

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

NOBOTS LLC,
Patent Owner.

IPR2022-00941
Patent 10,423,885 B2

Before JOSIAH C. COCKS, LYNNE E. PETTIGREW, and
BARBARA A. PARVIS, *Administrative Patent Judges*.

COCKS, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Petitioner Google LLC filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–20 (“the challenged claims”) of U.S. Patent No. 10,423,885 B2 (Ex. 1001, “the ’885 patent”). Patent Owner Nobots LLC filed a Preliminary Response (Paper 7, “Prelim. Resp.”). In that Preliminary Response, Patent Owner indicates that claims 1, 2, 10, and 12 have been disclaimed under 35 U.S.C. § 253(a). Prelim. Resp. 2 (citing Ex. 2103).¹ Accordingly, only claims 3–9, 11, and 13–20 are now pertinent to this proceeding. *See* 37 C.F.R. § 42.107(e).

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition shows that “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); *see also* 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”).

A decision to institute under § 314 may not institute on fewer than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). In addition, if the Board institutes trial, it will “institute on all grounds in the petition.” PTAB Consolidated Trial Practice Guide, 5–6 (Nov. 2019); 37 C.F.R. § 42.108(a); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”).

¹ Exhibit 2103 is titled “Disclaimer in Patent Under 37 CFR 1.321(a)” and indicates that claims 1, 2, 10, and 12 of the ’885 patent have been disclaimed. *See* Ex. 2103.

Having considered the arguments and evidence presented by the parties, for the reasons set forth below, we institute *inter partes* review.

A. Related Matters

The parties state that the '885 patent was asserted in *Nobots LLC v. Google LLC*, Civil Action No. 6:21-cv-01290 (W.D. Tex., Waco Division). Pet. xii; Paper 5, 1.² Patent Owner further states that the '885 patent was asserted in *Nobots LLC v. Google LLC*, No. 1:22-cv-00585 (W.D. Tex., Austin Division). Paper 6, 1. Patent Owner also identifies IPR2022-00940 as a related proceeding. Paper 6, 1.³

B. The '885 Patent

The '885 patent is titled “Systems, Methods and Apparatus for Evaluating Status of Computing Device User.” Ex. 1001, code (54). The Abstract of the '885 patent is reproduced below:

Methods, systems and apparatus for assessing the likely status of an operator of a computing device interacting with a server as a human operator or an autonomic computer application, such as a “bot” are described herein. By monitoring at least some data, e.g., biometric data, generated at the client computing device, a comparison can be made between the monitored data and model data relating to human interaction with the computing device. The results of the comparison can lead to a value that represents the likelihood that the monitored data results from human interaction.

Id. at code (57).

² In its filing of updated mandatory notices, Patent Owner indicates that the noted proceeding is “now terminated.” Paper 6, 1.

³ The Petition in IPR2022-00940 was filed on the same day as the Petition in the instant proceeding, and involves a related patent (U.S. Patent No. 9,595,008 B1).

The '885 patent further summarizes its disclosure as being “for assessing the likely user status of a computing device interacting with a server where computing device is in bi-directional operative communication with the server wherein the status is one of a human operator or a computer executable program (also referred to herein as a ‘bot’).” *Id.* at 2:18–24.

By way of background, the '885 patent explains that it became necessary for builders of web sites to develop “tests” to distinguish between human users and bots. The '885 patent further describes the following:

Carnegie Mellon University coined the term “CAPTCHA” (Completely Automated Public Turning test to tell Computers and Humans Apart) for these types of tests. A common type of CAPTCHA requires that the user type the letters, digits or characters of a distorted image appearing on the screen. The objective is to create an image that a bot cannot easily parse but that is discernable by a human. Such efforts have been successful in preventing non-adaptive software from recognizing the imaged characters but people intent on abusing these sites have designed ways to circumvent the CAPTCHA, such as through specially tuned character recognition programs.

Id. at 1:28–39.

“Current CAPTCHA technology is visual or auditory in nature, requiring the human user to answer a test that should be simple to most humans but difficult for non-humans, e.g., bots.” *Id.* at 1:60–63. The '885 patent describes additional assessment measures, beyond an auditory or visual CAPTCHA test, involving a comparison of “acquired and/or available data relating to the operation of the computing device to suitable models embodying human user derived data (model data).” *Id.* at 2:25–27. “[A]cquired” data can include “active” data such as “pointing device vector movements,” “key stroke combinations,” or “time differentials” between

“stimulus” (e.g., dialog box displays or radio buttons on a computer screen) and a user response’s response to such stimulus. *Id.* at 2:65–3:10.

“[A]vailable” data can include “passive” data such as “browser cookies,” “destination IP histories,” and a computer’s “IP address.” *Id.* at 3:17–22. Assessment of such data may be used to establish “a probability value” as to whether a particular operator is a human or a bot. *Id.* at 2:24–31.

C. Challenged Claims

Petitioner offers challenges to claims 3–9, 11, and 13–20 of the ’885 patent. As noted above, independent claim 1, which was the only independent claim of the ’885 patent, has been disclaimed. We reproduce now disclaimed claim 1 along with dependent claim 3 as representative of the subject matter of the ’885 patent.

