UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARC JOYE

Appeal 2019-000021
Application 14/735,099
Technology Center 2400

Before MAHSHID D. SAADAT, LINZY T. McCARTNEY, and
MATTHEW J. McNEILL, *Administrative Patent Judges.*

McCARTNEY, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellant[1] seeks review under 35 U.S.C. § 134(a) from the
Examiner's non-final rejection of claims 1–11. We have jurisdiction under
35 U.S.C. § 6(b).

We affirm in part.

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[1] Appellant identifies the real party in interest as Thomson Licensing.
Appeal Brief 3, filed May 14, 2018 ("Appeal Br.").

BACKGROUND

This patent application concerns password authentication. *See*

Specification 2:27–4:20, filed June 9, 2015 ("Spec."). Claims 1, 5, 6, 10, and

11 are independent. Claims 5 and 10 illustrate the claimed subject matter:

> 5.   A method for processing a password entry comprising:
>
> receiving by an interface circuit a password entry comprising a string of characters;
>
> generating by a processor circuit L sub-entries from the password entry, wherein each sub-entry is an L-1 character string equal to the string of characters less a different character; and
>
> generating by the processor circuit password verifiers by respectively using a function on each sub-entry.
>
> 10.   A method for authentication of a password entry input by a user comprising:
>
> obtaining by a processor circuit N obtained password verifiers representative of the password entry, each obtained password verifier generated from a N-1 character string equal to a N-character password less a different character;
>
> comparing by the processor circuit the obtained password verifiers with M stored password verifiers, each stored password verifier generated from a M-1 character string equal to a M-character password less a different character; and
>
> authenticating by the processor circuit the password entry upon determination that at least one obtained password verifier matches a stored password verifier.

Appeal Br. 21–22, 23.

REJECTION

Claims	35 U.S.C. §
1–11	101

DISCUSSION

We have reviewed the Examiner's rejection and Appellant's arguments. We disagree with Appellant that the Examiner erred in rejecting claims 1–5 and 11 under § 101. For these claims, as consistent with the discussion below, we adopt the Examiner's reasoning, findings, and conclusions on pages 2–9 of the Non-Final Office Action mailed December 22, 2017 ("Non-Final Act.") and pages 3–7 and 9–14 of the Examiner's Answer mailed July 25, 2018 ("Ans."). But we agree with Appellant that the Examiner erred in rejecting claims 6–10 under § 101. We address the Examiner's rejection of claims 1–11 under § 101 below.

Section 101 Rejection

Section 101 of the Patent Act provides that "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" is patent eligible. 35 U.S.C. § 101. But the Supreme Court has long recognized an implicit exception to this section: "Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)). To determine whether a claim falls within one of these excluded categories, the Court has set out a two-part framework. The framework requires us first to consider whether the claim is "directed to one of those patent-ineligible concepts." *Alice*, 573 U.S. at 217. If so, we then examine "the elements of

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[the] 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." *Alice*, 573 U.S. at 217 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 78, 79 (2012)). That is, we examine the claim for an "inventive concept," "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 (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73).

The Patent Office has revised its guidance about this framework. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Revised Guidance"). Under the Revised Guidance, to decide whether a claim is directed to an abstract idea, we evaluate whether the claim (1) recites subject matter that falls within one of the abstract idea groupings listed in the Revised Guidance and (2) fails to integrate the recited abstract idea into a practical application. *See* Revised Guidance, 84 Fed. Reg. at 51, 54. If the claim is directed to an abstract idea, as noted above, we then determine whether the claim has an inventive concept. The Revised Guidance explains that when making this determination, we should consider whether the additional claim elements add "a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field" or "simply append[] well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality." Revised Guidance, 84 Fed. Reg. at 56.

With these principles in mind, we turn to the § 101 rejection.

