UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte CLARK DEBS JEFFRIES and MOHAMMAD PEYRAVIAN

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Appeal 2016-007686
Application 13/495,210
Technology Center 2400

———————

Before CAROLYN D. THOMAS, BRUCE R. WINSOR, and
IRVIN E. BRANCH, *Administrative Patent Judges.*

WINSOR, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants[1] appeal under 35 U.S.C. § 134(a) from the final rejection
of claims 13–27, which constitute all the claims pending in this application.
We have jurisdiction under 35 U.S.C. § 6(b).

    We affirm.

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[1] The real party in interest identified by Appellants is International Business
Machines Corporation. App. Br. 3.

STATEMENT OF THE CASE

Appellants' disclosed "invention relates generally to computer security and, more particularly, to denial of service ["DoS"] attacks." Spec. ¶ 1. Claim 13, which is illustrative, reads as follows:

13. A method for protecting a server against denial of service attacks, comprising:

maintaining, by a server having a processing device, a window over a sequence number space, the sequence number space including sequence numbers that are sequentially assigned by the server to respective challenge messages issued by the server for verifying legitimate requests for service, the window comprising a leading edge sequence number and a trailing edge sequence number;

receiving a request;

determining a challenge message should be sent;

selecting the leading edge sequence number as a challenge sequence number;

assigning the challenge sequence number to a challenge message;

assigning a problem to the challenge message;

sending the challenge message, wherein the challenge message comprises the problem and the challenge sequence number;

receiving a response message, wherein the response message comprises a solution to the problem and the challenge sequence number;

discarding the response message if the challenge sequence number is not within the window;

discarding the response message if the solution is not correct; and

performing a session if the response message is not discarded.

Claims 13–27 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. *See* Final Act. 2–4.

Claims 13–21 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to patent-ineligible subject matter. *See* Final Act. 4.

Claims 13–27 stand rejected under 35 U.S.C. § 103(a)[2] as being unpatentable over Bleichenbacher et al. ("Bleichenbacher,") (US 7,143,163 B1; issued Nov. 28, 2006; filed July 26, 2000). *See* Final Act. 5–10.

Rather than repeat the arguments here, we refer to the Briefs ("App. Br." filed [date]; "Reply Br." filed [date]) for the positions of Appellants ; the Final Office Action ("Final Act." mailed [date]) and Examiner's Answer ("Ans." mailed [date]) for the reasoning, findings, and conclusions of the Examiner; and the Specification ("Spec." filed [date]). Only those arguments actually made by Appellants have been considered in this decision. Arguments that Appellants did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2015).

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[2] All prior art rejections are under the provisions of 35 U.S.C. in effect prior to the effective date of the Leahy-Smith America Invents Act of 2011 ("pre-AIA"). Final Act 2.

REJECTION UNDER 35 U.S.C. § 112

Issue

The issue presented by Appellants' arguments is whether the Examiner errs in concluding the recitation of "discarding the response message if the challenge sequence number is not within the window" renders claim 13 is indefinite for failing to "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention," 35 U.S.C. § 112, 2d paragraph.

Analysis

Although based on underlying questions of fact, the ultimate question of indefiniteness is a question of law that is reviewable *de novo. See Nautilus, Inc., v. Biosig Instruments, Inc.,* 134 S.Ct. 2120, 2130 n.10 (2014); *In re Packard,* 751 F.3d 1307, 1311 (Fed. Cir. 2014). Language in a claim is unclear if it is "ambiguous, vague, incoherent, opaque, or otherwise unclear in describing and defining the claimed invention . . . ," *Packard,* 751 F.3d at 1311, or if it is "is amenable to two or more plausible claim constructions . . . ," *Ex parte Miyazaki,* 89 USPQ2d 1207, 1211 (BPAI 2008) (precedential); *see also Ex parte McAward,* 2017 WL 3669566 (PTAB 2017) (precedential) (discussing the test for indefiniteness during prosecution and affirming *Miyazaki*'s continued precedential status (at *2, n.3)).