1. A method comprising:

testing for a presence of biometric data associated with an operator of a computing device attempting to access a server;

controlling access to the server by at least one of: denying access of the computing device attempting to access the server when the biometric data is not present;

or not denying access of the computing device attempting to access the server when some biometric data is present.

3. A method as claim 1 recites, further comprising identifying whether the biometric data matches previously recorded biometric data.

Ex. 1001, 5:42–52, 56–58.

D. Alleged Grounds of Unpatentability

In its Petition, Petitioner asserts the following grounds of unpatentability:⁴

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 5, 6, 8, 10, 12–16, 18–20	103	O’Sullivan, ⁵ Willner ⁶
1–8, 10–20	103	O’Sullivan, Willner, Broder ⁷
1, 9	103	O’Sullivan, Willner, Tanzer ⁸
1, 2, 10, 12	102/103	Meek ^{9, 10}
1–3, 5, 6, 8, 10, 12	103	Meek, Willner
1–3, 5, 6, 8, 10, 12	103	Meek, Kroll ¹¹
1–8, 10–12	103	Meek, Willner, Broder
1–8, 10–12	103	Meek, Kroll, Broder
1, 9	103	Meek, Willner, Tanzer
1, 9	103	Meek, Kroll, Tanzer

⁴ For completeness, we reproduce all the grounds and associated claims as they are presented in the Petition even though claims 1, 2, 10, and 12 have been statutorily disclaimed.

⁵ U.S. Patent Application Publication No. US 2008/0319774 A1 published Dec. 25, 2008 (“O’Sullivan,” Ex. 1006).

⁶ U.S. Patent Application Publication No. US 2009/0024971 A1 published Jan. 22, 2009 (“Willner,” Ex. 1005).

⁷ U.S. Patent Application Publication No. 2008/0147456 A1 published Jun. 19, 2008 (“Broder,” Ex. 1011).

⁸ U.S. Patent Application Publication No. US 2007/0255818 A1 published Nov. 1, 2007 (“Tanzer,” Ex. 1012).

⁹ U.S. Patent Application Publication No. US 2005/0278253 A1 published Dec. 15, 2005 (“Meek,” Ex. 1008).

¹⁰ We note that all of the claims 1, 2, 10, and 12 to which this ground would have applied have been disclaimed.

¹¹ U.S. Patent No. US 6,405,922 B1 issued Jun. 18, 2002 (“Kroll,” Ex. 1010).

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 13–16, 18–20	103	Meek, Kitts ¹²
1, 13–16, 18–20	103	Meek, O’Connell ¹³
1, 13–20	103	Meek, Kitts, Broder
1, 13–20	103	Meek, O’Connell, Broder

Pet. 1. In addition to the references listed above, Petitioner relies on the Declaration of Daniel P. Lopresti, Ph.D. (Ex. 1003).

II. ANALYSIS

A. Principles of Law

A petition must show how the construed claims are unpatentable under the statutory grounds it identifies. 37 C.F.R. § 42.104(b)(4). Petitioner bears the burden of demonstrating a reasonable likelihood that it would prevail with respect to at least one challenged claim for a petition to be granted. 35 U.S.C. § 314(a).

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) when in evidence, objective indicia of non-obviousness

¹² U.S. Patent Application Publication No. US 2008/0114624 A1 published May 15, 2008 (“Kitts,” Ex. 1009).

¹³ U.S. Patent Application Publication No. US 2007/0239604 A1 (published Oct. 11, 2007) (“O’Connell,” Ex. 1007).

(i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

We analyze the asserted grounds with these principles in mind.

B. Level of Ordinary Skill in the Art

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus. Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986); *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioner contends that a person of ordinary skill in the art at the time of the invention of the '885 “would have had a bachelor’s degree in computer science or a related field with coursework relating to computer science, plus two years’ academic and/or industry experience in computer security. More education could substitute for experience, and vice versa.” Pet. 3–4 (citing Ex. 1003 ¶¶ 36–40). Patent Owner does not dispute this proposed level of skill. Prelim. Resp. 13.

For purposes of this Decision, we adopt Petitioner’s proposal as reasonable and consistent with the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art may reflect an appropriate level of skill in the art).

C. Claim Construction

We construe claims in the same manner used in a civil action under 35 U.S.C. § 282(b) “including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of

ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b). When applying that standard, we interpret the claim language as it would have been understood by one of ordinary skill in the art in light of the specification. *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1279–80 (Fed. Cir. 2017). Thus, we give claim terms their ordinary and customary meaning as understood by an ordinarily skilled artisan. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). Only terms that are in controversy need to be construed, and then 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 contends that all claim terms should be given their “ordinary and customary meaning as understood by a [person of ordinary skill in the art] and the patent’s prosecution history.” Pet. 4. Petitioner further contends that such meaning for the following terms is made explicit in the ’885 patent: “model data,” “issued data,” and “interest data.” *Id.* at 5 (citing Ex. 1001, 2:59–3:51).

Patent Owner does not propose a construction for any claim term, or even address the issue of claim construction in its Preliminary Response.

For purposes of this Decision, we regard all terms as having their ordinary and customary meaning as would be understood by an ordinarily skilled artisan. We determine that it is unnecessary to expressly construe any claim term. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (Only terms in controversy must be construed and only to the extent necessary to resolve the controversy); *see also Nidec*, 868 F.3d at 1017 (citing *Vivid Techs* in the context of an *inter partes* review).

