being unpatentable over Huang et al. (US 2012/0060031 A1; published Mar. 8, 2012) (“Huang”), Dhoolia et al. (US 2013/0124353 A1; published May 16, 2013) (“Dhoolia”), and Ayala et al. (US 2012/0042061 A1; published Feb. 16, 2012) (“Ayala”). Final Act. 7–15.

The Examiner rejects claims 4 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Huang, Dhoolia, Ayala, and Garibay et al. (US 2004/0249762 A1; published Dec. 9, 2004) (“Garibay”). Final Act. 15–16.

The Examiner rejects claims 7 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Huang, Dhoolia, Ayala, and Oida et al. (US 2011/0154448 A1; published June 23, 2011) (“Oida”). Final Act. 16–17.

The Examiner rejects claims 9 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Huang, Dhoolia, Ayala, and Ginter et al. (US 5,892,900; issued Apr. 6, 1999) (“Ginter”). Final Act. 18–20.

ADOPTION OF EXAMINER’S FINDINGS AND CONCLUSIONS

Other than with respect to the Examiner’s rejections of claims 9 and 18 under 35 U.S.C. § 112, second paragraph, and claims 1–20 under 35 U.S.C. § 103(a), we agree with and adopt as our own the Examiner’s findings of facts as set forth in the Answer and in the Action from which this appeal was taken, and concur in the Examiner’s conclusions based thereon. To this extent, we have considered Appellants’ arguments, but do not find them persuasive of error. We provide the following explanation for emphasis.

35 U.S.C. § 101

Examiner’s Determinations and Appellants’ Contentions

In rejecting claim 1 as being directed to patent-ineligible subject matter, the Examiner determines “the claims are directed to certain method of processing information/transactions through a clearing house, comparing information with old information, and blocking/allowing access.” Final Act. 4. The Examiner further determines the additional elements of claim 1 “amount to no more than: (i) mere instructions to implement the idea on a computer, and/or (ii) recitation of generic computer structure that serves to perform generic computer functions that are well-understood, routine, and conventional activities previously known to the pertinent industry.” *Id.* at 4–5.

Appellants contend the Examiner erred because “there is no difference in principle between the present claims and a method, system, etc. claim directed to access control to a building. Surely no Court would consider a claim directed to, e.g., a method of operating a door lock as being directed to an abstract idea.” Appeal Br. 6. Appellants argue “the Examiner has not

identified a proper legally recognized abstract idea” (*id.* at 7; *see also* Reply Br. 3–6) because, among other things, Appellants contend claim 1 does “not preempt an abstract idea” (Appeal Br. 7; *see also* Reply Br. 7–8), the Examiner’s articulation of the abstract idea omits various elements of claim 1 (Appeal Br. 11), claim 1 is “not directed to subject matter historically performed as a mental process” (*id.* at 12), and “the Examiner has not identified any legal decision identifying [the articulated abstract idea] as a legally recognized abstract idea” (*id.* at 14; *see also* Reply Br. 8–11).

Appellants argue claim 1 has recitations that make it significantly more than the purportedly abstract idea articulated by the Examiner. In particular, Appellants argue claim 1 is “directed to a practical and very concrete method for controlling access to a physical thing, namely a virtual machine operating in a cloud computing environment” (Appeal Br. 16) and that claim 1 is tied to a specific machine because it is “limited to an apparatus and ‘real world’ machines” (*id.* at 17). *See also* Reply Br. 5–6, 11–13.

Appellants also argue the Examiner erred by failing to provide “analysis in the Office Action with respect to any of the dependent claims, let alone each and all of their features.” Appeal Br. 21; *see also* Reply Br. 13–14.

Analysis

To be statutorily patentable, the subject matter of an invention must be a “new and useful process, machine, manufacture, or composition of matter, or [a] new and useful improvement thereof.” 35 U.S.C. § 101. There are implicit exceptions to the categories of patentable subject matter identified

in § 101, including: (1) laws of nature; (2) natural phenomena; and (3) abstract ideas. *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). The Supreme Court has set forth a framework for distinguishing patents with claims directed to these implicit exceptions “from those that claim patent-eligible applications of those concepts.” *Id.* (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012)). The evaluation follows a two-part analysis: (1) determine whether the claim is directed to a patent-ineligible concept, e.g., an abstract idea; and (2) if so, then determine whether any element, or combination of elements, in the claim is sufficient to ensure that the claim amounts to significantly more than the patent-ineligible concept itself. *See Alice*, 134 S. Ct. at 2355.