Claim 5

The Revised Guidance explains that the abstract idea exception includes "mental processes," that is, acts that people can perform in their minds or using pen and paper. *See* Revised Guidance, 84 Fed. Reg. at 52 & nn. 14–15. The Examiner determined that claim 5 recites subject matter that falls within this abstract idea grouping. *See, e.g.*, Non-Final Act. 8 (determining that claim 5 is directed to an abstract idea because the claim is drawn to collecting and analyzing information like the patent-ineligible claims in *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016)); *see also* USPTO, October 2019 Update: Subject Matter Eligibility at 7, https://www.uspto.gov/sites/default/files/documents /peg_oct_2019_update.pdf ("October 2019 Update") (explaining that an example of a claim that recites mental processes is "a claim to 'collecting information, analyzing it, and displaying certain results of the collection and analysis,' where the data analysis steps are recited at a high level of generality such that they could practically be performed in the human mind, *Electric Power Group, LLC v. Alstom, S.A.*").

We agree. Claim 5 recites (1) receiving a password entry comprising a string of characters; (2) generating L sub-entries from the password entry, each sub-entry an L-1 character string equal to the string of characters less a different character; and (3) generating password verifiers by using a function on each sub-entry. *See* Appeal Br. 21–22. People can perform each of these steps in their minds or using pen and paper. People can receive a password entry comprising a string of characters by, for example, reading the password entry from a database. *Cf. CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 (Fed. Cir. 2011) (determining that a limitation that

"requires 'obtaining information about other transactions that have utilized an Internet address that is identified with the [ ] credit card transaction'—can be performed by a human who simply reads records of Internet credit card transactions from a preexisting database" (alteration in original)); *Elec. Power Grp.*, 830 F.3d at 1353 ("Accordingly, we have treated collecting information, including when limited to particular content (which does not change its character as information), as within the realm of abstract ideas."). Even if this step did not encompass mental processes, the step would not make claim 5 patent eligible because the step merely collects data. *See CyberSource*, 654 F.3d at 1372 ("[E]ven if some physical steps are required to obtain information from the database (e.g., entering a query via a keyboard, clicking a mouse), such data-gathering steps cannot alone confer patentability.").

As for the generating L sub-entries limitation, this limitation recites generating L sub-entries from the password entry so that "each sub-entry is an L-1 character string equal to the string of characters less a different character." Appeal Br. 21. This limitation encompasses generating sub-entries by omitting a different character from the password entry for each sub-entry. *See* Spec. 6:14–7:3, 7:10–12 (disclosing exemplary sub-entries). People can generate these sub-entries by, for instance, writing down a list of sub-entries that each omits a different character from the password entry or mentally identifying these sub-entries. *See CyberSource*, 654 F.3d at 1372 (determining that "a person may 'construct[ ] a map of credit card numbers' as required by step (b) by writing down a list of credit card transactions made from a particular IP address" (alteration in original)); *Elec. Power Grp.*, 830 F.3d at 1354 ("In a similar vein, we have treated analyzing

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information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.").

Finally, for the generating password verifiers limitation, this limitation recites generating password verifiers "by respectively using a function on each sub-entry" but does not specify the function that the claimed method uses. Appeal Br. 22. The written description describes various exemplary functions, *see, e.g.*, Spec. 5:20–6:13, but does not limit the claimed method to a particular function. This limitation is thus so broadly drawn that it encompasses people using functions that they can solve in their minds or using pen and paper to generate password verifiers. *See CyberSource*, 654 F.3d at 1373 (determining that a claim limitation "is so broadly worded" that the limitation "encompasses literally *any* method" for performing the limitation, including "even logical reasoning that can be performed entirely in the human mind"); *Elec. Power Grp.*, 830 F.3d at 1354.