The Examiner explains that the step of "discarding the response message if the challenge sequence number is not within the window," recited in claim 13 will never occur. Final Act. 3. The Examiner reaches this conclusion by applying the usual conventions of antecedent basis in claim construction. *Id.* We agree with this analysis, as far as it goes. Claim 13 recites "the window comprising *a* leading edge sequence number,"

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"selecting *the* leading edge sequence number as *a* challenge sequence number[, and] assigning *the* challenge sequence number to a challenge message" (emphases added). Thus, the claim recites that the "challenge sequence number" and the "leading edge sequence number are the *same* number and that number is *within the window*. The claim further recites that "the response message comprises . . . *the* challenge sequence number," i.e., the *same* number that is within the window. There is no recitation in the claim of the numbers that comprise the window changing in such a way as to not comprise the "leading edge sequence number"/"challenge sequence number." Therefore, the Examiner's claim construction is plausible.

Appellants contend that, when read in light of Appellants' Specification, the "window" recited in claim 13 shifts with the sending of challenge messages and the receiving of response messages, with the "leading edge sequence number" shifting with the sending of challenge messages, and the "trailing edges sequence number" shifting with the receipt of a response messages. App. Br. 7–8 (citing Spec. ¶¶ 26–30). Therefore, Appellants argue, the "challenge sequence number" may or may not lie within the window as it exists when the response message is received. *Id.* In other words, Appellants assert that it is a plausible claim construction, indeed that it is the correct claim construction, to ignore usual principles of antecedent basis and treat the recited "leading edge sequence number" as potentially changing between the sending of the challenge message and the receipt of a corresponding response message. Although Appellants' claim construction appears to improperly import un-recited limitations into the claims (*see In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993), Appellants' specification explains that when challenge messages are sent,

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the leading edge of the window advances by one, and when response message is received, the window shrinks the trailing edge by one (see Spec. ¶¶ 26-30), i.e., a shifting effect. Therefore, we accept, *arguendo*, that Appellants' asserted claim construction is plausible.

Even accepting Appellants' argued claim construction as plausible, however, we are faced with a claim that "is amenable to two or more plausible claim constructions," *Miyazaki*, 89 USPQ2d at 1211, and is, therefore, indefinite. Independent claims 22 and 25 recite substantially similar limitations and are indefinite for the same reasons as claim 13. Claims 14–21, 23, 25, 26, and 27 variously depend, directly or indirectly, from claims 12, 22, and 25 and inherit the indefiniteness of the claim from which they depend. Accordingly, we sustain the rejection of claims 13–27 for indefiniteness.

REJECTION UNDER 35 U.S.C. § 101

Issue

The issue presented by Appellants' arguments is whether the Examiner errs in concluding that claim 13 is patent-ineligible under 35 U.S.C. § 101 because it is directed to an abstract idea without significantly more.

Analysis

Patent eligibility is a question of law that is reviewable *de novo*. *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1333 (Fed. Cir. 2012). To be statutorily patentable, the subject matter of an invention must be a "new and useful process, machine, manufacture, or composition of matter, or [a] new and useful improvement thereof." 35 U.S.C. § 101. The Supreme Court has

held that there are implicit exceptions to the four categories of patentable
subject matter identified in § 101, including (1) laws of nature, (2) natural
phenomena, and (3) abstract ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*,
134 S. Ct. 2347, 2355 (2014). Further, the Court has "set forth a framework
for distinguishing patents that claim [1] laws of nature, [2] natural
phenomena, and [3] abstract ideas from those that claim patent-eligible
applications of those concepts." *Id.*, citing *Mayo Collaborative Services v.
Prometheus Laboratories, Inc.*, 132 S. Ct. 1289 (2012). The evaluation
follows the two-part analysis set forth in *Mayo*: (1) determine whether the
claim is directed to a patent-ineligible concept, e.g., an abstract idea; and
(2) if an abstract idea is present in the claim, determine whether any element,
or combination of elements, in the claim is sufficient to ensure that the claim
amounts to significantly more than the abstract idea itself. *See Alice*, 134 S.
Ct. at 2355.