“[A]t present there is no such single, succinct, usable definition or test” for what an “abstract idea” encompasses. *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016), *cert. denied*, 138 S. Ct. 469 (2017). Therefore, the conclusion that a claim is abstract often turns on the examination of “earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided.” *Amdocs*, 841 F.3d at 1294 (citing *Elec. Power Grp.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016)).

“[A]ll inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Mayo*, 566 U.S. at 71. We, therefore, look to whether: (1) the claims focus on a specific means or method that improves the relevant technology or (2) the claims are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016).

If a claim proves to be unpatentable as a result of the two-part analysis, no additional determination regarding preemption is necessary. “While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility,” as “questions on preemption are inherent in and resolved by the § 101 analysis.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (internal quotation marks and citation omitted).

Step 1

We agree with the Examiner that that claim 1, being directed to a method of controlling access to a virtual machine, is directed to a patent-ineligible abstract idea. *See* Ans. 2–3. Appellants argue the Examiner erred because the claimed method is comparable to a “claim directed to access control to a building.” Appeal Br. 6. Appellants further argue “the Examiner has not identified a proper legally recognized abstract idea” (*id.* at 7) and, in particular, “the Examiner has not identified any legal decision identifying [the articulated abstract idea] as a legally recognized abstract idea” (*id.* at 14).

We determine, however, that the subject matter of claim 1 is similar to the “abstract idea of ‘providing restricted access to resources.’” *Prism Techs. LLC v. T-Mobile USA, Inc.*, 696 F. App’x 1014, 1017 (Fed. Cir. 2017) (non-precedential), *cert. denied*, 138 S. Ct. 689 (2018). Importantly, the Specification provides ample evidence that the claimed virtual machine represents an access-controlled resource. *See, e.g.*, Spec. ¶¶ 24 (“‘Images’ . . . are defined as representations of virtual machines that run, provide, or support one or more services (e.g., applications or other resources)”).

Here it is not dispositive whether claim 1 is “directed to subject matter historically performed as a mental process.” Appeal Br. 12. The method for controlling access in *Prism Techs.* related “control[ling] access to protected *computer resources* by authenticating identity data, i.e., unique identifying information of *computer components*.” *Prism Techs.*, 696 F. App’x at 1016 (emphases added) (citing Gregg et al., U.S. 8,127,345 B2, col. 1, l. 60–col. 2, l. 24 (issued Feb. 28, 2012)). Despite being directed to a method related to *computer resources* and *computer components*, rather than a mental process, the claimed method in *Prism Techs.* was abstract. See *Prism Techs.*, 696 F. App’x at 1017.

For these reasons, we agree with the Examiner that claim 1 is directed to an abstract idea.

Step 2

We also agree with the Examiner that the additional recitations of claim 1 do not make it significantly more than the underlying abstract idea. See Final Act. 4–5. Appellants argue claim 1 is “directed to a practical and very concrete method for controlling access to a physical thing, namely a virtual machine operating in a cloud computing environment.” Appeal Br. 16; see also Reply Br. 5–6, 11–13. Appellants’ argument, however, fails to show that claim 1 improves the relevant technology rather than merely invoking generic processes and machinery. See *Enfish*, 822 F.3d at 1335–36.

The Specification describes virtual machines as including or being supported by generic “hardware computing devices having an operating system, disk drives, interfaces/ports, memory, buses, cooling sub-systems, and various software stored therein on tangible computer readable media.”

Spec. ¶ 14. The Specification further describes “images” and “image bundles” generically as “representations of virtual machines that run, provide, or support, one or more services (e.g., applications or other resources).” *Id.* at ¶ 24.

In light of these disclosures, claim 1 fails to recite anything beyond generic computer technology recitations. Mere programming of generic computer technologies is insufficient to make a claim more than an underlying abstract idea. *See Alice*, 134 S. Ct. at 2357 (“method claims, which merely require generic computer implementation, fail to transform [an] abstract idea into a patent-eligible invention”).

For these reasons, we agree with the Examiner that claim 1 is directed to patent-ineligible subject matter. Accordingly, we sustain the Examiner’s 35 U.S.C. § 101 rejection of claim 1, and claims 10 and 19, which Appellants do not argue separately.

Dependent Claims

Appellants also argue the Examiner erred by failing to provide “analysis in the Office Action with respect to any of the dependent claims, let alone each and all of their features.” Appeal Br. 21. However, Appellants do not show that any of the additional recitations of the dependent claims make any of the dependent claims *significantly more* than the underlying abstract idea. *See also* Ans. 5.

Accordingly, we also sustain the Examiner’s 35 U.S.C. § 101 rejection of claims 2–9, 11–18, and 20.

