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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/482,029	09/10/2014	Fei Huang	C212	1021
152691	7590	11/19/2019	EXAMINER	
Setter Roche LLP 14694 Orchard Parkway Building A, Suite 200 Westminster, CO 80023			CHEUNG, EDDY	
			ART UNIT	PAPER NUMBER
			2165	
			NOTIFICATION DATE	DELIVERY MODE
			11/19/2019	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* FEI HUANG

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Appeal 2019-001122  
Application 14/482,029  
Technology Center 2100

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Before BRADLEY W. BAUMEISTER, MICHAEL J. STRAUSS, and  
SCOTT RAEVSKY, *Administrative Patent Judges*.

RAEVSKY, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1, 2, 4–10, 12–16, and 21–26. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> We use the word “Appellant” to refer to “Applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as the Assignee of the present application, VMWARE, INC. Appeal Brief filed July 9, 2018 (“Appeal Br.”) at 2.

### CLAIMED SUBJECT MATTER

The claims generally recite systems and methods for indexing attachable applications for computing systems. *See Spec., Abstract.* Claim 1, reproduced below with modified formatting, is illustrative of the claimed subject matter:

1. A method of attaching an application to a computing system, the method comprising:
  - [i] in a processing system, identifying an application attach triggering event for the computing system;
  - [ii] identifying a storage location for the application based on the application attach triggering event and an application index, wherein the storage location defines a location of at least one storage volume for the application and a location of elements for the application stored on the at least one storage volume, wherein the elements comprise at least files and directories; and<sup>[2]</sup>
  - [iii] mounting the at least one storage volume to the computing system; and
  - [iv] overlaying the elements for the application from the at least one storage volume in a file system for the computing system to make the application executable, such that the elements appear locally installed on the computing system even though the elements execute from the at least one storage volume.

### REJECTIONS

Claims 1, 2, 4–10, 12–16, and 21–26 stand rejected under 35 U.S.C. § 101 as directed to a judicial exception to patent-eligible subject matter. Final Action mailed Dec. 20, 2017 (“Final Act.”) at 4.

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<sup>2</sup> This instance of the word “and” appears to be superfluous.

Claims 1, 2, 4–10, 12–16, and 21–26 stand rejected under 35 U.S.C. § 103 as being unpatentable over Conover (US 2012/0174096 A1, published July 5, 2012) and Tsaur (US 8,510,271 B1, issued Aug. 13, 2013). *Id.* at 6.

## STANDARD OF REVIEW

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

## REJECTION UNDER 35 U.S.C. § 101

### *I. The Examiner's Determinations*

The Examiner determines that claim 1 is directed to the abstract idea of “remotely accessing and retrieving user-specified information.” Final Act. 5. The Examiner determines the claimed “identifying an application attach triggering event,” “identifying a storage location,” and “mounting” limitations all relate to the identified abstract idea. *Id.* The Examiner further determines “the additional elements are simply a generic recitation of a computer performing [its] generic computer functions.” *Id.* We address Appellant’s arguments in the Analysis section, below.

### *II. Principles of Law*

#### A. SECTION 101:

Inventions for “new and useful process, machine, manufacture, or composition of matter” generally constitute patent-eligible subject 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, 67–68 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

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. “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.*

#### B. USPTO SECTION 101 GUIDANCE:

The U.S. Patent and Trademark Office (“PTO”) recently published revised guidance on the application of § 101. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Guidance”), updated by USPTO, *October 2019 Update: Subject Matter Eligibility* (available at [https://www.uspto.gov/sites/default/files/documents/peg\\_oct\\_2019\\_update.pdf](https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf)).

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 activities such as a fundamental economic practice, or mental processes); and
- (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)).

Guidance at 52–55.

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

(3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional activity” in the field (*see* MPEP § 2106.05(d)); or

(4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

*Id.* at 56.

## *II. Step 2A, Prong One (Judicial Exception)*

Under step 2A, prong 1, of the Guidance, we first look to whether the claim recites any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activities such as a fundamental economic practice, or mental processes). *Id.* at 52–54.

The Specification explains that an “administration system 710 is included that allows an *administrator* or other management process to dictate the applications that are supplied to computing systems.” Spec. ¶ 48 (emphasis added). “For example, administration system 710 may identify that a particular application is required to be attached to all computing systems.” *Id.*; *see also id.* ¶ 25 (“An application attach triggering event may include a *user* selection of an application to attach.” (emphasis added)). Once an administrator identifies an application to attach, “administration system 710 checks application index 715 to identify a location for the application.” *Id.* ¶ 48.

We determine claim 1 recites a mental process because claim 1 broadly recites a user selecting an application to attach and a user identifying

where that application is stored. Specifically, claim 1 recites “[a] method of attaching an application to a computing system” that recites steps including: (i) “. . . identifying an application attach triggering event for the computing system” and (ii) “identifying a storage location for the application based on the application attach triggering event and an application index, wherein the storage location defines a location of at least one storage volume for the application and a location of elements for the application stored on the at least one storage volume, wherein the elements comprise at least files and directories.”

As drafted, these limitations, under their broadest reasonable interpretation, recite a mental process that can be performed in the human mind or using a pen and paper. *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372–73 (Fed. Cir. 2011) (determining that a claim whose “steps can be performed in the human mind, or by a human using a pen and paper” is directed to an unpatentable mental process); *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1335 (Fed. Cir. 2015) (“Courts have examined claims that required the use of a computer and still found that the underlying, patent-ineligible invention could be performed via pen and paper or in a person’s mind.”). In this case, these limitations encompass acts people can perform using their minds because people can perform the “identifying an application attach triggering event” step by mentally picking an application to attach and perform the “identifying a storage location” step by simply looking at the application index to identify the storage location.