Claim 13 is directed to "[a] method for protecting a server against
denial of service attacks." A "method" falls within the definition of a
"process," as that term is used in used in 35 U.S.C. § 101. 35 U.S.C.
§ 100(b) ("The term 'process' means process art or method."). Therefore,
claim 13, and its dependent claims, is directed to one of the four statutory
classes of subject matter. We next consider whether claim 13 is directed to a
judicial exception, i.e. an abstract idea under the first step of the *Alice*
framework.

The Examiner finds claim 13 is "directed to the abstract idea of
assigning numbers to challenge messages and the sending and receiving of
said challenge messages." Final Act. 4. The Examiner discounts the
recitation of the "server having a processing device" as "simply a reference

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to a generic computing device that stores sequence numbers." *Id.* The
Examiner further explains that the "recited steps (i.e. the 'receiving',
'determining', 'selecting', 'assigning', etc[.] . . .) are all entirely
disembodied from any particular machine", and "could broadly be
performed within the mind or implemented simply as an activity between
humans, without the involvement of any particular computer or machine."
Ans. 9.

Appellants contend that "[c]laim 13 is necessarily rooted in computer
technology to overcome a problem specifically arising in a server
responding to requests for service and guarding against denial of service
attacks." App. Br. 12. We agree with Appellants.

In applying the first step of the *Alice* analysis "[w]e must first
determine whether the claims at issue are directed to a patent-ineligible
concept," such as an abstract idea. *Alice*, 134 S. Ct. at 2355. "[T]he
'directed to' inquiry applies a stage-one filter to claims, considered in light
of the specification, based on whether 'their character as a whole is directed
to excluded subject matter.'" *Enfish, LLC v. Microsoft Corp.*, 822 F.3d
1327, 1335 (Fed. Cir. 2016) (quoting *Internet Patents Corp. v. Active
Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)).

The Specification discloses that a goal of the claimed invention is to
provide "a countermeasure solution for protecting servers against DoS
attacks that enables victim servers to sustain service availability during such
attacks." Spec. ¶ 3. In response to a request to initiate a session between a
client and the server, the server sends a challenge message to the requesting
client that includes a sequence number and a challenge problem. Spec. Fig.
5. The server only initiates the session if the client responds with the

correct answer to the problem and with a sequence number that falls within a range of sequence number (i.e., a "window") that indicates that the response associated with a recent request. *Id.* The Specification describes the invention's advantages as follows:

> Generally, the system 100 is directed to a generic front-end solution for protecting against Dos attacks. The system 100 is typically light weight and does not require changes to existing protocols, and does not require the use of cryptographic techniques. Moreover, it does not require the server 190 to perform computationally intensive operations and maintain state information about individual requests from clients. The server 190 leaves the burden on the client to prove its legitimacy (through the disclosed front-end protocol) before agreeing to engage in session establishment.

Spec. ¶ 35.

In other words, Appellants' invention provides a countermeasure solution for protecting servers against DoS attacks by requiring the client to provide a correct solution to a problem, otherwise discarding the request thereby sustaining service availability. The *Enfish* court explained that "[t]he Supreme Court has suggested that claims 'purport[ing] to improve the functioning of the computer itself,' or 'improv[ing] an existing technological process' might not succumb to the abstract idea exception." *Enfish*, 822 F.3d at 1335 (citing *Alice*, 134 S.Ct. at 2358–59). Claim 13 is directed to an improved method of preventing a DoS attack, and purports to improve an important aspect of server functionality/availability. Like the claims for a self-referential database table at issue in *Enfish*, claim 13 is directed to "an improvement [in] computer functionality itself, not [to] an economic or other [process] for which the computer is used in its ordinary capacity" as a tool.

Enfish, 822 F.3d at 1336. Therefore, claim 13 is not directed to an abstract idea.

Because we hold that claim 13 is not directed to a patent-ineligible concept (i.e., abstract idea) under the first step of the *Alice* analysis, we do not reach the second step of the *Alice* analysis. *Enfish*, 822 F.3d at 1339 (citing *Alice*, 134 S. Ct. at 2355).

Accordingly, we do not sustain the rejection of claim 13, and claims 14–21, which depend form claim 13, as being directed to a patent-ineligible abstract idea.