D. All Relevant Proposed Grounds

We discern that there are thirteen proposed grounds that remain involved in this proceeding. For those thirteen grounds, Petitioner lays out in detail, supported by the testimony of Dr. Lopresti, where all the required features of claims 3–9, 11, and 13–20 are present in the prior art. *See* Pet. 5–65.

Patent Owner does not dispute that all features of claims 3–9, 11, and 13–20 are found in the prior art. Numerous times throughout its Preliminary Response, however, Patent Owner contends that Petitioner’s grounds are deficient in explaining how the various prior art references are being combined, e.g., alleged insufficient stated motivation to combine teachings, lack of explanation of a reasonable likelihood of success in so combining the references, and assertions that at least one prior art reference presented (Tanzer) is non-analogous art. For reasons discussed below, we conclude that Petitioner has shown a reasonable likelihood of success in showing that at least one claim of the ’885 patent is unpatentable. We begin with a brief summary of the prior art relied upon in the Petition.

1. Summary of Prior Art

a) O’Sullivan

O’Sullivan is titled “Pixel Cluster Transit Monitoring for Detecting Click Fraud.” Ex. 1006, code (54). O’Sullivan’s Abstract is reproduced below:

Detecting click fraud that includes a processing device that receives data related to a cursor movement towards an advertisement displayed on a web page. The processing device analyzes the cursor movement data and determines a confidence level useable in the determination of click fraud, the confidence

level responsive to the analysis of the cursor movement. The received data includes data that the cursor on the web page has transited at least one pixel cluster on the web page prior to a clicking the advertisement. In one embodiment, a click fraud is detected when the click occurred without the cursor crossing a pixel cluster, and no click fraud occurring when the click occurred after the cursor crossed a pixel cluster.

Id. at code (57).

b) Willner

Willner is titled “Cursor Path Vector Analysis for Detecting Click Fraud.” Ex. 1005, code (54). Willner’s Abstract is reproduced below:

A system and method for detecting click fraud where data is received corresponding to a tracking movement of a cursor on a web page. The movement of the cursor is associated with at least one vector. The at least one vector represents at least a portion of the cursor movement. A confidence level useable in the determination of click fraud is determined. The confidence level is responsive to analysis of the at least one vector representing at least a portion of the cursor movement.

Id. at code (57).

Willner's Figures 2 and 3 are reproduced below:

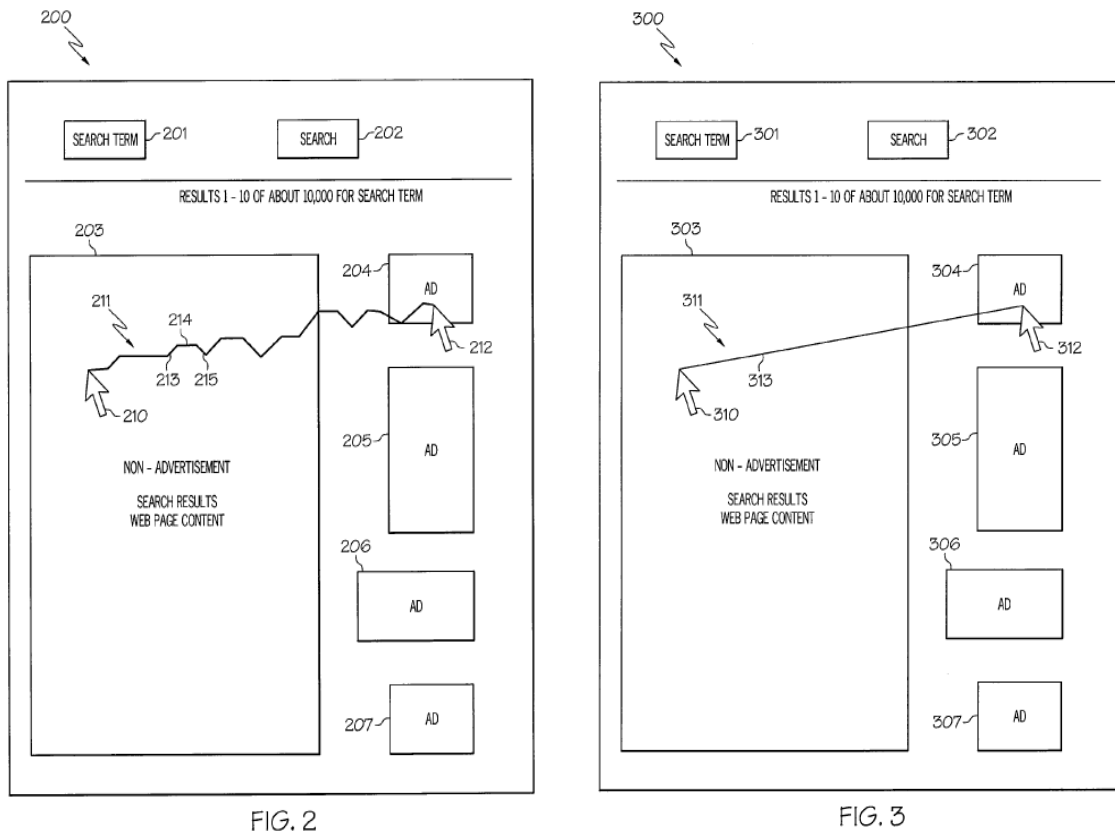


Figure 2 above shows a diagram of a web page illustrating a human-like cursor movement according to an embodiment. *Id.* ¶ 17. Figure 3 above is a diagram of a web page showing cursor movement resembling click fraud, i.e., movement by a bot, according to an embodiment. *Id.* ¶ 18. The path traveled by a cursor (211 in Figure 2, 311 in Figure 3) may be mapped into vectors and analyzed to assess whether the cursor movement has been provided by a human operator or a bot. *Id.* ¶¶ 46–48.

