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Paper 15
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTERNATIONAL BUSINESS MACHINES CORPORATION,
Petitioner,

v.

TRUSTED KNIGHT CORPORATION,
Patent Owner.

IPR2020-00323
Patent 9,503,473 B1

Before THOMAS L. GIANNETTI, BRIAN J. MCNAMARA, and NABEEL U. KHAN, *Administrative Patent Judges*.

KHAN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314, 37 C.F.R. § 42.4

I. INTRODUCTION

A. Background and Summary

International Business Machines Corporation ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting an *inter partes* review of claims 1–29 ("the challenged claims") of U.S. Patent No. 9,503,473 B1 (Ex. 1001, "the '473 Patent"). Trusted Knight Corporation ("Patent Owner") timely filed a Preliminary Response (Paper 6, "Prelim. Resp."). With our authorization, Petitioner filed a Preliminary Reply (Paper 8, "Reply"), and Patent Owner filed a Sur-Reply (Paper 10, "Sur-Reply") and Petitioner filed a Reply to Patent Owner's Sur-Reply (Paper 13, "Sur-Sur-Reply").

We have authority to institute an *inter partes* review only if the information presented in the Petition shows "there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). Upon consideration of the Petition and the Preliminary Response, we conclude that Petitioner has shown a reasonable likelihood of prevailing against at least one of the challenged claims. For the reasons explained below, we institute an *inter partes* review on the challenged claims of the '473 Patent.

B. Related Matters

The parties identify the following matter as related to this case: *Trusted Knight Corporation v. International Business Machines Corporation*, Case. No. 3:19-cv-1206 (N.D. Cal.). Pet. 86; Paper 3 at 1.

C. The '473 Patent

The '473 Patent, titled "Apparatus, System, and Method for Protecting Against Keylogging Malware," is directed to "preventing key logger malware that utilizes form grabbing techniques to steal financial and identity information from users' browsers." Ex. 1001, 1:22–24. The '473 Patent

describes that the method includes detecting a browser form submission initiation call event associated with data inputs entered by a user. *Id.* at 4:16–18. Confidential data is cleared from the data inputs, thereby protecting against the threat of key logging malware capturing the confidential data. *Id.* at 4:20–22. The clearing of the confidential data is performed without requiring detection of the key logging malware. *Id.* at 4:22–24. Further, the detecting of a browser form submission initiation call event occurs at a most privileged access level. *Id.* at 4:25–26. Figure 1 of the '473 Patent is reproduced below:

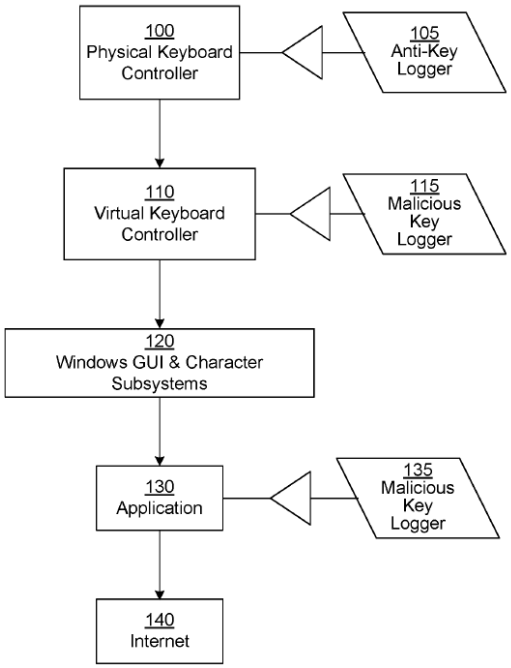


FIG. 1

Figure 1 depicts an overview of an environment in which an anti-key logger operates. *Id.* at 5:14–17. At the keyboard driver level (100), input is provided by a user, and the anti-key logger (105) functions at this level to protect the inputted keyboard data. *Id.* at 5:17–19. The virtual keyboard (110) is the next step in the flow of inputted keyboard data, and it is a

common location for a malicious key logger (115) to be present to intercept the inputted data. *Id.* at 5:19–22. The operating system (120) receives the inputted keyboard data and passes the data to the application (130) being utilized by the user, which is a location where malicious keyloggers (135) also intercept the inputted keyboard data. *Id.* at 5:22–26. Finally, the application passes the inputted keyboard data to the Internet web server (140) per the user request. *Id.* at 5:26–28.

Figure 2 of the'473 Patent is reproduced below:

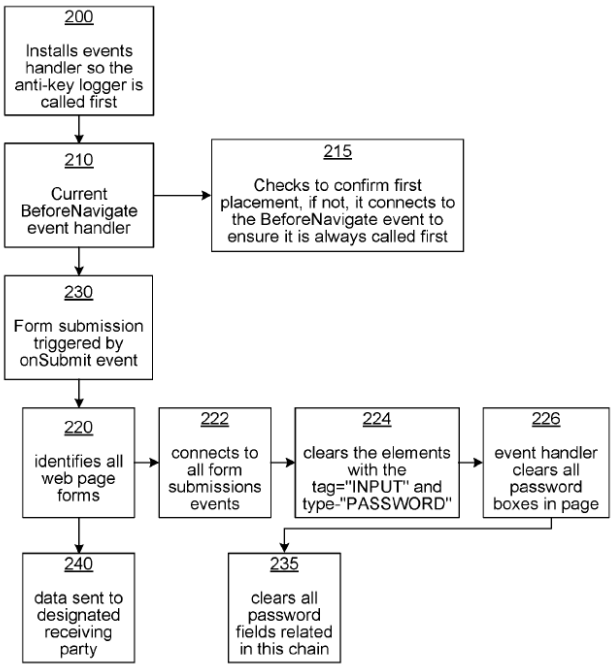


FIG. 2

Figure 2 depicts a diagram of actions in defeating the operation of form-grabbing key loggers. *Id.* at 4:52–54. The anti-key logger software inserts itself in an application programming interface ("API") stack last, causing the anti-key logger software to be called first (S200). *Id.* at 5:42–44. When a

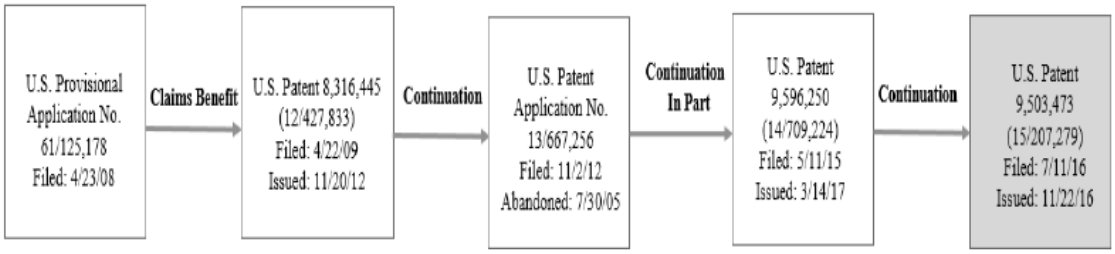
BeforeNavigate[1] event is identified (S210), the anti-key logger software confirms its placement in the API stack (S215). *Id.* at 5:44–46. When a form submission event occurs (S230), the anti-key logger software identifies all forms on the called web page (S220). *Id.* at 5:46–48. If forms are present, the anti-key logger software connects to each form submission event (S222), the anti-key logger software clears all form inputs marked with INPUT or PASSWORD (S224), and then the event handler clears all passwords (S226). *Id.* at 5:48–52. The anti-key logger software provides the user inputted data to the OnSubmit event to the designed receiving party, such as a bank (S240). *Id.* at 5:52–54. The anti-key logger software also ensures all password form fields are cleared from the API chain (S235) and thus are unavailable to capture by form grabbing key loggers. *Id.* at 5:54–57.

