

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

X CORPORATION,
Petitioner,

v.

STERLING COMPUTERS CORPORATION,
Patent Owner.

Case No. IPR2025-00299
U.S. Patent No. 7,716,217

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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EXHIBIT LIST

No.	Short Name	Reference
1001	217 Patent	Certified Copy of U.S. Patent 7,716,217
1002	217 File History	Certified File History of 7,716,217
1003	828 Provisional	Certified United States Provisional Patent Application No. 60/758,828.
1004	Houh Decl.	Expert Declaration of Dr. Henry Houh
1005	Houh CV	Curriculum Vitae of Dr. Henry Houh
1006	<u>Dumais</u>	U.S. Patent Application Publication 2007/0016553A1
1007	<u>Kircher</u>	U.S. Patent Application Publication 2003/0195937A1
1008	<u>Krug</u>	Certified Translation of WIPO Patent 2003/023650A2
1009	Sch. Order	Order 32 (Scheduling Order) in <i>Sterling Computers Corporation v. X Corp.</i> , Case No. 1:24-cv-00552 (W.D. Tex. May 22, 2024)
1010	Sch. Hr. Tr.	Oct. 21, 2024, Transcript of Initial Pretrial (Scheduling) Conference in <i>Sterling Computers Corporation v. X Corp.</i> , Case No. 1:24-cv-00552 (W.D. Tex. May 22, 2024).
1011	Goldberg	David Goldberg, et al., <i>Using Collaborative Filtering To Weave An Information Tapestry</i> , COMMUNICATIONS OF THE ACM, 35:12 (Dec. 1992).
1012	Kennedy	U.S. Patent 6,134,582
1013	Mailk	U.S. Patent Application Publication 2004/0078447
1014	587 Application	International Application PCT/US07/60587
1015	587 File History	File History of PCT/US07/60587
1016	RESERVED	

1017	118 File History	File History of 11/426,118
1018	605 Provisional	Provisional Patent Application No. 60/693,605.
1019	Shaw	U.S. Patent 6,249,807
1020	Karamchedu	U.S. Patent Application Publication 2004/0054744
1021	Fitzpatrick	U.S. Patent Application Publication 2006/0168029
1022	Yao	U.S. Patent Application Publication 2003/0187937
1023	Segal	Richard Segal, et al., <i>SpamGuru: An Enterprise Anti-Spam Filtering System</i> , CEAS 2004, FIRST CONFERENCE ON EMAIL AND ANTI-SPAM, (July, 2004).
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1025	Sood	U.S. Patent 7,941,491
1026	Kirsch	U.S. Patent Application Publication 2005/0091319
1027	Boykin	P. Oscar Boykin, et al., <i>Personal Email Networks: An Effective Anti-Spam Tool</i> , ARXIV.ORG, 4 (Feb. 2004)
1028	Horvitz	International PCT Application WO2001/069432
1029	Lui	Andrew K. Lui, et al., <i>An Advanced Organizer for Asynchronous Discussion Forums</i> , IEEE (2005).
1030	Claypool	Mark Claypool, et al., <i>Combining Content-Based and Collaborative Filters in an Online Newspaper</i> , ACM SIGIR WORKSHOP ON RECOMMENDER SYSTEMS (Aug. 1999).
1031	Brun	U.S. Patent Application Publication 2007/0168430
1032	Linden	Greg Linden, et al., <i>Amazon.com Recommendations Item-to-Item Collaborative Filtering</i> , IEEE INTERNET COMPUTING (2003).
1033	Frankowski	International PCT Application WO2001/53973
1034	Dabbish	Laura A. Dabbish, et al., <i>Understanding Email Use: Predicting Action on a Message</i> , CHI (2005).
1035	Basu	Chumki Basu, et al., <i>Recommendation as Classification: Using Social and Content-Based</i>