Because each of the limitations recited in claim 5 encompasses an act that people can perform in their minds or using pen and paper, claim 5 recites mental processes. *See CyberSource*, 654 F.3d at 1372 ("It is clear that unpatentable mental processes are the subject matter of claim 3. All of claim 3's method steps can be performed in the human mind, or by a human using a pen and paper."). Claim 5 recites mental processes even though the claimed method calls for computer components to perform the recited steps. *See, e.g.*, *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.");

CyberSource, 654 F.3d at 1375 ("That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*."); Revised Guidance, 84 Fed. Reg. at 52 n.14 ("If a claim, under its broadest reasonable interpretation, covers performance in the mind but for the recitation of generic computer components, then it is still in the mental processes category unless the claim cannot practically be performed in the mind."). Claim 5 thus recites an abstract idea. *See* Revised Guidance, 84 Fed. Reg. at 52 (listing mental processes among the enumerated groupings of abstract ideas).

Other aspects of claim 5 confirm that the claim recites an abstract idea. Claim 5 is largely functional in nature. The claim recites receiving a password entry and generating particular L sub-entries from the password entry but does not recite *how* the claimed method performs these steps. *See* Appeal Br. 21. And although claim 5 recites using a function to generate a password verifier from each sub-entry, the claim does not specify what that function is. *See* Appeal Br. 22. The functional nature of claim 5 confirms that the claim recites an abstract idea. *See Affinity Labs of Tex., LLC v. Amazon.com Inc.*, 838 F.3d 1266, 1269 (Fed. Cir. 2016) ("The purely functional nature of the claim confirms that it is directed to an abstract idea, not to a concrete embodiment of that idea."). In addition, claim 5 essentially converts collected data into a new form of data. *See* Appeal Br. 21–22. The Federal Circuit has explained that processes that simply convert data from one form to another generally recite an abstract idea. *See, e.g.*, *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) ("Without additional limitations, a process that employs

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mathematical algorithms to manipulate existing information to generate additional information is not patent eligible.").

Appellant contends that claim 5 does not recite an abstract idea because the claim is distinguishable from the patent-ineligible claims in *Electric Power Group*. *See* Appeal Br. 11–12. According to Appellant, unlike the claims in *Electric Power Group*, claim 5 "does not involve 'collecting information' but rather" recites limitations that involve "the *transforming* of a received password by generating sub-entries from the password and further *transforming* the obtained sub-entries into password verifiers by using a function on each sub-entry." Appeal Br. 11–12 (emphases altered). Appellant argues that claim 5 also differs from the claims in *Electric Power Group* because "the password of claim 5 . . . is entered and the entered password is received by an interface circuit" and "is not available information to be collected or gathered such as 'events on an interconnected electric power grid . . . over a wide area'" as in *Electric Power Group*. Appeal Br. 12.

We find these arguments unpersuasive. The generating sub-entries and generating password verifiers limitations referenced by Appellant are similar to the limitations in *Electric Power Group* not because the generating sub-entries and generating password verifiers limitations involve collecting information but rather because they recite analytical steps that people can perform in their minds. *See Elec. Power Grp.*, 830 F.3d at 1354 (explaining that the Federal Circuit has "treated analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category" and determining that the claims at issue involve such steps). As discussed above,

people can perform these steps by mentally identifying sub-entries that each omits a different character from the password entry and mentally solving functions to generate password verifiers. For this reason—not because the limitations involve collecting information—the generating sub-entries and generating password verifiers limitations are analogous to the limitations in *Electric Power Group*.

As for the recited password entry, even if the password entry is not "available" to the same extent or in the same way as the information in *Electric Power Group*, that does not change that claim 5 collects the password entry. Collecting information, without more, usually falls within the mental processes category of abstract ideas. *See, e.g.*, *Elec. Power Grp.*, 830 F.3d at 1353 ("[W]e have treated collecting information, including when limited to particular content (which does not change its character as information), as within the realm of abstract ideas."); *CyberSource*, 654 F.3d at 1372 (explaining that a step that "requires 'obtaining information about other transactions that have utilized an Internet address that is identified with the [ ] credit card transaction'—can be performed by a human who simply reads records of Internet credit card transactions from a preexisting database" (alteration in original)); *see also* October 2019 Update 7 (explaining that an example of a claim that recites mental processes is "a claim to 'collecting information, analyzing it, and displaying certain results of the collection and analysis,' where the data analysis steps are recited at a high level of generality such that they could practically be performed in the human mind, *Electric Power Group, LLC v. Alstom, S.A.*"). That is the case here. Claim 5 recites that an interface circuit receives (that is, collects) a

password entry comprising a string of characters without further meaningful detail or restriction.