D. Priority Chain of the '473 Patent

The '473 Patent issued from U.S. Patent Application No. 15/207,279, filed July 11, 2016 ("the '279 Application"). The '473 Patent claims priority to, and incorporates by reference the content of, each of the following applications: U.S. Patent Application No. 14/709,224, filed May 11, 2015 ("the '224 Application," also "the Parent Application"), now U.S. Patent No. 9,596,250 ("the '250 Patent"); U.S. Patent Application No. 13/667,256, filed November 2, 2012, now abandoned ("the Abandoned Application"); U.S. Patent Application No. 12/427,833, filed April 22, 2009 ("the '833 Application," also "the Grandparent Application"), now U.S. Patent No. 8,316,445 ("the '445 Patent"); and U.S. Patent Application No. 61/125,178

[1] The '473 Patent describes BeforeNavigate as a form submission initiation call event under Internet Explorer. Ex. 1001, 10:30–32.

("the '178 Provisional Application"). Prelim. Resp. 22–23; Pet. 11. The priority chain of the '473 Patent (reproduced from Patent Owner's Preliminary Response) is depicted below:



The above figure illustrates the relationship between the '473 Patent and all the intermediate applications claiming priority all the way back to the '178 Provisional Application. Prelim. Resp. 23.

E. Illustrative Claims

Of the challenged claims, claims 1, 11, 22, and 26 are independent. Claims 2–10 depend from independent claim 1, claims 12–21 depend from independent claim 11, claims 23–25 depend from independent claim 22, and claims 27–29 depend from independent claim 26.

Claim 1, reproduced below with annotations, is illustrative.

> 1. [1pre] A method for preventing software key logging executable by a microprocessor, comprising:
>
> [1a] installing and maintaining an anti-key lodger [sic] at a most privileged access level for browser events in an Application Programming Interface (API) stack;
>
> [1b] detecting, by the anti-key logger, a browser form submission initiation call event associated with data inputs entered by a user, wherein the form submission initiation call event is an OnSubmit call event or a BeforeNavigate call event;
>
> [1c] submitting the data inputs to a designated entity; and

> [1d] clearing, by the anti-key logger, confidential data from the data inputs to protect against the threat of key logging malware capturing the confidential data.

Ex. 1001, 13:2–16.

F. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–29 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–29	102(b)	the '445 Patent[2]
1–6, 8–17, 19–29	103(a)	Waterson[3], Ross[4]
1–6, 8–17, 19–29	103(a)	Waterson, Ross, Geon[5]

In addition, Petitioner relies on the Declaration of Patrick McDaniel in support of the asserted grounds of unpatentability. *See generally* Pet.

II. ANALYSIS

A. Discretionary Denial of Petition under § 314(a)

Patent Owner argues that the Board should exercise discretion under 35 U.S.C. § 314(a) to deny institution because the same prior art arguments advanced in this Petition were put forward in the related district court proceeding, and the district court proceeding has reached an advanced stage. Prelim. Resp. 58–61. According to Patent Owner, these facts support denying institution under both *NHK Spring Co., Ltd. v. Intri-Plex Technologies, Inc.*, IPR2018-00752, Paper 8, 19–20 (PTAB Sept. 12, 2018)

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[2] Liske, US 8,316,445 B2, Nov. 20, 2012 (Ex. 1003, "the '445 Patent"). The '445 Patent is the "Grandparent" of the '473 Patent. *See* Section I.D, *supra*.
[3] Waterson, US 7,779,062 B2, Aug. 17, 2010 (Ex. 1009, "Waterson").
[4] Blake Ross et al., *Stronger Password Authentication Using Browser Extensions*, Proc. Of the 14th USENIX Security Symposium (July 31 – Aug. 5, 2005) (Ex. 1010, "Ross").
[5] Geon et al., US 7,774,595 B2, Aug. 10, 2010 (Ex. 1012, "Geon").

(precedential) and under *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 3 (PTAB Mar. 20, 2020),which was designated as precedential while the parties were briefing the § 314(a) issue.

Under § 314(a), the Director has discretion to deny institution of an *inter partes* review. *See* 37 C.F.R. § 42.4(a) ("The Board institutes the trial on behalf of the Director."); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) ("[T]he agency's decision to deny a petition is a matter committed to the Patent Office's discretion."); *SAS Inst. Inv. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) ("[Section] 314(a) invests the Director with discretion on the question whether to institute review . . . ." (emphasis omitted)); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) ("[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.").

In *NHK*, the Board denied institution relying, in part, on § 314(a) because the parallel district court proceeding was scheduled to finish before the Board reached a final decision. "Thus, *NHK* applies to the situation where the district court has set a trial date to occur earlier than the Board's deadline to issue a final written decision in an instituted proceeding." *Fintiv,* Paper 11 at 3. When determining whether to exercise discretion to deny institution under *NHK* due to an earlier trial date, we consider the following factors ("*Fintiv* factors"):

> 1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
>
> 2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
>
> 3. investment in the parallel proceeding by the court and the parties;

> 4. overlap between issues raised in the petition and in the parallel proceeding;
>
> 5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
>
> 6. other circumstances that impact the Board's exercise of discretion, including the merits.

Id. at 6. "These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding." *Id.* In evaluating these factors, we take "a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Id.* (citing Patent Trial and Appeal Board Consolidated Trial Practice Guide November 2019 ("CTPG"), 58.). We address the *Fintiv* factors *in seriatim* below.

1. Whether a Stay Exists or Is Likely to Be Granted if a Proceeding Is Instituted

Petitioner states that it "intends to seek a stay if institution is granted." Reply 1. According to Patent Owner, however, "the underlying district court action will likely not be stayed even if this petition is instituted." Sur-Reply 2. Patent Owner bases its argument on two cases from the Northern District of California in which motions to stay were denied because, according to Patent Owner, the cases were past the early stages. Sur-Reply at 2 (citing *Aylus Networks, Inc. v. Apple Inc.*, 2015 WL 12976113, at*1–2 (N.D. Cal. 2015) and *Adaptix, Inc. v. HTC Corp.*, 2105 WL 12839246 at *2 (N.D. Cal. 2015).

We find this factor to be neutral, neither weighing for or against denying institution. We note initially that the underlying litigation is not stayed and neither party has moved to stay the litigation. However, we

credit Petitioner's statement that it intends to seek a stay if institution is granted.

We are not persuaded by Patent Owner arguments that the underlying litigation will likely not be stayed if institution is granted. The cases Patent Owner relies upon in support of its argument are inapposite. In both *Aylus* and *Adaptix*, the district court had already issued a claim construction order and set a trial date. *Aylus* at *1; *Adaptix* at *2. Further, in both cases the district court found it significant that several of the asserted claims were not under *inter partes* review and therefore a stay would not simplify the case enough to justify a stay. *See Aylus* at *2 (finding that *denying* stay would narrow the scope of the case and simplify proceedings); *Adaptix* at *2 (fewer than twenty-five percent of the claims at issue were subject to *inter partes* review). Here, the parties present no evidence that a trial date has been set in the underlying litigation. Further, unlike *Aylus* and *Adaptix*, the Petition here seeks review of all claims of the '473 Patent, the only patent that appears to be at issue in the underlying litigation. *See* Ex. 2009 (Complaint for Patent Infringement). Thus, conditions that led to the denials of a stay in *Aylus* and *Adaptix* are not present here. We conclude that if, after institution, Petitioner were to move to stay the underlying litigation, the district court may well find that the issues would be simplified by the Board's review of the challenged claims, and thus be more likely to grant a stay.