REJECTION UNDER 35 U.S.C. § 103
CLAIMS 13 AND 16–19
Issues

The issues presented by Appellants' arguments are as follows:

Does the Examiner err in finding that Bleichenbacher teaches or suggests

> maintaining . . . a window over a sequence number space, the sequence number space including sequence numbers that are sequentially assigned by the server to respective challenge messages issued by the server for verifying legitimate requests for service, the window comprising a leading edge sequence number and a trailing edge sequence number

(the "window" limitation) as recited in claim 13?

Does the Examiner err in finding Bleichenbacher teaches or suggests "discarding the response message if the challenge sequence number is not within the window" (the "sequence number discarding limitation"), as recited in claim 1?

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Analysis

The Window Limitation

The Examiner finds Bleichenbacher teaches the window limitation, presenting two alternative mappings. Final Act. 5–6 (citing Bleichenbacher col. 9, ll. 18–40). We note that the window limitation, by analogy to a physical window, represents an identifiable subset of the entire sequence number space. *See* RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE 2177 (2d ed. unabr. 1987). The Examiner's first mapping (Final Act. 5–6), in which the recited "window" is effectively mapped to be coextensive with the entire "sequence number space" (claim 13) (*see* App. Br. 15–16; Reply Br. 10), gives no effect to the term "window," and so we do not rely on this mapping. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970) ("All words in a claim must be considered in judging the patentability of that claim against the prior art."). Regarding the second alternative mapping, Examiner explains that "Bleichenbacher discloses a space of sequence numbers beginning from a pointer value (i.e. 'leading edge sequence number') and ending at the last index number within the database (i.e. 'trailing edge sequence number')." Final Act. 6.

Appellants contend that Bleichenbacher does not disclose the window limitation because Bleichenbacher discloses pointers, rather than sequence numbers, and does not maintain a window over the pointers. App. Br. 15. Appellants' arguments are not persuasive of Examiner error.

The application of prior art references to a claim is not an *ipsissimis verbis* test. *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990). Bleichenbacher's pointers are sent in challenge messages to a client requesting service along with a problem to be solved by the client and are

assigned sequentially to the challenge messages, being incremented after each problem is sent. Bleichenbacher col. 9, ll. 35–37. We find Bleichenbacher's pointers teach the recited "sequence numbers." Furthermore, Bleichenbacher's pointers each point to a particular problem in a database of problems corresponding solutions (*id.* col. 9, ll. 23-24), thereby teaching a "sequence number space."

As pointed out by the Examiner, the "window" is broadly recited, with the only specific parameters being the "leading edge sequence number" and "trailing edge sequence number." *See* Ans. 11. The Examiner maps Bleichenbacher's pointer to be assigned to the next challenge messages to the "leading edge sequence number." Final Act. 6. Claim 13 similarly describes the "leading edge sequence number" as the value to be assigned to the next challenge message ("selecting the leading edge sequence number as a challenge sequence number").

The Examiner maps the "trailing edge sequence number" to the pointer for the first entry in the problem solution database. Final Act 6. Appellants contend this mapping is incorrect because "the 'end of the sequence' that the Examiner appears to correspond to the last entry in the database would not be the 'trailing edge sequence number' because the pointer in Bleichenbacher wraps to the beginning entry after the last entry." App. Br. 16; see Bleichenbacher col. 9. ll. 33–40. As best, we understand Appellants' argument to contend that the "leading edge sequence number" and the "trailing edge sequence number" cannot be the same. Although, as a general matter of claim construction, different elements of a claim must be mapped to different elements in the prior art, *see Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) ("Where a

claim lists elements separately, the clear *implication* of the claim language is that those elements are distinct components of the patented invention." (emphasis added)), here Appellants' Specification discloses that under certain conditions the "leading edge sequence number" and the "trailing edge sequence number" have the same value. *See* Spec. ¶ 27 ("Initially, when the server 190 boots up and assigns 0 to SeqNo for the first ChallengeMessage, the server 190 sets the trailing edge and the leading edge of the window to 0.").

For the foregoing reasons, we are not persuaded the Examiner erred in finding Bleichenbacher teaches the window limitation of claim 13.