Because we determine that claim 5 recites an abstract idea, we next consider whether claim 5 integrates the abstract idea into a practical application. *See* Revised Guidance, 84 Fed. Reg. at 51. In doing so, we evaluate the claim as a whole to determine whether the claim "integrate[s] the [abstract idea] into a practical application, using one or more of the considerations laid out by the Supreme Court and the Federal Circuit." Revised Guidance, 84 Fed. Reg. at 55; *see also* October 2019 Update 12 (discussing the practical application analysis). That is, we consider any additional elements recited in the claim along with the limitations that recite an abstract idea to determine whether the claim integrates the abstract idea into a practical application. *See* October 2019 Update 12.

The additional elements recited in claim 5 include "an interface circuit" and "a processor circuit." Appeal Br. 21–22. The written description indicates that these elements are generic computer components. For example, the written description discloses that user interface 113 and processor 111 form part of computer 110 and that computer 110 "can be any kind of suitable computer or device capable of performing calculations, such as a standard Personal Computer (PC) or workstation." Spec. 5:5–6; *see also* Appeal Br. 5 (mapping the "receiving by an interface circuit a password entry" limitation to page 7, lines 18–19 of the written description, which describe a user inputting a password entry using user interface 113). This disclosure suggests that the recited "interface circuit" and "processor circuit" are generic computer components. In addition, the written description describes user interface 113 and processor 111 in largely functional terms

with few technical details. The lack of details about these elements also indicates that the "interface circuit" and "processor circuit" are generic computer components. *See Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1331 (Fed. Cir. 2017) ("The claimed mobile interface is so lacking in implementation details that it amounts to merely a generic component (software, hardware, or firmware) that permits the performance of the abstract idea, i.e., to retrieve the user-specific resources.").

The additional elements also perform generic computer functions. Claim 5 recites that the interface circuit receives a password entry comprising a string of characters. *See* Appeal Br. 21. Receiving this type of information is a generic computer function. *See, e.g.*, *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) ("That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive."). Claim 5 recites that the processor circuit generates particular L sub-entries and password verifiers. *See* Appeal Br. 21–22. These steps respectively involve data manipulation (generating sub-entries by deleting different characters from a password entry) and mathematical computation (generating password verifiers by using a function on sub-entries). *See* Appeal Br. 21–22; Spec. 6:14–7:3, 7:10–12. Data manipulation and mathematical computation are generic computer functions. *See, e.g.*, *Glasswall Sols. Ltd. v. Clearswift Ltd.*, 754 F. App'x 996, 998 (Fed. Cir. 2018) (determining that "'parsing the content data in accordance with a predetermined data format' and determining nonconforming data . . . . [involves] the conventional manipulation of information by a computer"); *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Canada (U.S.)*, 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."); *see also* Spec. 1:28–30 (explaining that a prior art tool "builds a file with all possible variations on the password, emulating up to three typos *such as missed characters*, duplicated characters, extra characters, wrong order and wrong case" (emphasis added)).

Considering claim 5 as a whole, the claim recites using generic computer components that perform generic computer functions to implement an abstract idea. *See* Appeal Br. 21–22. Using generic computer components in this way does not integrate the abstract idea into a practical application. *See, e.g.*, *Alice*, 573 U.S. at 223–24 ("Given the ubiquity of computers . . . wholly generic computer implementation is not generally the sort of 'additional featur[e]' that provides any 'practical assurance that the process is more than a drafting effort designed to monopolize the [abstract idea] itself.'" (second and third alterations in original) (quoting *Mayo*, 566 U.S. at 77)); Revised Guidance, 84 Fed. Reg. at 55 (explaining the courts have identified merely using a computer as a tool to perform an abstract idea as an example of when a judicial exception has not been integrated into a practical application).