35 U.S.C. § 112, SECOND PARAGRAPH, CLAIMS 5 AND 14

Examiner's Determinations and Appellants' Contentions

In rejecting claim 5 as being indefinite, the Examiner determines the recitation “the virtual machine is not dormant and unlocked” is unclear. Final Act. 6. Specifically, the Examiner determines it is unclear “if the negative connotation of ‘not’ i[s] directed towards only [to] the ‘dormant’ or to both ‘dormant’ and ‘unlocked’ and therefore, the claim language could be interpreted as not dormant and not unlocked or it could be interpreted as being not dormant and being unlocked.” Ans. 5.

Appellants contend the Examiner erred because “it is not apparent how a person of ordinary skill in the art would read claim[] 5 . . . to say ‘not dormant and not unlocked.’” Appeal Br. 22. Appellants argue “a person of ordinary skill in the art reading claim[] 5 . . . would understand it to mean that the virtual machine is not dormant and is unlocked.” *Id.*; *see also* Reply Br. 14–15.

Analysis

We agree with the Examiner that claim 5 is ambiguous. *See* Ans. 5. The recitation “a total usage time defined as a time period for which the virtual machine *is not dormant and unlocked*” (emphasis added) can refer to either: (1) a time period for which the virtual machine is not dormant and is not unlocked or (2) a time period for which the virtual machine is not dormant and is unlocked. *See id.* Appellants argue that if claim 5 was intended to encompass the first interpretation claim 5 “would have read, e.g., ‘locked and not dormant.’” Reply Br. 5. Purportedly unambiguous alternatives to the disputed recitation, however, fail to show that the disputed recitation in its current form is also unambiguous. “[D]uring patent

prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.” *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1990). Because the disputed recitation has multiple reasonable interpretations, claim 5 is indefinite.

Accordingly, we sustain the Examiner’s 35 U.S.C. § 112, second paragraph, rejection of claim 5, and claim 14, which Appellants do not argue separately. Appeal Br. 22.

35 U.S.C. § 112, SECOND PARAGRAPH, CLAIMS 9 AND 18

Examiner’s Determinations and Appellants’ Contentions

In rejecting claim 9 as being indefinite, the Examiner determines “[i]t is unclear as to if the [claimed] report is for either an active machine, a locked virtual machine, a period of time, a determination of another client device, or any combination of these or each one separately.” Final Act. 6. The Examiner notes claim 9 “separates the limitation with ‘and for each of the active and locked virtual machines, a period of time for the active machine and the locked virtual machine have been used by the client computing device’ when the limitation initially started with ‘comprising information related to an active virtual machine.’” Ans. 6. Thus, the Examiner determines “it is unclear if the virtual machine is split into two virtual machines or if the status report is no longer merely to one virtual machine” and “if the ‘period of time’ is designated the active virtual machine initially referenced or to ‘each one of the active and locked virtual machines’ as later referenced.” Ans. 6.

Appellants contend the Examiner erred because claim 9 sets forth a “comma separated list of items separated by ‘and’” and lacks an “‘or’ separating the list of items.” Appeal Br. 23. Specifically, Appellants argue:

A person of ordinary skill in the art would understand that claim[] 9 . . . refer[s] to a status report comprising (a) information regarding an active virtual machine associated with the client computing device, and regarding a locked virtual machine associated with the client computing device, and for each one of the active and locked virtual machines, (b) information regarding a period of time for which the active virtual machine and the locked virtual machine have been used by the client computing device, and (c) information regarding whether or not another client computing device attempted to activate the locked virtual machine.

Reply Br. 15.

Analysis

Appellants emphasize claim 9 uses “and” multiple times, but never “or.” *See* Appeal Br. 23. This use of “and” multiple times, however, creates the potential for ambiguity because “and” is typically included only once before the last element of the list or (more rarely) between every element of the list.

Appellants posit one interpretation of claim 9 in which, with several changes, there are three parts of the claimed report. *See* Reply Br. 15 (adding part identifiers (a)–(c); moving “and” from the boundary of parts (a) and (b) to the middle of part (a); and inserting “information regarding” two additional times at the beginning of parts (b) and (c)). An artisan of ordinary skill—considering the ordinary use of “and” before the last element of a list—could also have interpreted claim 9 to include two parts and three sub-parts:

9. The method of claim 1 further comprising:
generating a status report comprising (1) information related to (1.a) an active virtual machine associated with the client computing device, (1.b) a locked virtual machine associated

with the client computing device, and (1.c) for each one of the active and locked virtual machines, a period of time for which the active virtual machine and the locked virtual machine have been used by the client computing device, and (2) whether or not another client computing device attempted to activate the locked virtual machine.