Ultimately, we are not persuaded by Patent Owner's argument that the district court would not stay the underlying litigation based simply on examples from the court's history that are not analogous to this case.

2. Proximity of the Court's Trial Date to the Board's Projected Statutory Deadline

If the court's trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution. *Fintiv*, Paper 11 at 9. Here, no trial date has yet been set in the underlying litigation. *See* Ex. 1021 (Case Management Order); Reply 1. Thus, this factor distinguishes *NHK* and weighs heavily against denying institution.

3. Investment in the Parallel Proceeding by the Court and Parties

Patent Owner argues the parties have engaged in significant discovery, exchanged infringement and invalidity contentions, and briefed claim construction. Prelim. Resp. 59; Sur-Reply 3. Petitioner argues, on the other hand, the close of fact discovery and expert discovery has not been set, no depositions have taken place, no expert reports have been submitted, and there is no date for trial. Reply 1–2.

If, at the time of the institution decision, the district court has issued substantive orders related to the patent at issue, such as a preliminary injunction order related to validity issues, this fact would favor denial. *See Fintiv*, Paper 11 at 9–10. If the district court has issued a claim construction order, this may also indicate that the court and parties have invested sufficient time in the parallel proceeding especially when little significant discovery remains after the order issues. *See Fintiv*, Paper 11 at 10, n.17. If, however, the district court has not issued substantive orders related to the validity of the challenged patent, this fact weighs heavily against exercising discretion to deny institution. *Id*. at 10.

The district court in the underlying litigation recently issued a claim construction order (*see* Ex. 1022) but has not issued any substantive orders

relating to validity of the '473 Patent. Moreover, although the parties have engaged in discovery by exchanging contentions and producing documents, fact discovery and expert discovery are still ongoing. Further, Petitioner filed its Petition soon after it served its invalidity contentions in the underlying litigation. *See* Sur-Reply 1. This typically shows that Petitioner filed its Petition expeditiously. *See Fintiv*, Paper 11, 11–12. We find the investment by the parties and court in the underlying litigation to not be extensive enough at this juncture to weigh in favor of denying institution.

4. Overlap between Issues Raised in the Petition and in the Parallel Proceeding

Patent Owner argues "the references and arguments raised in the petition are identical to those raised in both the current district court action and the prior litigation." Sur-Reply 3. Petitioner does not dispute this fact. *See* Reply 1. When a petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial. *Fintiv*, Paper 11 at 12. Conversely, if the petition includes materially different grounds, arguments, and/or evidence that those presented in the district court, this fact has tended to weigh against denying institution. *Fintiv*, Paper 11 at 12–13. Because the references and arguments presented in the Petition overlap with those presented in the underlying litigation, this factor weighs in favor of denying institution.

5. Whether the Petitioner and the Defendant in the Parallel Proceeding Are the Same Party

It is undisputed that Petitioner is the defendant in the underlying litigation. *See* Ex. 2009 (Complaint for Patent Infringement). This factor, therefore weighs in favor of exercising discretion to deny institution.

6. Other Circumstances that Impact the Board's Exercise of Discretion, Including the Merits

Patent Owner argues "the grounds raised by Petitioner are meritless" because Petitioner does not identify any published decisions supporting its interpretation of § 120 and fails to provide reasonable likelihood of unpatentability. Sur-Reply 3. As explained further below, we find Petitioner has shown a reasonable likelihood of prevailing against at least one of the challenged claims. Thus, this factor weighs against denying institution.

7. Balancing the Fintiv Factors

We have considered the circumstances and facts before us in view of the *Fintiv* factors. Because our analysis is fact driven, no single factor is determinative of whether we exercise our discretion to deny institution under § 314(a). Instead, the factors considered are part of a balanced assessment of all relevant circumstances in the case. *Fintiv*, Paper 11 at 14. Here, the strongest concerns raised by Patent Owner are that the Petitioner is presenting the same references and arguments in this Petition as in the underlying litigation. However, these concerns are outweighed by the fact that a trial date has not yet been set and Petitioner intends to seek a stay, making it likely that our Final Decision will issue before the underlying litigation goes to trial. This also diminishes the risk of inefficiency, duplication of efforts, and inconsistency as to issues raised in the underlying litigation.

Balancing all of the factors, we determine that the circumstances presented here weigh against exercising discretion under § 314(a) to deny institution of *inter partes* review.

B. Level of Ordinary Skill in the Art

Petitioner argues that a person of ordinary skill in the art at the time of the invention "would have at least a Bachelor's degree and two years' work experience in operating systems, device drivers, or anti-malware software, or equivalent work experience." Pet. 20 (citing Ex. 1013, ¶ 40). Patent Owner indicates that "[f]or purposes of [the] Preliminary Response, Patent Owner does not dispute Petitioner's definition of a person of ordinary skill in the art[.]" Prelim. Resp. 30 (citing Ex. 2024, ¶ 28). For purposes of this Decision, we adopt Petitioner's description, which we determine to be consistent with the level of skill reflected in the asserted prior art references. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

C. Claim Construction

In this case, we apply the claim construction standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). 37 C.F.R. § 42.100(b);*see also* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018). Under the *Phillips* standard, claim terms must be given "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips*, 415 F.3d at 1313. Only claim terms in controversy require express construction, "and only to the extent necessary to resolve the controversy." *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Petitioner states that a construction adopted by the district court in prior litigation involving the '445 Patent (asserted as a reference in this proceeding) is "relevant" to its analysis of the '473 patent that is the subject

of this proceeding[6]. Pet. 21. The relevant construction adopted by the district court construes "clearing confidential data," as used in the '445 patent reference to mean, "removing meaning from confidential data." *Id.* Petitioner applies this construction in at least one of its three grounds of challenge. *See* Pet. 69. Petitioner also states that in December 2019 it proposed constructions for the terms "clearing confidential data," "designated receiving entity," "an application programming interface ('API') stack," and "most privileged access level," in the pending district court litigation involving the '473 Patent that is the subject of this proceeding. Pet. 22. But Petitioner states "the construction of those terms will not have any impact on the validity of the '473 Patent." Pet. 22.

Patent Owner identifies constructions for "clearing confidential data," and "designated entity" agreed upon by the parties in the underlying district court litigation concerning the '473 patent but "agrees with the Petitioner that 'construction of those terms will not have any impact on the validity of the '473 Patent.'" Prelim. Resp. 29 (citing Pet. 22).

Although both parties state that the construction of the aforementioned claim terms will not have an impact on the validity of the '473 Patent, we find that because Petitioner adopts and applies the district court's construction for "clearing confidential data" in one of the grounds of challenge, that at least this term's construction is relevant to the issues presented in this Petition. Both parties have agreed the district court's prior construction of "clearing confidential data" in the related litigation concerning the '445 patent applies in the underlying litigation concerning

[6] Petitioner states that the Specification of the '445 patent (grandparent to the '473 patent) is virtually identical to the Specification of the '473 patent. Pet. 8, 15, 33.

the ’473 patent and neither party argues that the construction is incorrect. We have reviewed the district court’s construction and the evidence of record in this proceeding and apply the district court’s construction for purposes of this Decision. Accordingly, we construe “clearing confidential data” to mean “removing meaning from confidential data.”