Appellant's arguments have not persuaded us otherwise. Appellant argues that the generating sub-entries and generating password verifiers limitations recited in claim 5 "indicate" that claim 5 "make[s] non-abstract improvements to computer technology." Appeal Br. 15. According to Appellant, these limitations allow the claimed method to "solve the long-standing problem of providing a solution that can allow an authentication

system to allow mistyped passwords without the drawbacks of prior solutions and, therefore, improve computer functionality." Appeal Br. 15. For largely similar reasons, Appellant argues that claim 5 provides a "solution to a technical problem in conventional industry practice" and is "necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks" like the patent-eligible claims in *DDR Holdings, LLC v. Hotels.com, L.P.,* 773 F.3d 1245 (Fed. Cir. 2014). Appeal Br. 19 (emphases omitted).

We disagree. Claim 5 recites a "method for processing a password entry" that generates password verifiers. *See* Appeal Br. 21–22. The claim does not recite using these verifiers to "allow an authentication system to allow mistyped passwords" as argued by Appellant. In fact, the claimed method does not use the password verifiers; the claimed method merely generates them. *See* Appeal Br. 21–22. Although Appellant asserts that a claim does not need to recite the solution that allegedly makes the claim patent eligible, *see* Reply Br. 10, the Federal Circuit has stated otherwise. *See, e.g., Am. Axle & Mfg., Inc. v. Neapco Holdings LLC,* 939 F.3d 1355, 1363 (Fed. Cir. 2019) ("The problem with AAM's argument is that the solution to these desired results is not claimed in the patent. We have repeatedly held that features that are not claimed are irrelevant as to step 1 or step 2 of the *Mayo/Alice* analysis."); *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016) ("The § 101 inquiry must focus on the language of the Asserted Claims themselves."). Nor do the alleged benefits of the invention necessarily flow from the generated password verifiers alone as argued by Appellant. *See* Reply Br. 16. Generating the password verifiers, without additional steps such as comparing the generated

verifiers to stored password verifiers and authenticating the password entry if there is a match, does not "allow an authentication system to allow mistyped passwords." Because claim 5 does not recite the solution that Appellant asserts makes claim 5 patent eligible, we find these arguments unpersuasive.

Appellant argues for the first time in the Reply Brief that claim 5 is patent eligible because claim 5 is similar to the claims at issue in the *McRO*,[2] *Core Wireless*,[3] *Visual Memory*,[4] *Thales*,[5] *BASCOM*,[6] and *Amdocs*[7] decisions. *See* Reply Br. 11–12, 15–16. Appellant forfeited these arguments by failing to raise them in the Appeal Brief. *See* 37 C.F.R. §§ 41.37(c)(1)(iv) (explaining that with exceptions inapplicable here, "any arguments or authorities not included in the appeal brief will be refused consideration by the Board for purposes of the present appeal"), 41.41(b)(2) ("Any argument raised in the reply brief which was not raised in the appeal brief . . . will not be considered by the Board for purposes of the present appeal, unless good cause is shown.").

Even if Appellant had timely raised these arguments, we would have found them unpersuasive. In *McRO*, the claims incorporated "specific," "limited" rules that improved computer animation. *McRO*, 837 F.3d at

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[2] *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016).
[3] *Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356 (Fed. Cir. 2018).
[4] *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253 (Fed. Cir. 2017).
[5] *Thales Visionix Inc. v. United States*, 850 F.3d 1343 (Fed. Cir. 2017).
[6] *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016).
[7] *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016).