(part identifiers (1)–(2) and sub-part identifiers (1.a)–(1.c) added). This reasonable alternative interpretation only introduces part identifiers, rather than inserting or moving recitations, and makes the use of “and” multiple times less confusing.

Although flowing more naturally from the text of claim 9 than what Appellants proffer, this interpretation is substantively indistinguishable from Appellants’ proffered interpretation. *See* Reply Br. 15. In particular, under either interpretation the status report comprises information related *both* to an active virtual machine *and* to a locked virtual machine. Thus, the Examiner erred in interpreting the status report information as potentially being limited “to one virtual machine, as denoted at the beginning of the limitation.” Ans. 6. The Examiner provides no other basis for determining that claim 9 is indefinite. Therefore, despite the potential for ambiguity introduced by Appellants’ repeated use of “and” in a potentially confusing manner, we agree with Appellants that the Examiner erred in rejecting claim 9 as indefinite.

Accordingly, we do not sustain the Examiner’s 35 U.S.C. § 112, second paragraph, rejection of claim 9, and claim 18, which contains similar recitations and is similarly rejected.

35 U.S.C. § 103(A)

Examiner’s Determinations and Appellants’ Contentions

In rejecting claim 1 as obvious, the Examiner finds that Huang teaches or suggests most of the recitations of claim 1. Final Act. 7–9. In particular, the Examiner relies on Huang’s licensing of video content for “a rental period, a subscription period, and/or a preview period [for] a quantity of times that the transcoded video content has been processed and/or played [or for] a trial period” (Huang ¶ 68) to teach or suggest *determining an access should be terminated based upon an expiry of a threshold period of time associated with the usage or based upon a request received from the client computing device* (Final Act. 8 (citing Huang ¶ 68); *see also* Ans. 8).

Appellants contend the Examiner erred because Huang describes “evaluating after the fact information, such as whether a period of time has elapsed or whether the number of times the video content has been played exceeds a threshold.” Appeal Br. 27. Appellants argue “there is no indication of an accessed video content being terminated and the video content thereby being locked.” *Id.*; *see also* Reply Br. 17–18.

Analysis

We agree with Appellants that the Examiner’s findings do not show that Huang teaches or suggests *determining an access should be terminated based upon an expiry of a threshold period of time associated with the usage or based upon a request received from the client computing device*. *See* Appeal Br. 26–28. In particular, Huang licenses content based on “a certain number of uses or time period.” Reply Br. 17. Specifically, Huang’s licenses

may include information associated with terms of the license by which the transcoded video content may be processed (e.g., decrypted, encrypted, etc.) and/or played by user device **210**. For example, the mobile DRM [digital rights management] application may determine, from the information associated with the terms of the license, that *a rental period, a subscription period, and/or a preview period*, associated with the transcoded video content, has expired. In another example, the mobile DRM application may determine that a *quantity of times* that the transcoded video content has been processed and/or played, by user device **210**, exceeds a threshold identified in the information associated with the terms of the license. In still another example, the mobile DRM application may determine that a *trial period*, associated with the transcoded video content, has expired.

Huang ¶ 68 (italics added).

The Examiner relies on Huang’s rental, subscription, preview, and trial periods, and Huang’s quantity of times, to teach or suggest: (1) “an expiry of a threshold period of time associated with the usage” or (2) “a request received from the client computing device.” Final Act. 8. The claimed expiry of a threshold period of time, however, is associated with monitored “usage of the virtual machine.” Huang’s periods, in contrast, are independent of usage of the content. Huang ¶ 68. Moreover, Huang’s quantity merely relates to how many times the content has been processed or played rather than a time period associated with usage. *Id.* Furthermore, the Examiner does not show that processing or playing content falls within a reasonably broad interpretation of the claimed *requested received from the client device*. See Final Act. 8; see also, e.g., Spec. ¶ 42 (“control module 204 determines whether or not the customer requested a release of the leased guest virtual machine 102”). The Examiner does not rely on Dhoolia, Ayala, Oida, Garibay, or Ginter to teach or suggest the disputed recitation.

For these reasons, we agree with Appellants that the Examiner's findings do not show that Huang, even in combination with other cited art, teaches or suggests the disputed recitation. Accordingly, we do not sustain the Examiner's 35 U.S.C. § 103(a) rejection of claim 1, and the Examiner's 35 U.S.C. § 103(a) rejections of claims 2–20, which contain similar recitations.

DECISION

Because we affirm at least one rejection of each claim, we affirm the Examiner's decision rejecting claims 1–20.

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. § 41.50(f).

AFFIRMED