c) Broder

Broder is titled “Methods of Detecting and Avoiding Fraudulent Internet-Based Advertisement Viewings.” Ex. 1011, code (54). Broder’s Abstract is reproduced below:

Non human entities such as automated web crawlers or malicious click-fraud programs can skew the tracking of clicks

on web site advertisements. Thus, it is desirable to filter out page views caused by such automated entities. To achieve this goal, a web site may interject an intermediate web page after a web viewer selects an advertising link but before the web viewer is sent to the advertiser's designated web site. The intermediate web page allows for a response from the web viewer. The system then analyzes the web viewer's response to the intermediate web page (if any) along with other information using an adjustable testing policy to make a determination as to whether the web viewer is a human or non-human entity. An adjustable interject policy may be used to determine if an interjection should occur after a web viewer has selected an advertisement and before the web viewer is directed to the advertiser's designated web site. In this manner, the number of web viewers that are subjected to the intermediate web page is reduced.

Id. at code (57).

Broder's Figure 5 is reproduced below:

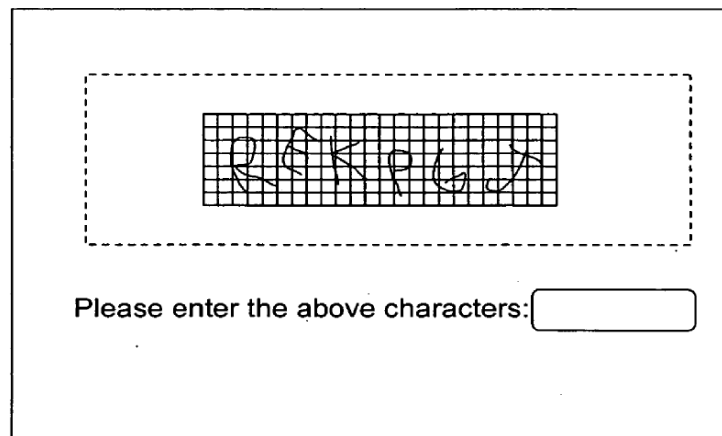


Figure 5

Figure 5 above “illustrates an example embodiment of an intermediate web page that illustrates on[e] example of a Completely Automated Public Turning test to tell Computers and Humans Apart (CAPTCHA).” *Id.* ¶ 21. Broder explains that in situations in which a “web site is being attacked by a malicious robot program, that web

site may elect to use a CAPTCHA intermediate page in order to filter out all of the accesses by the malicious robot program.” *Id.* ¶ 41.

d) Tanzer

Tanzer is titled “Method of Detecting Unauthorized Access to a System or an Electronic Device.” Ex. 1012, code (54). Tanzer’s Abstract is reproduced below:

Characteristics of a user's behavior on an electronic device are captured and stored. These stored characteristics are compared to the characteristics of a subsequent user purporting to be the same person. If the differences in the characteristics are such that fraud is suspected, an alert is activated.

Id. at code (57).

e) Meek

Meek is titled “Verifying Human Interaction to a Computer Entity by Way of a Trusted Component on a Computing Device or the Like.” Ex. 1008, code (54). Meek’s Abstract is reproduced below:

A method describes user interaction in combination with sending a send item from an application of a computing device to a recipient. The computing device has an attestation unit thereon for attesting to trustworthiness. The application facilitates a user in constructing the send item, and pre-determined indicia are monitored that can be employed to detect that the user is in fact expending effort to construct the send item. The attestation unit authenticates the application to impart trust thereto, and upon the user commanding the application to send, a send attestation is constructed to accompany the send item. The send attestation is based on the monitored indicia and the authentication of the application and thereby describes the user interaction. The constructed send attestation is packaged with the constructed send item and the package is sent to the recipient.

Id. at code (57).

f) Kroll

Kroll is titled “Keyboard Signature Security System.” Ex. 1010, code (54). Kroll’s Abstract is reproduced below:

A method is taught for analyzing the keystroke signature of a keyboard customer. The signature is compared to a database of previously stored keystroke sequences to allow for a statistical test for the identity of the user. This method allows for the use of varying keyboards to facilitate electronic commerce over the Internet from arbitrary terminals and personal computers.

Id. at code (57).

g) Kitts

Kitts is titled “Click-Fraud Protector.” Ex. 1009, code (54). Kitts summarizes its disclosure below:

Determining the probability that a user or program fraudulently initiated a web-page request is described herein. A web service executing on a server includes a data-mining component, computation component, and auction component. The data-mining component is configured to determine attributes associated with the web-page request. The computation component is configured to calculate a probability that the web-page request was fraudulently initiated. To calculate this probability, the attributes and other parameters are fed into a statistical model. The auction component is configured to locate one or more advertisements to display on the web page based on the probability. The auction component is also configured to restrict the advertisements for display based on advertiser-specified target criteria. Once an advertisement is located, the advertisement is rendered along with the web page.