1314–16. Similarly, in *Core Wireless*, the claims were "directed to a *particular* manner of summarizing and presenting information in electronic devices" and "disclose[d] a *specific* manner of displaying a limited set of information to the user." *Core Wireless*, 880 F.3d at 1363 (emphases added). In contrast, claim 5 recites a series of broadly worded functions without meaningfully limiting how the method performs the functions. *See* Appeal Br. 21–22. And in *Visual Memory*, the claims were directed to "an enhanced computer memory system" that "outperform[ed] a prior art memory system that [was] armed with 'a cache many times larger than the cumulative size of the subject caches.'" *Visual Memory*, 867 F.3d at 1259. Here, as discussed above, claim 5 uses generic computer components that perform generic functions to produce password verifiers. *See* Appeal Br. 21–22. Appellant has not shown that the computer components recited in claim 5 function differently than generic computer components, let alone function in an improved manner.

As for *Thales*, *BASCOM*, and *Amdocs*, these cases involved the unconventional use or arrangement of elements. *See Thales*, 850 F.3d at 1348–49 ("Rather, the claims are directed to systems and methods that use inertial sensors in a non-conventional manner to reduce errors in measuring the relative position and orientation of a moving object on a moving reference frame."); *BASCOM*, 827 F.3d at 1350 ("As is the case here, an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces."); *Amdocs*, 841 F.3d at 1301 ("[T]he claim's enhancing limitation necessarily requires that these generic components operate in an unconventional manner to achieve an improvement in computer functionality."). Although Appellant asserts that

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the claim elements "are arranged in a non-conventional and non-generic way," Reply Br. 16, Appellant has presented no persuasive evidence or reasoning to support this argument. As discussed below, the claimed elements are conventional and perform conventional functions. Claim 5 is therefore distinguishable from the claims in *Thales*, *BASCOM*, and *Amdocs*.

Finally, we consider whether claim 5 has an inventive concept, that is, whether the claim has additional elements that "'transform the nature of the claim' into a patent-eligible application." *Alice*, 573 U.S. at 217 (quoting *Mayo*, 566 U.S. at 78, 79). This requires us to evaluate whether the additional claim elements add "a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field" or "simply append[] well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality." Revised Guidance, 84 Fed. Reg. at 56.

The additional elements recited in claim 5 add well-understood, routine, and conventional activities. As discussed above, the additional elements include the recited interface and processor circuits. The written description provides little detail about these elements, which shows that the elements are well understood, routine, and conventional. *See Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384 (Fed. Cir. 1986) ("[A] patent need not teach, and preferably omits, what is well known in the art."); *see also* USPTO, Memorandum on Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*) at 3 (Apr. 19, 2018), available at https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF (explaining that a specification that describes additional

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elements "in a manner that indicates that the additional elements are sufficiently well-known that the specification does not need to describe the particulars of such additional elements to satisfy 35 U.S.C. § 112(a)" can show that the elements are well understood, routine, and conventional). These elements perform steps that include receiving information, omitting characters from a password entry to produce sub-entries, and solving a function to generate password verifiers. *See* Appeal Br. 21–22; Spec. 5:20–7:3, 7:10–12. These steps, at the high level of generality recited in claim 5, encompass well-understood, routine, and conventional computer activities. *See, e.g.*, *buySAFE*, 765 F.3d at 1355; *Glasswall*, 754 F. App'x at 998; *Bancorp*, 687 F.3d at 1278; *see also* Spec. 1:28–30; *cf. SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1170 (Fed. Cir. 2018) ("Indeed, we think it fair to say that an invocation of already-available computers that are not themselves plausibly asserted to be an advance, for use in carrying out improved mathematical calculations, amounts to a recitation of what is 'well-understood, routine, [and] conventional.'" (quoting *Mayo*, 566 U.S. at 73)).

Whether we consider these additional elements individually or as an ordered combination, these elements do not transform the nature of claim 5 into a patent-eligible application. These elements are largely recited at a high level of generality, and there is no indication that these elements override the conventional use of known features or involve an unconventional arrangement or combination of elements. At bottom, claim 5 recites conventional computer components employed in a customary manner, which is not enough to provide an inventive concept. *Alice*, 573 U.S. at 223 ("[T]he

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mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.").