The Guidance expressly recognizes mental processes as constituting a patent-ineligible abstract idea. Accordingly, claim 1 recites a judicial

exception to patent-eligible subject matter under step 2A, prong 1, of the Guidance.

*III. Step 2A, Prong 2 (Integration into a Practical Application)*

Under the Guidance, we now must determine if additional elements in the claims integrate the judicial exception into a practical application. Guidance at 53–55; MPEP §§ 2106.05(a)–(c), (e)–(h). The Guidance provides exemplary considerations that are indicative of an additional element or combination of elements integrating the judicial exception into a practical application, such as an additional element reflecting an improvement in the functioning of a computer or an improvement to other technology or technical field. *Id.* at 55; MPEP § 2106.05(a).

Appellant contends claim 1 is similar to the claims in *Enfish* and *McRO* because it is “targeted at a specific solution to a software problem . . . that identifies and mounts volumes to a computing system and overlays the contents to make applications executable.” Appeal Br. 7 (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016); *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1316 (Fed. Cir. 2016)).

Specifically, Appellant contends that similar to those cases,

the claims are directed at a novel method of identifying a storage location for an application, mounting the volume associated with the location to a computing system, and overlaying elements of the application in a file system for the computing system. This solution provides a technological improvement making applications executable without a traditional installation of the application on the computing system.

*Id.* We agree with Appellant.

Claim 1 recites additional limitations pertinent to solving this problem, including,

mounting the at least one storage volume to the computing system; and  
overlaying the elements for the application from the at least one storage volume in a file system for the computing system to make the application executable, such that the elements appear locally installed on the computing system even though the elements execute from the at least one storage volume.

These additional limitations address a technical problem arising in the context of virtual machines, namely the problem that

new computing devices or recently provisioned virtual machines may require the installation of a plurality of applications. These applications may be located on storage disks, the internet, install media, such as a compact disk, or any other installable location. Consequently, if a user or administrator desires to install all of the applications, time and resources may be taken away from executing the application to identify the location and complete the installation process.

Spec. ¶ 3. As explained in the Specification, the claimed solution to this problem is a technical one. The Specification explains,

Upon [an application] being attached, the registry keys and other file system elements within the virtual machine may be updated to make the application executable as though it is locally installed.

. . . .

. . . In some examples, in making the application available, the files, directories, and other elements necessary for the application may be overlaid into the file system of the computing device. Thus, instead of seeing each application volume that is attached for applications on the computing system, the applications may appear as though they have been installed locally in the Program Files or other similar storage locations.

*Id.* ¶¶ 19, 21. Thus, similar to the claims in *Enfish*, the claims here “are directed to a specific implementation of a solution to a problem in the software arts.” 822 F.3d at 1339.

We conclude these limitations integrate the recited judicial exception of a mental process into a practical application within the meaning of the Guidance. Accordingly, under the Guidance, we determine the Examiner erred in finding the claims ineligible because the claims are not, in fact, *directed to* the recited judicial exception. *See* Guidance at 52–55. Thus, we need not reach step 2B of the *Alice* inquiry. We reverse the Examiner’s rejection of claims 1, 2, 4–10, 12–16, and 21–26 under 35 U.S.C. § 101.

#### REJECTION UNDER 35 U.S.C. § 103

Appellant contends Conover and Tsaur fail to teach or suggest “wherein the storage location defines a location of at least one storage volume for the application and a location of elements for the application stored on the at least one storage volume,” as recited in claim 1. Appeal Br. 10.

Appellant contends that in contrast to the above limitation, “Tsaur merely teaches that ‘Object map 166 lists the names of logical objects stored on volume 120 (C:) at time T1 and their respective logical addresses, such as file paths or registry information.’” *Id.* “In other words,” Appellant contends, “Tsaur merely teaches mapping the location of objects inside a storage volume, but does not provide a location of the volume itself for mounting to a computing system.” *Id.*

The Examiner finds “Tsaur (Col. 1 lines 48–58) teaches ‘Each storage volume has a plurality of locations, such as fixed-length data blocks.’”

Ans. 6; Final Act 9 (also citing Tsaur 1:48–58). The Examiner also finds “Tsaur (Col. 3 lines 7–13) teaches that the system generates and stores an application map . . . the application map holds an object address that describes where the object can be found within a collection of storage volumes.” Ans. 6–7 (quoting Tsaur 3:7–13); Final Act 9 (citing same).

We agree with the Examiner. Tsaur’s application map “describe[s] locations of logical objects used by one or more applications” and “describes where the object can be found within a collection of storage volumes.” Tsaur 3:7–11. The claim broadly requires the storage location to “define[] a location of at least one storage volume *for the application*.” (Emphasis added.) By disclosing a location within a collection of storage volumes for an object of the application, Tsaur teaches or suggests defining a location of at least one storage volume *for the application*.

Accordingly, we sustain the Examiner’s rejection of claim 1. Appellant’s arguments regarding the rejection of independent claims 9 and 21 rely on the same arguments as for claim 1, and Appellant does not argue separate patentability for the dependent claims. *See* Appeal Br. 11. We therefore also sustain the Examiner’s rejection of claims 2, 4–10, 12–16, and 21–26. *See* 37 C.F.R. § 41.37(c)(1)(iv).

### CONCLUSION

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 2, 4–10, 12–16, 21–26	101	Subject matter eligibility		1, 2, 4– 10, 12– 16, 21–26
1, 2, 4–10, 12–16, 21–26	103	Conover, Tsaur	1, 2, 4– 10, 12– 16, 21–26	

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
<b>Overall Outcome</b>			1, 2, 4– 10, 12– 16, 21–26	

Since at least one rejection encompassing all claims on appeal is affirmed, the decision of the Examiner is 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**