The Sequence Number Discarding Limitation

The Examiner concedes that "Bleichenbacher does not appear to disclose *discarding the response message if the challenge sequence number is not within the window*" (Final Act. 7), but concludes that as a matter of claim construction the sequence number discarding limitation would never be performed, and therefore cannot distinguish the claimed invention from Bleichenbacher's teaching (*id.*). We do not rely on the Examiner's claim construction because, *inter alia*, it represents only one of two plausible claim constructions, as discussed in more detail *supra*. Nonetheless, with regard to claim 13, we do agree that as a matter of claim construction that the sequence number discarding limitation cannot distinguish over Bleichenbacher.

Claim 13 is a "method" or process claim. "Unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one. However, such a result can ensue when the method steps implicitly require that they be performed in the order written." *Interactive*

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Gift Express, Inc. v. Compuserve Inc., 256 F.3d 1323, 1342-43

(Fed.Cir.2001) (citations omitted).

> *Interactive Gift* recites a two-part test for determining if the
> steps of a method claim that do not otherwise recite an order,
> must nonetheless be performed in the order in which they are
> written. First, we look to the claim language to determine if, as
> a matter of logic or grammar, they must be performed in the
> order written. If not, we next look to the rest of the
> specification to determine whether it "directly or implicitly
> requires such a narrow construction."

Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1370 (Fed. Cir. 2003) (citing

Interactive Gift at 1343).

Claim 13 recites two "discarding" steps, the step described by the

sequence number discarding limitation, and the step of "discarding the

response message if the solution [to the problem in the challenge message] is

not correct" (the "solution discarding limitation,"). Although claim 13

recites the sequence number discarding limitation before the solution

discarding limitation, and Appellants' disclosed preferred embodiment

performs the steps in that order (*see* Spec. Fig. 5 (items 570, 575)), nothing

in the logic or grammar of the claim or in Appellants' Specification, requires

that the steps be performed in that order. Indeed, Appellants' Figure 5

would function in exactly the same way if the order of the discarding steps

were reversed. Therefore, claim 13 encompasses a method in which the step

of the solution discarding limitation is performed before the step of the

sequence number discarding limitation.

Both discarding limitations occur only if a condition precedent is met,

and are, therefore conditional limitations, each with two alternative

outcomes (i.e., the message is either discarded or not discarded). According

to our precedent, as a matter of claim construction, the broadest reasonable

interpretation of a method incorporating a conditional limitation encompasses a method in which only one of the alternative paths of the conditional limitation is performed. *See Ex parte Schulhauser*, Appeal No. 2013-007847, 2016 WL 6277792, at *3–5 (PTAB Apr. 28, 2016) (precedential).

Therefore, the broadest reasonable interpretation of claim 13 encompasses a method in which the step of the solution discarding limitation is performed first and determines that the problem solution is *not* correct, thereby causing the response message to be discarded. In this event neither the step of the sequence number discarding limitation or the step of "performing a session if the response message is not discarded" is required to meet the limitations of the claim.

Therefore, as to claim 13, Appellants arguments regarding Bleichenbacher failure to teach the sequence number discarding limitation are unavailing. *See* App. Br. 16–17; Reply Br. 10–11.

Summary

For the foregoing reasons, this record does not demonstrate error in the Examiner's rejection of independent claim 13. Accordingly, we sustain the rejection under 35 U.S.C. § 103(a) of claim 13 and claims 16–19, which depend, directly or indirectly, from claim 13, and were not separately argued with particularity.

CLAIMS 22– 27

Issues

Appellants argue the patentability of claims 22 and 25 by relying on the arguments made for claim 13. App. Br. 18; Reply Br. 11–12. Therefore,

the issues presented by Appellants' arguments regarding claims 22 and 25 are the same, *mutatis mutandis*, as presented for claim 13.

Analysis

The Window Limitation

Appellants' arguments regarding the window limitation are unpersuasive of Examiner error for the same reasons as discussed above regarding claim 13.