Ex. 1009 ¶ 9.

Kitts further describes that the types of attributes that can be analyzed “include, without limitation, an internet protocol (IP) address of the client-computing device, . . . date, time, geographic location,

metadata, key words, HTML tabs, or other characteristics associated with the page request.” *Id.* ¶ 46.

h) O’Connell

O’Connell is titled “User-Browser Interaction-Based Fraud Detection System.” Ex. 1007, code (54). O’Connell’s abstract is reproduced below:

Systems, methods and media for detecting fraudulent behavior during an Internet commerce session are disclosed. Embodiments of a method may include establishing an e-commerce session with a user and requesting fraud detection analysis of user-browser interaction during the e-commerce session. Embodiments may also include receiving fraud detection results for the e-commerce session, where the fraud detection results may provide an indication of a comparison between the user's interaction with a browser during the e-commerce session and known fraudulent behavior. Embodiments may also include performing an action based on the fraud detection results. Determining the fraud detection results may include determining user-browser interaction data associated with the session and comparing the user-browser interaction data to known fraudulent human or automated program behavior. Performing the action based on fraud detection results may include one or more of completing an e-commerce transaction, requesting additional authentication, denying the requested action, etc.

Id. at code (57).

O’Connell further describes that

[f]actors that may represent potential fraudulent behavior by an automated program and thus raise potential security issues may include data that is entered too rapidly, a mouse pointer tha[t] never moves, a large form that is filled out without the browser window scrolling, data transmitted in a form without keystrokes being recorded, or other factors.

Id. ¶ 48.

2. *Ground Involving O’Sullivan and Willner*

We observe that there a common theme in the teachings of the prior art of record. Namely, most, if not all, of that prior art on which Petitioner relies is directed to systems, techniques, and procedures for assessing the presence of fraudulent behavior in connection with activity on the Internet. Each of Petitioner’s relevant proposed grounds includes assessment of the teachings of each of the prior art references, explanation as to how those teachings constitute the features required by the claims, and reasoning as to why a person of ordinary skill would have combined those teachings.

For instance, with respect to the ground based on O’Sullivan and Willner, Petitioner explains where all of the features of claims 3, 5, 6, 8, 13–16, and 18–20 are found in those two references. *See* Pet. 10–35. In conjunction with that explanation, Petitioner notes that O’Sullivan describes a system that determines if click fraud is occurring and as a result a server of the system “may then take appropriate action based” on that determination. Pet. 10 (quoting Ex. 1006 ¶ 48). Petitioner then turns to the teachings of Willner that readily convey to a person of ordinary skill in the art that “appropriate action” in a circumstance in which such fraud is detected, e.g., when an advertisement has been clicked on, includes “‘deny[ing] the action of click,’ thus ‘withholding the click response,’ when the ‘click [is] considered fraudulent.’” *Id.* at 10–11 (quoting Ex. 1005 ¶ 36; Ex. 1003 (Lopresti Declaration) ¶ 77). Petitioner further reasons the following:

A [person of ordinary skill in the art] would thus have understood that when O’Sullivan’s method detects click fraud, an “appropriate action” (O’Sullivan, [0048]) in the O’Sullivan-Willner combination is to deny the normal click response, thus denying the user access to the server hosting the webpage that

would otherwise have been displayed in response to clicking the advertisement.

Id. at 11 (citing Ex. 1003 ¶ 78).

Petitioner also explains the following:

In the O’Sullivan-Willner combination a [person of ordinary skill in the art] would have been motivated to incorporate Willner’s vector pattern analyses as “other received data” (O’Sullivan, [0050]) for consideration in determining whether the curser movement is consistent with “[h]uman characteristics” (O’Sullivan, [0034]) or instead indicates clickbot fraud, to achieve the benefits Willner ([0033], [0036]) teaches of “exploit[ing] the stochastic pattern in curser movement vectors...to establish that a human is involved, as opposed to an automated tool.”

Id. at 12 (citing Ex. 1003 ¶ 79).

We conclude, at this time, that Petitioner’s reasoning is sound, and amply supported by record evidence. We also conclude that the record readily conveys that a skilled artisan would have had a reasonable expectation of success in combining the teachings of O’Sullivan and Willner to arrive at the invention of the relevant claims of the ’885 patent. On the record before us, we are not satisfied that either Patent Owner’s arguments or the testimony of its declarant, Samuel Russ, Ph.D., suitably take into account what a person of ordinary skill in the art would have gleaned from the teachings of O’Sullivan and Willner. *See, e.g.*, Prelim Resp. 16, 25–27; Ex. 2101 ¶¶ 85–88. In that respect, and on the current record, we credit Dr. Lopresti’s testimony (e.g., Ex. 1003 ¶¶ 78, 79) over the countervailing testimony of Dr. Russ, as, in our view, Dr. Lopresti’s testimony better reflects what a skilled artisan would have understood in combining the teachings of O’Sullivan and Willner. Furthermore, although, as Patent Owner notes, the Petition does not use the specific phrase “reasonable

expectation of success” (*see, e.g.*, Prelim. Resp. 15), that such an expectation is present flows intrinsically from Petitioner’s and Dr. Lopresti’s explanation underscoring the proposed ground.