We determine that no other claim terms require express construction for purposes of this Decision. A final determination as to claim construction will be made at the close of the proceeding, after any hearing, based on all the evidence of record. The parties are expected to assert all their claim construction arguments and evidence in the Petition, Patent Owner’s Response, Petitioner’s Reply, or otherwise during trial, as permitted by our rules.

D. Anticipation by the ’445 Patent

Petitioner contends claims 1–29 are anticipated by the ’445 Patent. Anticipation under 35 U.S.C. § 102 requires that each limitation in a claim is found in a single prior art reference, arranged as recited in the claim. *Net MoneyIn, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). The disclosure of the element by the reference can be an express disclosure or an inherent disclosure. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

As explained below, we determine based on the present record that Petitioner has not shown a reasonable likelihood it would prevail in establishing that each of the challenged claims is anticipated.

1. Overview of the ’445 Patent

As previously discussed, the ’473 Patent claims priority to the filing date of the ’445 Patent. Prelim. Resp. 22–23; Pet. 11. As contended by Petitioner, the ’473 Patent and the ’445 Patent have virtually identical

specifications. Pet. 8, 15, 33. As such we refer back to the overview of the '473 Patent, which applies to the '445 Patent as well.

2. Analysis of whether the '445 Patent is Prior Art

Petitioner contends the '445 Patent "Grandparent" is prior art to the '473 Patent. Pet. 24; *see also* Pet. 25–33. According to Petitioner, the Parent Application "was not 'similarly entitled to the benefit' of any earlier application in the claimed priority chain because it was filed with a completely new specification, all of which constitutes new matter, and the claims in the Parent Application were all exclusively directed to the new matter. Pet. 23–25 ("As all the Parent's claims are directed to new matter, the effective date of the Parent Application as a whole is its filing date."). Petitioner argues that because the Parent Application itself claimed only new matter, it did not meet the "written description" requirement of § 120 and was therefore not entitled to claim priority to any earlier patent in its lineage. *Id.* According to Petitioner, the '473 Patent is not entitled to claim priority to the '445 Patent, because 35 U.S.C. § 120 only allows a priority claim "on an application similarly entitled to the benefit of the filing date of the first application." *Id*. As further argued by Petitioner, the '445 Patent issued more than a year before the filing date of the '473 Patent, and thus, the '445 Patent is anticipatory prior art to the '473 Patent. *Id.*

Patent Owner responds that the '445 Patent is not prior art. Prelim. Resp. 32; *see also* Prelim. Resp. 33–49. Patent Owner contends Petitioner's interpretation of the priority statute, 35 U.S.C. § 120, is erroneous and not supported by any case law. Prelim. Resp. 33. Patent Owner further argues Petitioner's argument is undercut by the fact that the Examiner of the application that resulted in the '473 Patent already considered the priority

issue and acknowledged on the record that Patent Owner's priority claim was sound. *Id.*

At this stage of the proceeding, we are not persuaded by Petitioner's arguments. In order to claim the benefit of an earlier filed non-provisional application under 35 U.S.C. § 120, a later-filed application must comply with several requirements, including:

> (1) the written description of the earlier filed application discloses the invention claimed in the later filed application sufficient to satisfy the requirements of § 112; (2) the applications have at least one common inventor; (3) the later application is filed before the issuance or abandonment of the earlier filed application; and (4) the later application contains a reference to the earlier filed application.

In re NTP, Inc., 654 F.3d 1268, 1277 (Fed. Cir. 2011).

Patent Owner provides evidence that the '473 Patent satisfies all these requirements. For example, Patent Owner alleges that the invention of the '473 Patent is sufficiently disclosed in the Grandparent Application and in all other descendant applications in the chain, which incorporate the Grandparent Application by reference. *See* Prelim. Resp. 22–23; 45–49. Patent Owner also provides evidence that all the applications in the chain have common inventorship. Prelim. Resp. 18. Patent Owner argues that "all of the later-filed applications in the family of the '473 Patent . . . were filed before the 'patenting or abandonment of or termination of' the prior-filed non-provisional application, and thus were co-pending for purposes of 35 U.S.C. § 120." Prelim. Resp. 27, 42–43. Finally, Patent Owner alleges that "the '473 Patent clearly and unambiguously references the '445 Patent, all the intermediate applications in the '473 Patent family, and the relationships thereto." Prelim. Resp. 38, 40–41.

Petitioner does not dispute that the invention of the '473 Patent has been disclosed by all applications in the chain from the Grandparent down to the '473 Patent. Nor does Petitioner dispute that the '473 Patent satisfies the other requirements of § 120. Instead, Petitioner's argument hinges on the contention that because the Parent Application includes only claims that are directed to new matter, the Parent Application is not "similarly entitled to the benefit of the filing date of the" Grandparent Application, even though there is no break in the chain of disclosure from the Grandparent Application to the '473 Patent.[7] *See* Pet. 28–32.

Petitioner, however, does not cite any law to support this contention. Instead Petitioner cites to cases that are generally distinguishable from the facts in this case. For example, in *Natural Alternatives Int'l, Inc v. Iancu*, 904 F.3d 1375, 1380 (Fed. Cir. 2018) the Federal Circuit found a break in the priority chain because an intermediary application failed to satisfy the "specific reference" requirement of § 120. *Id*. at 1381. In *Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344 (Fed. Cir. 2012), the patentee waived arguments that an earlier patent in the priority chain was not prior art against some claims in later patents in the chain. *See Id.* at 1352. Here, Patent Owner argues that the Grandparent is not prior art and that there has been no break in the priority chain for any of the challenged claims.

Petitioner has not demonstrated that there has been a break in the priority chain as to claims directed only to the common subject matter continuously disclosed by the applications in the chain. Because the '473 Patent properly continues the chain from the Parent Application under § 120,

[7] Petitioner does not dispute that the '473 patent, as well as the Parent, incorporate by reference the prior applications in the chain up to the Grandparent Application. Pet. 29; Ex. 1001, 1:5–13.

the claims of the '473 Patent directed only at the common subject matter benefit from the filing date of the Grandparent. *Transco Prods., Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 557 n.6 (Fed. Cir. 1994) ("a continuing application is entitled to rely on the filing date of an earlier application only with respect to subject matter common to both applications").

3. Conclusion

In summary, we agree with Patent Owner that the invention of the '473 Patent is sufficiently disclosed in the Grandparent Application and in all other descendant applications in the chain down to the '473 Patent and that the other requirements of § 120 are met. This entitles the claims of the '473 Patent to the benefit of the priority date of the Grandparent Application.

For these reasons and based on the arguments and evidence presented in the Petition, we determine that Petitioner has not shown sufficiently that the '445 patent is prior art. Accordingly, we conclude on this record that Petitioner has not shown a reasonable likelihood of prevailing on this ground of unpatentability.

E. Grounds under § 103(a)

Petitioner contends claims 1–6, 8–17, and 19–29 are obvious in view of Waterson and Ross; and claims 1–6, 8–17, and 19–29 are obvious in view of Waterson, Ross, and Geon.