The Sequence Number Discarding Limitation

Claim 22 is directed to a "computer readable storage device" that embodies "computer code" to perform certain functions including the sequence number discarding limitation. Claim 25 is directed to a "system comprising a processor coupled to a non-transitory computer readable medium storing a computer program" that comprises computer code to perform certain functions including the sequence number discarding limitation. As such, but claims are directed to apparatus, i.e., machines, or articles of manufacture. The broadest reasonable interpretation of an apparatus claim with structure that performs a function that need only occur if a condition precedent is met, still requires structure for performing the function should the condition occur. *See Schulhauser*, 2016 WL 6277792, at *3–5. Therefore, our interpretation of apparatus claims 22 and 25 differs from method claim 13 because the structure, namely the computer code configured to perform the recited functions, is present in the apparatus regardless of whether the conditional limitation is met and the function is actually performed.

The Examiner concedes that "Bleichenbacher does not appear to disclose *discarding the response message if the challenge sequence number*

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is not within the window" (Final Act. 7). The Examiner presents two alternative explanations to fill the gap in Bleichenbacher's disclosure. First, the Examiner concludes, as a matter of claim construction, it is not necessary to show that the sequence number limitation is taught by Bleichenbacher. *Id.* We disagree, because in an apparatus claim, such as claims 22 and 25, it is necessary to show that the all claimed structures (whether or not claimed functionally) are taught or suggested by the prior art, regardless of whether the recited structure will be used in a particular instance of operation. *See Schulhauser,* 2016 WL 6277792, at *3–5.

> In the alternative, the Examiner concludes as follows:

> [O]ne of ordinary skill would have recognized that the server of Bleichenbacher should discard a message from a client that comprises an invalid index number, such as a number that was not within the database. This would have been obvious because one of ordinary skill in the art would have been motivated by logic to recognize that if the server received invalid data which could not be used for the server's intended purpose of establishing a session, then it would be of no value and should be discarded or ignored.

Final Act. 7–8 (citing Bleichenbacher col. 10, ll. 7–11).

> Appellants contend the Examiner's reasoning is faulty for the following reasons:

> First, the Examiner offers no definition of a "valid" pointer as opposed to an "invalid" pointer. Second, as indicated above, there is no reason in Bleichenbacher to determine whether a pointer is "valid" because if a solution in the database using the pointer that the client provides does not match the solution provided by the client, access will not be granted.

App. Br. 17. We agree with Appellants.

> The Examiner's conclusion is based on construing the "window" over the "sequence number space" to be coextensive with the "sequence number

space," a claim construction that improperly reads "window" out of the claim, as discussed *supra*. We find no teaching in the cited passages of Bleichenbacher of determining whether or not a returned pointer value falls within any window of pointer values and no reason why a person of ordinary skill in the art would find Bleichenbacher's teaching of discarding messages that fail to correctly solve the challenge problem to be inadequate protection for the server. We only find this concept in Appellants' Specification. Thus, we conclude the Examiner's articulated rationale is an exercise in impermissible hindsight. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) ("A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.").

Summary

For the foregoing reasons, Appellants have demonstrated error in the Examiner's rejection of independent claims 22 and 25. Accordingly, we do not sustain the rejection under 35 U.S.C. § 103(a) of claims 22 and 25 and claims 23, 24, 26, and 27, which variously depend, directly or indirectly, from claims 22 and 25.

CLAIMS 14 AND 15

Issue

The issue presented by Appellants' arguments is whether the Examiner errs in finding Bleichenbacher teaches or suggests "determining a challenge message should be sent comprises determining a request count does not exceed a threshold session count, and wherein the sending the challenge message comprises incrementing the request count" (the "threshold limitation"), as recited in claim 14.

Analysis

The Examiner finds Bleichenbacher teaches or suggests the threshold

limitation. Final Act 8 (citing Bleichenbacher col. 1, ll. 56–67, col. 9, ll. 49–

55, col. 11, ll. 27–33.) The Examiner explains as follows:

> [T]he determination to send a specific challenge message is
> based on whether an incremented request number ("request
> count") exceeds a threshold (a "threshold session count").
> Specifically, Bleichenbacher clearly teaches that adjusting the
> complexity enables the server to regulate (i.e. place a limit
> upon) the number of connections by a single client. The
> examiner notes that the stated purpose of Bleichenbacher is to
> prevent a client from overloading a server with illegitimate
> requests, thus it would have been obvious to one of skill in the
> art to logically recognize that if a single client did not yet solve
> his/her initial problem, then the sever should not send him/her
> another one to solve.