3. Ground Involving O’Sullivan, Willner, and Broder

In connection with the grounds involving O’Sullivan, Willner and Broder (and applied to claims 3–8, 22, and 13–20), Petitioner points to Broder’s disclosure of using CAPTCHA technology as a known tool.¹⁴ In particular, Petitioner explains the following:

In situations where the O’Sullivan-Willner combination determines that biometric data is present but suspicious of click fraud, a [person of ordinary skill in the art] would have been motivated to incorporate Broder’s technique to then interject a CAPTCHA page, to achieve the benefits Broder describes of “help[ing] determine if the entity that selected the advertisement link was a human or a non human entity” by “analyz[ing] the web viewer’s response to the intermediate [CAPTCHA] web page . . . along with other information” (e.g., biometric data analyzed by O’Sullivan-Willner) “to make a determination as to whether the web viewer is a human or non-human entity.”

Pet. 36 (quoting Ex. 1011 ¶¶ 29, 10; citing Ex. 1003 ¶¶ 122–123).

Petitioner also contends that “[a person of ordinary skill in the art] would have understood interjecting the CAPTCHA page to be desirable to slow down a clickbot attempting click fraud.” *Id.* (citing Ex. 1003 ¶ 123).

Patent Owner contends that the proposed ground involving Willner combined with the teachings of Broder is deficient because it “fail[s] to consider and weigh Willner’s full teachings.” *See, e.g.*, Prelim. Resp. 23 (citing Ex. 2101 ¶¶ 81–88). The basis for that contention is said to be that because Willner purportedly “achieves essentially perfect bot detection” a

¹⁴ We note that each of claims 4, 7, 11, and 17 of the ’885 patent include limitations directed to CAPTCHA.

person of ordinary skill in the art would be “discouraged” from adding any additional layers of testing for bot detection to avoid increasing the “complexity” of Willner’s system. *See, e.g., id.* at 23–25. Patent Owner states that because there is allegedly “no shortcoming” in the O’Sullivan-Willner combination, “[a person of ordinary skill in the art] had no reason to add [Broder’s] secondary fraud test[], and was effectively discouraged from doing so, because the fraud/no fraud determination would already be made by Willner’s system, which (according to Willner) was absolutely reliable and effective in distinguishing between humans and bots.” Prelim. Resp. 24 (citing Ex. 2101 ¶ 84).

On the record before us, we do not find Patent Owner’s contention persuasive. The parties agree that a person of ordinary skill in the art has considerable education and experience in the area of computer science and computer security. *See* Pet. 4; Prelim. Resp. 12. The teachings of Broder on which Petitioner relies are clear in conveying recognition in the art that use of CAPTCHA has a known benefit in situations in which a “web site is being attacked by a malicious robot program[.]” *See, e.g.,* Ex. 1011 ¶ 41. We are persuaded by Petitioner that a skilled artisan in computer security would have been cognizant of that potential benefit in connection with a system, such as that of Willner, that employs other types of fraud detection techniques. *See, e.g.,* Pet. 36; Ex. 1003 ¶¶ 122–123. In our view, that is so even if, as Patent Owner notes, Broder recognizes that having to go through the process of interacting with a CAPTCHA intermediate page may provide some annoyance to a human customer. *See* Prelim. Resp. 31 (citing Ex. 1011 ¶ 41). That a skilled artisan would recognize both benefits and drawbacks to the teachings of two references does not negate or nullify the combination of the teachings of those two references. *See Winner Int’l*

Royalty Corp. v. Wang, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000) (“The fact that the motivating benefit comes at the expense of another benefit . . . should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another.”).

Furthermore, a person of ordinary skill in the art is also a person of ordinary creativity. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). It follows from Broder’s teachings that one of ordinary skill and creativity would have appreciated the recognized benefits in using an intermediate CAPTCHA, even if harnessing those benefits in such a system would require addressing issues of “complexity” as urged by Patent Owner. *See, e.g.*, Prelim. Resp. 23–25. That is reasonably so even if Willner expresses praise for its own system’s effectiveness in detecting bots engaging in click fraud. There is no plausible indication on the record at hand that employing an additional or secondary fraud detection technique (e.g., CAPTCHA) would have been beyond the skill of a skilled artisan so as to suggest non-obviousness. *See KSR*, 550 U.S. at 417 (“if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.”).

On this record, we find credible, and adequately supported by record evidence, Dr. Lopresti’s testimony that “CAPTCHA is an appropriate action when possible fraud is suspected.” *See, e.g.*, Ex. 1003 ¶ 123. We also credit Dr. Lopresti’s testimony that a person of ordinary skill in the art would have had adequate motivation to combine O’Sullivan’s, Willner’s and Broder’s teachings (*see, e.g., id.*), and also conclude, at this time, that that the record reasonably conveys that there would have been a reasonable expectation of success in doing so.

4. *Grounds Involving O’Sullivan, Willner, and Tanzer*

This ground is proposed for claim 9. Claim 9 is reproduced below:

9. A method as claim 1 recites, further comprising:

identifying that at least some of the biometric data matches previously recorded biometric data;

comparing a portion of the biometric data in addition to the at least some of the biometric data to the previously recorded biometric data; and

denying access to the computing device attempting to access the server when the at least some biometric data and the portion of the biometric data match previously recorded biometric data.