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are "such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations,

including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of "whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness")); *see In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)).

As explained below, we determine based on the present record that Petitioner has shown a reasonable likelihood it would prevail in establishing that each of claims 1–6, 8–17, and 19–29 is unpatentable as obvious under 35 U.S.C. § 103(a).

F. Obviousness over Waterson and Ross

1. Overview of Waterson

Waterson relates to a method and system for securing user entry data against keyboard login attempts. Ex. 1009, Abstract. The method/system masks user input data, either insulating the data from vulnerable parts of the operating system or application, or contaminating user data that is supplied to those vulnerable parts of the operating system or application. *Id.* The method/system securely stores data, either intercepted prior to reaching the vulnerable parts of the operating system or extracted from the contaminated data, and securely provides the data directly to a verified application. *Id.* Figure 6 of Waterson is reproduced below:

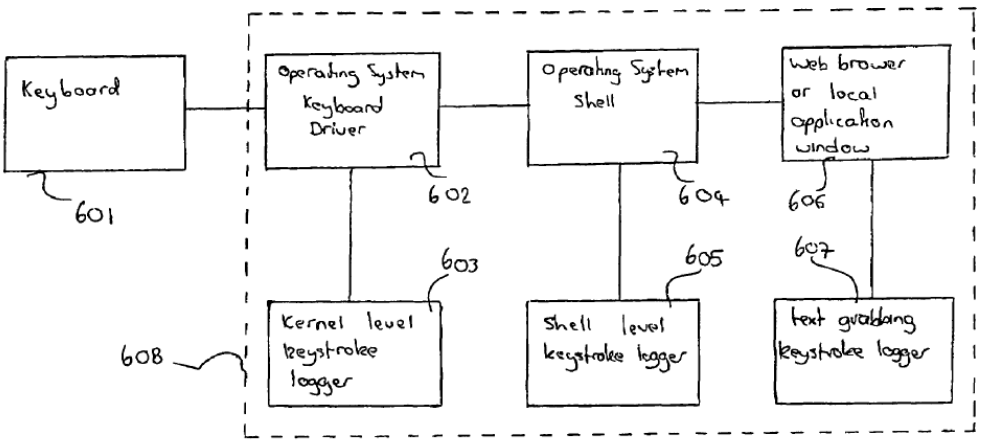

FIGURE 6

Figure 6 depicts a representation of the different software levels at which keystroke loggers may operate. *Id.* at 4:6–7. The user enters sensitive information on a keyboard (or key-entry device) 601 which is connected to a computer (or other hardware) 608. *Id.* at 4:58–60. The operating system of the computer has a keyboard driver and buffer 602 that interfaces between the hardware computer keyboard and any software. *Id.* at 4:61–63. A kernel level keystroke logging program 603 harvests keystroke information directly from the keyboard driver. *Id.* at 4:63–65. Shell level software 604 typically interfaces between the keyboard driver of the operating system and other higher level software applications. *Id.* at 4:66–5:1. Shell level keystroke logging software 605 harvests information straight from the operating system keyboard buffer. *Id.* at 5:3–5. Application level keystroke logging software 607 further harvests keystroke information from an application 606. *Id.* at 5:6–8.

Figure 5 of Waterson is reproduced below:

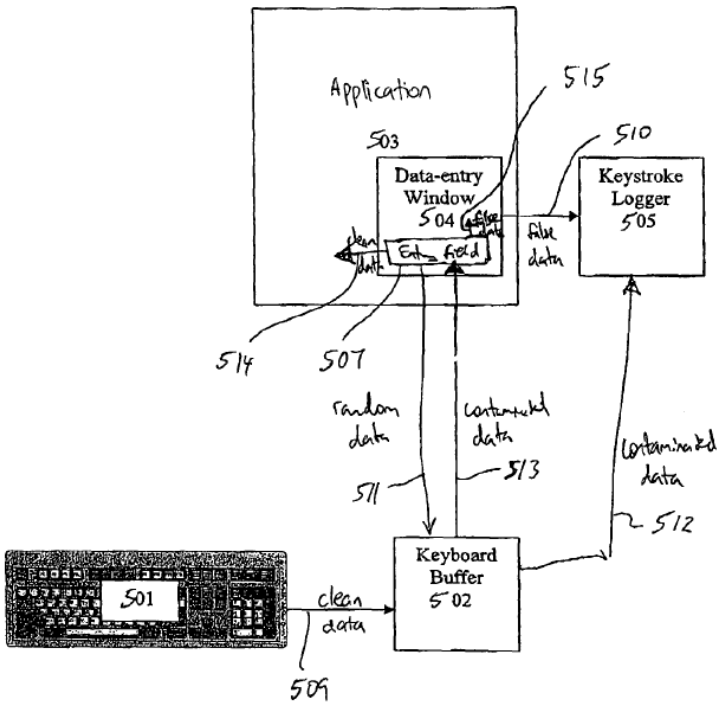

FIGURE 5

Figure 5 depicts the protection of sensitive keystroke data. *Id.* at 4:3–5. The user enters the data via keyboard 501, where the data from keyboard 501 enters keyboard buffer 502. *Id.* at 10:39–40. Unknown to the user of keyboard 501, a keyboard logger 505 is present. *Id.* at 10:40–42. The application 503 launches a data entry window 504 to gather data from the user, where the data entry window 504 includes a protected entry field 507. *Id.* at 10:42–45. When the entry field 507 is initialized, application 503 requests a token. *Id.* at 10:45–46. The entry field 507 generates a token and returns it to application 503. *Id.* at 10:46–48.

When the entry field 507 gains focus, indicating that the user of keyboard 501 intends to enter data into the entry field 507, the entry field begins to stream random data 511 to the keyboard buffer 502. *Id.* at 10:49–52. The user of keyboard 501 enters data at keyboard 501 and this clean data 509 enters keyboard buffer 502. *Id.* at 10:52–54. The content of the

keyboard buffer 502 is read by entry field 507 and may also be read by a keystroke logger 505. *Id.* at 10:54–56. The entry field 507 receives contaminated data 513, and the keystroke logger 505 also receives contaminated data 512. *Id.* at 10:56–57.

The entry field 507 generates and stores the random data stream 511 which contaminates the clean data 509. *Id.* at 10:58–59. The entry field 507 removes the random data from the contaminated data 513 that it receives from the buffer to leave clean data. *Id.* at 10:59–62. Once the focus leaves the secured entry field 507, the entry field 507 stops streaming data to the keyboard buffer. *Id.* at 10:62–63. The application 503 requests the entered data by sending a request accompanied by the token to the entry field 507. *Id.* at 10:63–65. Clean data 514 is supplied directly to the application 503 in response to the authenticated request. *Id.* at 10:65–67. False data 515 is supplied to the data entry window 504. *Id.* at 10:67–11:1. The keystroke logger 505 extracts the false data from the data entry window as indicated by arrow 510. *Id.* at 11:1–3. Accordingly, the secured entry field 507 defeats two of the methods by which a keystroke logger 505 attempts to extract sensitive information entered by the user of keyboard 501 while still allowing a user to supply the sensitive information the application 503 in the usual manner. *Id.* at 11:4–9.