Id. (citations omitted).

Appellants contend as follows:

> Bleichenbacher appears to disclose that the problems in
> Bleichenbacher may be dynamically adjusted with respect to
> computation time based on the number and interval of requests.
> (Bleichenbacher, column 9, lines 47-58). Thus, Bleichenbacher
> does not disclose determining a challenge should be sent based
> on a request count not exceeding a threshold session count. To
> the contrary, Bleichenbacher appears to disclose that a
> challenge is always sent, just the level of computation required
> for a response can vary.

App. Br. 19. We agree with Appellants for the reasons stated by Appellants.

The Examiner mistakenly conflates the selection of a problem to be

sent in a challenge message, i.e., determining the content of a challenge

message to be sent, with "determining a challenge message should be sent,"

i.e. determining whether to send a message at all. We find no teaching or

suggestion in the cited passages of Bleichenbacher of any use of a threshold to "determin[e] a challenge message should be sent."

Appellants have demonstrated error in the Examiner's rejection of claim 14. Accordingly, we do not sustain the rejection under 35 U.S.C. § 103(a) of claim 14 and claim 15, which depends from claim 14.

CLAIMS 20 AND 21

Issue

The issue presented by Appellants' arguments is whether the Examiner errs in finding Bleichenbacher teaches or suggests "computing an index based on a number of entries in a problem-solution table and the challenge sequence number; and selecting the problem based on the index" (the "computing limitation"), as recited in claim 20.

Analysis

The Examiner finds Bleichenbacher teaches the computing limitation. Final Act. 10 (citing Bleichenbacher col. 9, ll. 25–27, col. 10, ll. 38–40). Appellants contend "Bleichenbacher uses a pointer to select a problem from a database, and then the pointer gets incremented to the next value. Bleichenbacher does not disclose, nor would it be obvious to so modify Bleichenbacher, computing an index based on a number of entries in a problem-solution table for selecting a problem from the table." App. Br. 19. We disagree with Appellants' argument.

Bleichenbacher teaches using a pointer to select a problem from Bleichenbacher's database. Bleichenbacher col. 9, ll. 25–27. We conclude that Bleichenbacher's pointer is encompassed within the broadest reasonable interpretation of an index used as a basis for selecting a problem. In explaining how Bleichenbacher's pointer is determined, Bleichenbacher

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teaches that the pointer is incremented with each problem sent. Bleichenbacher col. 9, ll. 35–37 (cited at Final Act. 5). In other words, the pointer (i.e. "index") is computed based on the challenge sequence number. We note that equating the index to the challenge sequence number falls within the broadest reasonable interpretation of "computing" the index based on the challenge sequence number. As acknowledged by Appellants, Bleichenbacher further explains that "[i]f the pointer exceeds the number of entries in the database, the pointer wraps back to the beginning entry of the database." Bleichenbacher col. 9, ll.38–40; *see* App. Br. 15. In other words, Bleichenbacher teaches that the pointer (i.e., "index") is computed based on the number of entries in Bleichenbacher's database (i.e., the "problem solution table.").

This record does not demonstrate error in the Examiner's rejection of claim 20. Accordingly, we sustain the rejection under 35 U.S.C. § 103(a) of claim 20 and claim 21, which depends from claim 20 and was not separately argued with particularity

DECISION

The rejection of claims 13–27 under 35 U.S.C. § 112, second paragraph is affirmed.

The rejection of claims 13–21 under 35 U.S.C. § 101 is reversed.

The rejection of claims 13 and 16–21 under 35 U.S.C. § 103(a) is affirmed.

The rejection of claims 14, 15, and 22–27 is reversed.

Because the rejection of every pending claim is affirmed on at least one ground of rejection, the Examiner's decision to reject claims 13–27 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1). *See* 37 C.F.R. §§ 41.50(f), 41.52(b).

AFFIRMED