Ex. 1001, 6:17–26.

Petitioner explains how the combination of O’Sullivan, Willner, and Tanzer account for all the features required by claim 9. Pet. 39–40. As with the ground discussed above that includes Broder, Patent Owner contends that a person ordinary skill in the art would have “had no reason to add” Tanzer’s secondary fraud test as a part of the combination of O’Sullivan’s and Willner’s teachings. *See, e.g.*, Prelim. Resp. 24. For essentially the same reasons discussed above, we disagree based on the present record.

Patent Owner also argues that Tanzer is non-analogous art as being neither from the same field of endeavor as the ’885 patent nor reasonably pertinent to the problems faced by the inventors of the ’885 patent. *See* Prelim. Resp. 36–40 (citing *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004)). In that regard, Patent Owner characterizes the field of invention of the ’885 patent as relating to “distinguishing between humans and non-humans generally” whereas, according Patent Owner, Tanzer is in a field relating to “distinguishing between different humans.” Prelim. Resp. 37. Patent Owner also characterizes the relevant “problem faced by the inventor

[of the '885 patent]” as “distinguishing humans from bots.” *Id.* at 38. Patent Owner dismisses Tanzer’s disclosure as being “the functional opposite” of both the '885 patent and the other references of record, characterizing Tanzer as being “drawn to a completely different technical problem (verification of a user’s **identity**) than the other references (verification of a user’s **humanity**).” *Id.* at 40. Patent Owner, thus, is of the view that Tanzer is not available as prior art in connection with any ground of patentability predicated on § 103.

Patent Owner relies heavily on the testimony of Dr. Russ in advancing its theory of non-analogous art. *See, e.g.*, Prelim. Resp. 36–40 (citing Ex. 2101 ¶¶ 118–120). Dr. Russ notes that several of the relied-upon prior art references are concerned with distinguishing between humans and computer programs. Ex. 2101 ¶ 120 (citing to each of Sullivan, Willner, Meek and Kroll). Yet, neither Dr. Ross nor Patent Owner points to evidence of record establishing that even if somewhat different considerations are involved, the act of distinguishing between actors that are human versus distinguishing between actors in which one such actor may be a computer presents considerations that are fundamentally different in field or kind.

Indeed, record evidence, which neither Patent Owner or Dr. Russ addresses, clearly suggests a recognized harmony in the field in distinguishing between two humans and distinguishing between a human and a computer. In that respect, O’Connell teaches, for instance, the following as a part of its disclosed fraud detection procedures:

As discussed previously, the fraud detection results may include an indication of the likelihood that the person (or entity) acting as the user of the current session is in fact the actual user or is actually a different user or automated program instead engaging in fraudulent behavior. The algorithms used by the fraud

detection module 116 and its sub-modules to determine the likelihood of fraudulent behavior may include both standard or general algorithms as well as algorithms specified by an implementer of the system (i.e., e-commerce application 118 operators) based on their own needs or observations of what is typical or fraudulent for their site. The flexibility of algorithms also includes whether to attempt to detect fraudulent behavior by both humans and automated programs to only attempt to detect one of the two. The fraud detection result algorithms may thus allow for flexible weighting and/or consideration of different or multiple factors.

See Ex. 1007 ¶ 46.

Because record prior art evidence clearly conveys recognition of the use of programming components and flexible algorithms to differentiate between different humans or between a human and an automated program, we do not agree with Patent Owner that there is any meaningful difference, much less a “fundamental difference,” between such differentiation in the relevant field. On this record, we find Patent Owner’s assessment to the contrary to be inadequately explained and supported, and we do not conclude that Tanzer is non-analogous art.

5. Grounds Based on Meek

Petitioner proposes that various claims of the ’885 patent are unpatentable based on Meek combined with one or more of Willner, Kroll, Kitts, O’Connell, Broder, and Tanzer. Pet. 48–65.

Patent Owner contends that all of the proposed combinations involving Meek are deficient because “each secondary reference functions in a fundamentally different manner than Meek.” Prelim. Resp. 41. That fundamental difference is said to arise because “[w]hile Meek authenticates human activity on the client device, each secondary reference performs the

analysis on the server,” and that such circumstance presents “a very difficult problem in combining the references.” *Id.* (citing Ex. 2101 ¶¶ 126, 139–145). We are cognizant of Dr. Russ’s assessment of how Meek’s system operates. *See, e.g.*, Ex. 2101 ¶¶ 139–145. Dr. Russ’s declaration includes such testimony as “[a person of ordinary skill in the art] understood that there would be significant issues in combining Meek’s approach and architecture with those of the secondary references.” *Id.* ¶ 141. Dr. Russ’s Declaration also includes such testimony as “a [person of ordinary skill in the art] would recognize [] the difficulty in having Meek’s client-side attestation unit perform the data analyses required by the secondary references” and that the combinations would be “entirely unworkable” and “completely destroys Meek’s base functionality.” *See, e.g., id.* ¶¶ 142, 144.