2. Overview of Ross

Ross relates to a browser extension, PwdHash, that produces a different password for each site and defends against password phishing and other attacks. Ex. 1010, Abstract. The PwdHash browser extension applies a cryptographic hash function to a combination of the plaintext password entered by the user, data associated with the web site, and (optionally) a private salt (*i.e.* random data used as input for a function that hashes data)

stored on the client machine, such that the theft of the password received at one site will not yield a password that is useful at another site. *Id.* Upon detection of either a "password-prefix" (*i.e.*, sequence of printable characters) or a "password-key" (*i.e.,* dedicated keyboard key), the PwdHash browser extension replaces the user-entered password with a hashed version of the password. *Id.* at 4, 6. The hashing can occur at one of two times: (1) replacing the contents of the field with the hashed password when focus leaves the field; or (2) trapping the form submission event and replacing the contents of all password fields with the appropriate hashed passwords. *Id.* at 4.

3. Combination of Waterson and Ross

Petitioner combines Ross's solution for trapping browser form submission events with Waterson's anti-keylogging software in order to provide additional protection against form-grabbing keylogging malware. Pet. 59. Petitioner argues the motivation to combine Ross's form submission event solution with Waterson's anti-keylogging software is to provide an additional level of protection against form grabbing key logging software that Waterson alone may not provide. *Id*. In the combination, Ross's browser helper object solution would provide protection against browser-level, form-grabbing keyloggers, which do not attempt to log keys at the kernel level, and thus, would not be prevented by the kernel-level solution described in Waterson. *Id.*

As argued by Petitioner, both Waterson and Ross address the same problem: defeating malicious software that can steal a user's confidential data. *Id.* at 60. Petitioner further argues that, like the '473 Patent, both Waterson and Ross teach methods for protecting from malware that grab keystrokes out of forms on a web page. *Id.* at 61. As further argued by

Petitioner, a person of ordinary skill in the art would have had a reasonable expectation of success in incorporating the form submission event trap disclosed in Ross into the anti-keylogging software disclosed in Waterson at least because Waterson describes that its software can be incorporated within a local application such as Internet browsing software. *Id.* at 62.

Patent Owner argues Waterson and Ross deal with keyboard-based key loggers and phishing technology, which are different from the technology directed to and claimed in the '473 Patent, such that a person of ordinary skill in the art would not have been motivated to incorporate the teachings of Ross into Waterson. Prelim. Resp. 51. As further argued by Patent Owner, "Ross is directed to detecting browser form submission events in order to populate sensitive data *into* the forms, not *protect* the sensitive data against key logging." *Id*. at 55. Thus, Patent Owner argues a person of ordinary skill in the art would not have been motivated to combine Ross with Waterson because they are not in the same field of endeavor, as Ross is not directed to the field of protection against keylogging malware. *Id*.

We have carefully considered all arguments and supporting evidence regarding the rationale for combining the teachings of Waterson and Ross. At this stage of the proceeding, we find Petitioner provides an adequate reason that a person of skill in the art would have combined the teachings from the cited prior art to arrive at the inventions recited in the challenged claims. A motivation to combine may be found "explicitly or implicitly in market forces; design incentives; the 'interrelated teachings of multiple patents'; 'any need or problem known in the field of endeavor at the time of invention and addressed by the patent'; and the background knowledge, creativity, and common sense of the person of ordinary skill." *ZUP, LLC v.*

Nash Mfg., Inc., 896 F.3d 1365, 1371 (Fed. Cir. 2018) (quoting *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1354 (Fed. Cir. 2013)).

Based on the current record Petitioner argues a person of ordinary skill would have been motivated to combine Waterson's anti-keylogging software with Ross's form submission event solution to provide an additional level of protection against form grabbing key logging software would motivate one or ordinary skill to combine Ross with Waterson. We agree with Petitioner that one of ordinary skill would have recognized that both Ross and Waterson detect forms in a webpage and take steps to protect keystrokes entered into those forms from malware. We credit Dr. McDaniel's testimony in this regard. *See* Ex. 1013 ¶¶ 100–108. We do not agree with Patent Owner that one of ordinary skill would not have been motivated to combine Ross with Waterson because Ross populates data into forms rather than protecting sensitive data against keylogging. *See* Prelim. Resp. 55. Ross discloses a way of protecting sensitive passwords by replacing them with hashed passwords. Ex. 1010, 4. Ross's form submission event solution, therefore aims to protect sensitive data from keylogging just as Waterson does.

4. Analysis of Claims 1, 11, 22 and 26

Petitioner argues the limitations of claims 1, 11, 22 and 26 are similar and presents largely the same evidence and reasoning for these independent claims. *See* Pet. 74–76. Patent Owner's arguments in response are generally directed to claim 1 and intended to apply to the other independent claims. *See* Prelim. Resp. 49–55. Below we analyze Petitioner's allegations with respect to independent claim 1 and Patent Owner's responses thereto.

a) Preamble

Claim 1 recites "[a] method for preventing software key logging executable by a microprocessor." Petitioner argues Waterson teaches software that can prevent keystroke logging software that runs on a computer system which execute software using microprocessors. Pet. 64 (citing Ex. 1009, 1:10–14; Ex. 1013 ¶¶ 109–11). Patent Owner does not explicitly contest Petitioner's arguments regarding the preamble of claim 1.

b) Limitation 1.a

Claim 1 further recites "installing and maintaining an anti-key lodger [sic] at a most privileged access level for browser events in an Application Programming Interface (API) stack." Petitioner argues Waterson teaches anti-keylogging software that can "be installed 'as a stand-alone software application,' or 'as part of the web browser process.'" Pet. 64–65 (citing Ex. 1009, 1:10–14, 11:14–17). According to Petitioner, Waterson's software periodically verifies that it is at the top of the driver priority list and if not replaces itself at the top of the driver priority list by requesting the user to reboot the system. Pet. 65 (citing Ex. 1009, 6:32–38). Petitioner argues that by maintaining itself at the top of the driver priority list, it is also at the top of the Windows API stack, which, according to Petitioner, the '473 Patent recognizes as the most privileged access level. Pet. 65 (citing Ex. 1001, Figs. 1, 3; Ex. 1013 ¶¶ 112–113). Petitioner relies on Ross's disclosure of "form submission events" such as Internet Explorer's BeforeNavigate2 as teaching the claimed "browser events." Pet. 66 (citing Ex. 1010, 4). Petitioner argues the combination of Waterson and Ross therefore teach limitation 1.a.

Patent Owner argues Waterson fails to teach that the installed anti-keylogger is at the most privileged access level because the anti-keylogger is

installed at the kernel level to intercept and mask keystrokes. Prelim. Resp. 52. According to Patent Owner, the masked keystrokes are then delivered to a web browser and then unmasked making them no longer protected by Waterson and not accessed at the most privileged level. Prelim. Resp. 52.

At this stage of the proceeding and on the present record, we are persuaded Petitioner has shown a reasonable likelihood Waterson's teaching that its software periodically verifies that it is at the top of the driver priority list, combined with Ross's teaching of form submission events, teaches limitation 1.a. Patent Owner's argument are directed at the keystrokes that are eventually unmasked at the browser and not protected, but does not sufficiently address Waterson's software maintaining itself at the top of driver priority list.

c) Limitation 1.b

Claim 1 recites "detecting, by the anti-key logger, a browser form submission initiation call event associated with data inputs entered by a user, wherein the form submission initiation call event is an OnSubmit call event or a BeforeNavigate call event." Petitioner relies on Waterson's teaching of activating its anti-keylogging software when a field that requires protection is in focus in combination with Ross's disclosure of trapping the form submission event (called BeforeNavigate2) and then replacing the contents of password fields with hashed passwords to teach limitation 1.b. Pet. 67 (citing Ex. 1009, 11:40–44; Ex. 1010, 4). In the combination, Waterson would activate its anti-keylogger when a form submission event, such as Ross's BeforeNavigate2, is detected. Pet. 67–68.