Summary

For the above reasons, we determine that claim 5 is directed to an abstract idea and does not have an inventive concept. We thus sustain the Examiner's rejection of claim 5 under § 101.

Claim 10

Claim 10 recites a "method for authentication of a password entry input by a user" that (1) obtains N password verifiers representative of the password entry, (2) compares the obtained password verifiers with M stored password verifiers, and (3) authenticates the password entry upon determining that at least one obtained password verifier matches a stored password verifier. *See* Appeal Br. 23. Claim 10 recites that the obtained password verifiers are "generated from a N-1 character string equal to a N-character password less a different character" and that the stored password verifiers are "generated from a M-1 character string equal to a M-character password less a different character." Appeal Br. 23.

The Examiner found that claim 10, like claim 5, recites subject matter that falls within the mental processes category of abstract ideas. *See, e.g.*, Non-Final Act. 8–9 (determining that claim 10 is directed to an abstract idea because the claim is drawn to collecting and analyzing information like the patent-ineligible claims in *Electric Power Group* and collecting and comparing information like the patent-ineligible claims in *Classen Immunotherapies, Inc. v. Biogen IDEC*, 659 F.3d 1057 (Fed. Cir. 2011)); *see also* October 2019 Update 7–8 (explaining that examples of claims that recite mental processes include "a claim to 'collecting information,

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analyzing it, and displaying certain results of the collection and analysis,'
where the data analysis steps are recited at a high level of generality such
that they could practically be performed in the human mind, *Electric Power
Group, LLC v. Alstom, S.A.*" and "a claim to collecting and comparing
known information (claim 1), which are steps that can be practically
performed in the human mind, *Classen Immunotherapies, Inc. v. Biogen
IDEC*").

As with claim 5, Appellant argues that claim 10 is patent eligible
because claim 10 "make[s] non-abstract improvements to computer
technology" because the claim "solve[s] the long-standing problem of
providing a solution that can allow an authentication system to allow
mistyped passwords without the drawbacks of prior solutions and, therefore,
improve computer functionality" and "computer related technology." Appeal
Br. 15, 17. According to Appellant, the benefits provided by the claimed
invention include "decreased reduction of password strength, decreased
complexity and increased efficiency of implementation, and increased
security and resistance to hacker attacks." Appeal Br. 19.

We agree with Appellant. Even assuming that, like claim 5, claim 10
recites mental processes, claim 10 integrates the mental processes into a
practical application. Unlike claim 5, claim 10 not only recites that a
processor circuit *obtains* password verifiers generated in a particular manner
but also recites that a processor circuit *uses* the obtained password verifiers
in a particular way to authenticate a password entry. *See* Appeal Br. 23. The
written description explains that a processor circuit using the obtained
password verifiers to authenticate a password entry in the claimed manner
provides "a solution that can allow an authentication system to allow

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mistyped passwords without having the drawbacks of the prior art solutions" such as "requir[ing] a comparison of the plaintext versions of the password" and removing "any control of the addition of the mistyped passwords." Spec. 2:9–29. The claimed method thus reflects an improvement to technology or a technical field. Accordingly, claim 10 integrates the recited mental processes into a practical application and is therefore patent eligible. *See* Revised Guidance, 84 Fed. Reg. at 55.

Remaining Claims

Independent claim 5 is substantially similar to independent claims 1 and 11. Because Appellant does not present separate, persuasive arguments for claim 1, the claims that depend from claim 1 (claims 2–4), or claim 11, we sustain the Examiner's rejection of these claims.

Independent claim 10 is substantially similar to independent claim 6, and the Examiner's rejection of claim 6 suffers from the same deficiencies as the Examiner's rejection of claim 10. We thus do not sustain the Examiner's rejection of claim 6 or its dependent claims (claims 7–9).

CONCLUSION

Claims Rejected	35 U.S.C. §	Affirmed	Reversed
1–11	101	1–5, 11	6–10

No 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).

<u>AFFIRMED IN PART</u>