It is apparent that Patent Owner’s proposed differences between Meek’s alleged “client-side authentication” and the alleged “server-side authentication/analysis” of the teachings of all the prior art references relied upon largely informs Patent Owner’s reasoning, expressed throughout the Preliminary Response, that Petitioner has not explained why a person of ordinary skill in the art would have had adequate motivation to combine those respective teachings or a reasonable expectation of success in doing so. *See* Prelim. Resp. 45–46; *see also id.* at 46–59. We do not discern, however, that any of the prior of record discusses that such a dichotomy exists between client-based authentication and server-based authentication. We also do not discern that either Petitioner or Dr. Lopresti views such a dichotomy as precluding a combination of Meek’s teachings with those of any of Willner, Kroll, Kitts, O’Connell, Broder, and Tanzer.

We note that the alleged disparity between client-side and server-side authentication is not an issue that was raised by Patent Owner in connection

with the grounds based on O’Sullivan. With respect to the grounds based on Meek, we regard the above-discussed matter as one that the parties may address further during trial.

6. Conclusion—Proposed Prior Art Grounds

We have considered all of the pertinent proposed grounds of unpatentability offered by Petitioner in the Petition. We have also considered Patent Owner’s challenges to those grounds as presented in Patent Owner’s Preliminary Response. We conclude that Petitioner has presented suitable explanation, supported by the testimony of Dr. Lopresti, that all of the features required by the claims of the ’885 patent are present in the prior art. We also conclude that Petitioner and Dr. Lopresti have identified adequate reasons as to why person of ordinary skill in the art would have combined the various teachings of the prior art, at least in connection with those grounds based on O’Sullivan. Furthermore, we are satisfied that the record before us adequately reflects that a skilled artisan would have had a reasonable expectation of success combining the teachings of at least O’Sullivan, Willner, Broder and Tanzer.

Accordingly, we conclude that Petitioner has shown a reasonable likelihood that it would prevail with respect to at least one of the challenged claims.

E. Patent Owner’s Request for Discretionary Denial

Patent Owner contends that we should exercise our discretion to deny institution under 35 U.S.C. § 314(a). Prelim. Resp. 60–66. Patent Owner presents what appears to be three asserted reasons that warrant the exercise of our discretion.

First, Patent Owner contends all of Petitioner’s proposed grounds have “fundamental defects” that arise because, in Patent Owner’s view, Petitioner “has completely ignored its burden to provide a reasonable expectation of success.” *Id.* at 60. Although, as Patent Owner notes, the Petition does not use the phrase “reasonable expectation of success,” as discussed above, at this time we conclude that the Petition and the supporting testimony of Dr. Lopresti provide adequate argument and evidence intrinsically conveying that a person of ordinary skill in the art would have had a reasonable expectation of success in combining the teachings of the references as a part of Petitioner’s proposed grounds.

Second, Patent Owner contends that because “the Petition advances a multiplicity of overlapping grounds with no explanation, it fails to identify the asserted grounds with particularity under § 312(a)(3).” Prelim. Resp. 62. We note that there is some overlap in the thirteen remaining grounds that are part of this proceeding. But, we do not discern that the Petition is unclear or not particular in how it is applying the prior art to the claims, even with overlap between the grounds. Patent Owner notes that a panel may opt to exercise its discretion to deny institution “[w]here a petition contains voluminous or excessive grounds.” Prelim. Resp. 63 (citing in-part to *Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20 at 1–18 (PTAB Mar. 6, 2019) (informative)). The number of grounds in *Adaptics* was clearly excessive, involving ten references where the references were tethered together using the somewhat ambiguous “and/or” conjunction that potentially resulted in “hundreds of possible combinations.” *See Adaptics*, Paper 20 at 18–19. That extreme situation is not present here. None of the proposed grounds employs the “and/or” conjunction, and it is clear what teachings of the prior art are being applied to the claims of the ’885 patent.

The reasoning for exercising discretion in *Adaptics*, in our view, is not germane here.

Third, Patent Owner also contends that it would be an inefficient use of the Board’s time and resources essentially because, according to Patent Owner, despite Petitioner’s presentation of “overlapping” grounds, Petitioner has “not demonstrated a reasonable likelihood of prevailing with respect to any claims for any grounds.” *Id.* at 65. As discussed above, we conclude that Petitioner has presented grounds of unpatentability for which it has shown a reasonable likelihood of success. In our view, the circumstances presented here do not favor Patent Owner’s general position that instituting *inter partes* review would be an inefficient use of the Board’s time or resources.

Lastly, we are mindful of Petitioner’s assessment of the factors laid out in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (Mar. 20, 2020) (precedential) (“*Fintiv*”), and Petitioner’s view that none of those factors weighs in favor of our exercising discretion to deny institution under 35 U.S.C. § 314(a). *See* Pet. 66–71. We also are cognizant of Petitioner’s analysis and assessment that the first prong of the test in *Advanced Bionics, LLC v. MED-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8–9 (Feb. 13, 2020) (precedential) has not been met, such that exercise of discretion to deny institution pursuant to 35 U.S.C. § 325(d) also is not warranted. Pet. 71–72. Patent Owner does not meaningfully address discretionary denial under *Fintiv* or *Advanced Bionics*.

On the record before us, we decline to exercise our discretion to deny institution of an *inter partes* review.

III. CONCLUSION

Petitioner has shown a reasonable likelihood that it would prevail with respect to at least one of the challenged claims.

IV. ORDER

In consideration of the foregoing, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 3–9, 11, and 13–20 of the '885 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '885 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

IPR2022-00941
Patent 10,423,885 B2

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