Patent Owner argues "Waterson discloses that the application to which the masked keystroke data is delivered can be a web browser, but Waterson does not detect web form submission." Prelim. Resp. 53. Patent

Owner also argues "Ross would in no way protect a user's confidential web form data from a form grabbing key logger" because "Ross provides input to the browser, but does not protect the browser input as required by the claimed subject matter." Prelim. Resp. 54. Patent Owner further argues that Ross teaches the opposite of the '473 Patent's "clearing" feature because it populates passwords into the form fields. Prelim. Resp. 54.

At this stage of the proceeding and on the present record, we are persuaded Petitioner has shown a reasonable likelihood that Waterson combined with Ross teaches limitation 1.b as discussed above. Specifically, on the current record, we are persuaded that activating Waterson's anti-keylogging software when a field is in focus and when a form submission event, such as BeforeNavigate2 takes place, as disclosed in Ross, teaches the claimed form submission initiation call event and the claimed BeforeNavigate event.

Patent Owner's argument that Waterson does not detect a web form submission fails to address Petitioner's reliance on Ross's teaching of detecting form submission events. Patent Owner's argument that Ross does not protect the browser input fails to address Waterson's teaching of masking (and therefore protecting) field data. Finally, Patent Owner's argument that Ross teaches the opposite of "clearing" because it populates passwords into fields fails to recognize that Petitioner is not relying on the feature of populating passwords into fields, but rather is relying on Ross for teaching the detection of a form submission event through a BeforeNavigate2 call.

d) Limitation 1.c

Claim 1 recites "submitting the data inputs to a designated entity." Petitioner relies on Waterson's disclosure of "suppl[ying] the unmasked user

input data to the underlying application that is authorised to receive it" as teaching the aforementioned limitation. Pet. 68 (quoting Ex. 1009, 8:48–52). Petitioner argues that this application may be a banking website and "[a]fter a user completes the required 'entry of sensitive information,' the unmasked user inputs are submitted to the designated entity—the bank." Pet. 68 (citing Ex. 1009, 11:28–44; Ex. 1013 ¶¶ 118–119). Patent Owner argues that the designated entity is a website, but Waterson teaches "delivering keystroke data from a keyboard to an application running on the same computer." Prelim. Resp. 52 (citing Ex. 2024 ¶ 83).

At this stage of the proceeding and on the present record, we are persuaded Petitioner has shown a reasonable likelihood that Waterson combined with Ross teaches limitation 1.c as discussed above. Patent Owner's argument that the user input is submitted to an application running on the same computer does not address Petitioner's arguments that the user input would be submitted to an entity, such as a banking website, that is not on the same computer as the anti-keylogger software. *See* Pet. 68 (citing Ex. 1009, 11:28–44; Ex. 1013 ¶¶ 118–119).

e) Limitation 1.d

Claim 1 recites "clearing, by the anti-key logger, confidential data from the data inputs to protect against the threat of key logging malware capturing the confidential data." Petitioner relies on Waterson as teaching that when a user starts to enter data into an entry field, its anti-keylogging software sends a 'random data stream [] which has contaminated the clean data' to the keyboard buffer, which is then passed to the entry field." Pet. 68 (citing Ex. 1009, 10:49–57; Ex. 1013 ¶ 121). In the underlying litigation, the claim term "clearing confidential data" was agreed upon to mean "removing the meaning from confidential data." *See* Pet. 21; Prelim. Resp.

29. Using this construction, Petitioner argues that by contaminating the clean sensitive data with a random data stream, Waterson teaches "removing the meaning form confidential data" for the purpose of protecting against the threat of key logging malware capturing the confidential data. Pet. 69–70.

Patent Owner argues Waterson fails to teach "clearing . . . the data inputs" because "the data inputs" are the web form data inputs. Prelim. Resp. 53. In order to clear these inputs, according to Patent Owner, Waterson would have to access the inputs in the web form. Instead, Waterson masks keystroke data as it travels between the keyboard and the web browser and this data is unmasked by Waterson within the web browser and can be stolen by form grabbing malware at that time. Prelim. Resp. 53 (citing Ex. 2024 ¶ 85).

At this stage of the proceeding and on the present record, we are persuaded Petitioner has shown a reasonable likelihood that by masking confidential data with a random data stream, Waterson teaches "clearing, by the anti-key logger, confidential data from the data inputs to protect against the threat of key logging malware capturing the confidential data." We do not agree with Patent Owner that Waterson does not teach "clearing . . . confidential data from the data inputs" because Waterson does not access the data inputs when they are in the web form. The claim does not limit "data inputs" to be only data in a web form rather than data that is traveling to the web form. Instead, at this stage of the proceeding, we are persuaded that Waterson's teaching of a user inputting data for the sake of populating a web form field (Waterson's entry field) teaches the claimed "data inputs."

5. Claims 2–6, 8–10, 12–17, 19–21, 23–25, and 27–29

Petitioner contends claims 2–6, 8–10, 12–17, 19–21, 23–25, and 27–29 of the '473 Patent are unpatentable under 35 U.S.C. § 103 as obvious

over Waterson and Ross and provides specific arguments for each challenged claim. Pet. 70–77 (citing Ex. 1009, 1:41–44, 4:12–30, 4:53–55, 6:18–31, 6:32–38, 10:38–40, 11:14–19, 11:45–53, 12:1–8, ; Ex. 1013 ¶¶ 126–139, 142–143, 145). Patent Owner relies on similar arguments as the ones discussed above for these claims.

On this record and for purposes of this Decision, we determine Petitioner presents sufficient evidence to establish a reasonable likelihood it would prevail in showing that claims 2–6, 8–10, 12–17, 19–21, 23–25, and 27–29 are obvious over Waterson and Ross.

6. Conclusion

For the reasons explained above and based on the arguments and evidence presented in the Petition, we determine that Petitioner has shown sufficiently that the combination of Waterson and Ross would have taught or suggested each limitation of claims 1–6, 8–17, 19–29 of the '473 Patent for purposes of instituting trial. Based as well on our preliminary determinations as to the level of ordinary skill, discussed above, we conclude on this record that Petitioner has shown a reasonable likelihood of prevailing on this ground of unpatentability.

G. Obviousness over Waterson, Ross, and Geon

1. Overview of Geon

Geon relates to a computer security apparatus and a method using a security input device driver. Ex. 1012, Abstract. Data inputted through a data input unit is directly encrypted at the security input device driver without passing through an operating system ("OS") input device driver supporting in an OS. *Id.* More specifically, a security input interrupt service routine ("ISR") replaces a conventional input ISR, where the security input ISR protects keyboard data. *Id.* at 1:15–19, 5:45–50, 6:11–13. In the

security input ISR, keyboard input data is read from a keyboard buffer through a 60h port, where the keyboard buffer is reset to prevent data from being read through the 60h port. *Id.* at 7:1–17. Further, the keyboard input data is directly encrypted at a security input device driver without passing through an OS input device driver. *Id.* at 7:61–64.

2. Combination of Waterson, Ross, and Geon

Petitioner argues that to the extent the Board finds that Waterson and Ross do not disclose the "clearing" limitation (limitation 1.d) under the construction agreed upon by the parties in the underlying district court litigation, Geon "provides an express disclosure of 'clearing' confidential data under any definition of that term." Pet. 77. Petitioner, therefore, combines Geon's function of clearing user inputted data out of a keyboard buffer with the combined keylogging software of Waterson and Ross in order to provide another level of protection against keylogging malware. Pet. 79. Petitioner argues the motivation to combine Geon's clearing function with the combined keylogging software of Waterson and Ross is to provide additional protection against keylogging malware, for reasons similar to the reasons discussed with respect to Waterson and Ross. *Id.* As argued by Petitioner, Geon, like both Waterson and Ross, teaches anti-keylogging software that provides protection against key logging malware at the keyboard driver level. *Id.* Petitioner further argues that, similar to the '473 Patent, Waterson, and Ross, Geon is directed to preventing capture of sensitive information by malicious keylogging software. *Id.* at 80. As further argued by Petitioner, a person of ordinary skill in the art would have had a reasonable expectation of success in incorporating the clearing function described in Geon into the Waterson/Ross system because both Geon and Waterson describe sending dummy data to the keyboard buffer.

Id. According to Petitioner, one of ordinary skill in the art would have understood that Geon's Clearbuffer function would have been desirable to incorporate into Waterson to empty out the keyboard buffer after data input is complete, thereby increasing security. Pet. 83.

Patent Owner argues Geon is directed to a type of protection against keyboard-based keyloggers, and not protection against form grabbing keyloggers. Prelim. Resp. 56. Patent Owner argues a person of ordinary skill in the art would not be motivated to rely on Geon to "cure the deficiencies of Waterson and Ross for purposes of buffer-clearing software as suggested by Petitioner." *Id.* Patent Owner further argues Geon, like Ross, is not in the same field of endeavor, nor is it directed toward similar techniques or developed to solve similar problems. *Id.* at 56–57. As further argued by Patent Owner, a person of ordinary skill in the art would not have had a reasonable expectation of success in incorporating the clearing disclosed in Geon into "an invention derived from the combination of Waterson and Ross." *Id.* at 57. Finally, Patent Owner argues Geon's disclosure of "clearing a keyboard buffer—by sending 'dummy data' to the port—to prevent data from being read from the keyboard input buffer (Pet., 79) is inconsistent with the claimed subject matter of the '473 Patent." Prelim. Resp. 57.

We have carefully considered all arguments and supporting evidence regarding the rationale for combining the teachings of Geon with Waterson and Ross. At this stage of the proceeding, we find Petitioner provides an adequate reason that a person of skill in the art would have combined the teachings from the cited prior art to arrive at the inventions recited in the challenged claims. Based on the current record Petitioner combines Geon's function of clearing user inputted data out of a keyboard buffer with

Waterson's keylogging software in order to provide another level of protection against keylogging malware. Pet. 79 (citing Ex. 1013 ¶ 148). Petitioner argues a person of ordinary skill would have been motivated to combine Geon with Waterson and Ross to address the principle of "complete mediation" thereby making every use of security-sensitive interface, such as a keyboard, protected. Pet. 59, 79; Ex. 1013 ¶ 102. Given that both Geon and Waterson are directed to preventing capture of sensitive information by malicious keylogging software, we agree with Petitioner that one or ordinary skill in the art would have been motivated to use Geon's buffer clearing function to provide additional keystroke protection. *See* Pet. 80 (citing Ex. 1013 ¶ 149).

We disagree with Patent Owner that Geon and Ross are not in the same field of endeavor as each other or as the '473 Patent, even if, as Patent Owner alleges, Ross is directed to keyboard based anti-keylogger rather than form grabbing keyloggers. Instead we agree with Petitioner that Geon is directed to systems for protection against malware commonly used in identity theft and cyber fraud such as malicious key logging software, similar to the '473 Patent, Ross, and Waterson.

3. Analysis of Claims 1, 11, 22, and 26

For its arguments regarding independent claims 1, 11, 22, and 26 as obvious over Waterson, Ross, and Geon, Petitioner relies largely on the same arguments set forth above regarding claims 1, 11, 22, and 26 as obvious over Waterson and Ross. *See* Pet. 83, 85. Petitioner cites to Geon, however, for teaching "clearing, by the anti-key logger, confidential data from the data inputs to protect against the threat of key logging malware capturing the confidential data," as recited in claim 1. Pet. 83–84. As explained above, Petitioner relies on Geon for an express teaching of the

"clearing" limitation that it argues would teach the limitation under any definition of that term, not just the one agreed upon by the parties in the underlying litigation. Pet. 77.

Patent Owner argues that Geon does not perform either: (1) the claimed "clearing" as Geon discloses clearing data from a keyboard and not a web form; or (2) the claimed "submitting" as Geon only addresses submitting data inputs to an application program. Prelim. Resp. 57–58.

At this stage of the proceeding and on the present record, we are persuaded of a reasonable likelihood that Geon's buffer clearing function combined with Waterson and Ross teaches the claimed "clearing, by the anti-keylogger, confidential data from the data inputs to protect against the threat of key logging malware capturing the confidential data." We disagree with Patent Owner that because Geon discloses clearing data from a keyboard and not a web form, it does not teach the claimed "clearing" step. As explained above, we are persuaded at this stage of the proceeding that Waterson's teaching of a user inputting data for the sake of populating a web form field (Waterson's entry field) teaches the claimed "data inputs" even if the data is in the keyboard buffer before reaching the web form. We also disagree with Patent Owner's argument that Geon only addresses submitting data input to an application program, because Waterson teaches sending data to an entity, such as a banking website, that is not on the same computer as the anti-keylogger software. *See* Pet. 68 (citing Ex. 1009, 11:28–44; Ex. 1013 ¶¶ 118–119).

4. Claims 2–6, 8–10, 12–17, 19–21, 23–25, and 27–29

Petitioner contends claims 2–6, 8–10, 12–17, 19–21, 23–25, and 27–29 of the '473 Patent are unpatentable under 35 U.S.C. § 103 as obvious over Waterson, Ross, and Geon and provides specific arguments for each

challenged claim, relying on the same evidence and reasoning as those relied upon in the previous grounds. *See* Pet. 84–85. Patent Owner relies on many of the same arguments as discussed previously.

On this record and for purposes of this Decision, we determine Petitioner presents sufficient evidence to establish a reasonable likelihood it would prevail in showing that claims 2–6, 8–10, 12–17, 19–21, 23–25, and 27–29 are obvious over Waterson, Ross, and Geon.

5. Conclusion

For the reasons explained above and based on the arguments and evidence presented in the Petition, we determine that Petitioner has shown sufficiently that the combination of Waterson, Ross, and Geon would have taught or suggested each limitation of claims 1–6, 8–17, 19–29 of the '473 Patent for purposes of instituting trial. Based as well on our preliminary determinations as to the level of ordinary skill, discussed above, we conclude on this record that Petitioner has shown a reasonable likelihood of prevailing on this ground of unpatentability.

III. CONCLUSION

For the foregoing reasons and on the present record, we determine that the information presented in the Petition demonstrates a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one of the challenged claims of the '473 Patent.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of the '473 Patent is hereby instituted commencing on the entry date of this Decision, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; and

FURTHER ORDERED that the *inter partes* review is instituted on all challenged claims on all grounds of unpatentability asserted in the Petition.

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