		<i>Information in Recommendation</i> , AAAI-98 PROCEEDINGS (1998).
1036	Melville	Prem Melville, et al., <i>Content-Boosted Collaborative Filtering for Improved Recommendations</i> , PROCEEDINGS OF THE EIGHTEENTH NATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE (Jul. 2002).
1037	Alspector	Joshua Alspector, et al., <i>Comparing Feature-Based and Clique-Based User Models for Movie Selection</i> , PROCEEDINGS OF THE THIRD ACM CONFERENCE ON DIGITAL LIBRARIES (1998).
1038	Balabanovic	Marko Balabanovic, et al., <i>Content-Based Collaborative Recommendation</i> , COMMUNICATIONS OF THE ACM (Mar. 1997).
1039	Kussmaul	U.S. Patent 7,860,933
1040	Rose	U.S. Patent 6,202,058
1041	MSFT Comp.	Microsoft Computer Dictionary, 3ed (1997).
1042	Levenshtein	Jan 2005 – Levenshtein Distance – Wikipedia
1043	<u>Marston</u>	U.S. Patent Application Publication 2004/0260710
1044	EX2010 Markup	EX2010 with comments and redlines enabled
1045	EX2010 metadata	System metadata for EX2010
1046	EXPUNGED	
1047	PHV Plail Dec.	<i>Pro Hac Vice</i> Declaration of Ethan L. Plail
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1049	J. Marston Rough Depo. Tr.	Rough Deposition Transcript of Justin Marston, November 11, 2025
1050	J. Marston Final	Final Transcript of Justin Marston Deposition,

(NEW)	Depo. Tr.	November 11, 2025
1051 (NEW)	J. Marston C.V.	Justin Marston Curriculum Vitae
1052 (NEW)	BlueSpace Investment Presentation	BlueSpace Investment Presentation, December 2005
1053 (NEW)	Letter to Jon and Justin	Letter to Jon and Justin
1054 (NEW)	Letter to Justin and Jon Oct. 2005	Letter to Justin and Jon, October 14, 2005
1055 (NEW)	Updated EX2041 BlueSpace Doc. Log	Updated EX2041 BlueSpace Document Log, June 2005 to January 2006
1056 (NEW)	Updated EX2042 Priv. Comms. Log	Updated EX2042 Privileged Communications Log BlueSpace Counsel, June 2005 to January 2006
1057 (NEW)	Letter to Bobby Inman	Letter to Bobby Inman, August 2, 2005
1058 (NEW)	Dr. Khan Depo.	Final Transcript of Dr. Khan Deposition, November 13, 2025
1059 (NEW)	Thuraisingham	Bhavani Thuraisingham, et al., <i>Emergency-Driven Assured Information Sharing in Secure Online Social Networks: A Position Paper</i> . 2016 IEEE INTERNATIONAL PARALLEL AND DISTRIBUTED PROCESSING SYMPOSIUM WORKSHOPS (May 2016).
1060 (NEW)	Chandra	Swarup Chandra, et al., <i>Estimating Twitter User Locations Using Social Interactions – A Content Based Approach</i> . 2011 IEEE THIRD INTERNATIONAL CONFERENCE ON PRIVACY, SECURITY, RISK AND TRUST AND 2011 IEEE THIRD INTERNATIONAL CONFERENCE ON SOCIAL COMPUTING (Oct. 2011).
1061	Chen	Qing Chen, et al., <i>Tweets mining using WIKIPEDIA</i>

(NEW)		<i>and impurity cluster measurement</i> . 2010 IEEE INTERNATIONAL CONFERENCE ON INTELLIGENCE AND SECURITY INFORMATICS (May 2010).
1062 (NEW)	Abrol Article	Satyen Abrol, et al., <i>Twiner: understanding news queries with geo-content using twitter</i> . PROCEEDINGS OF THE 6TH WORKSHOP ON GEOGRAPHIC INFORMATION RETRIEVAL (Feb. 2010).
1063 (NEW)	Abrol Patent	U.S. Patent 8,965,974
1064 (NEW)	Paul Marston Depo.	Final Transcript Dr. Victor “Paul” Marston, November 17, 2025
1065 (NEW)	University Schedule 2004-2005	University of Central Lancashire Schedule 2004-2005
1066 (NEW)	University Schedule 2005-2006	University of Central Lancashire Schedule 2005-2006
1067 (NEW)	Paul Marston Doc. List	Dr. Paul Marston Document List
1068 (NEW)	Sterling Metadata Table	Table of Metadata for Sterling’s Inventive Documents
1069 (NEW)	Native Metadata EX2004	Sterling’s Extracted Metadata from Native of EX2004 Conception document
1070 (NEW)	Native Metadata EX2006	Sterling’s Extracted Metadata from Native of EX2006 Conception document
1071 (NEW)	Unredacted EX2046	Unredacted version of EX2046.

I. Introduction

Sterling attempts to salvage the challenged claims by proposing new narrowing constructions. But Sterling's constructions are inconsistent with the intrinsic record and the testimony of Sterling's own witnesses. Regardless, the prior art discloses the claims under either party's construction.

Sterling also fails to address—and leaves unrebutted—the Kircher/Krug combination. Sterling erroneously attacks Krug and Kircher in isolation. EX1058,154:21:24(“Kircher on its own”);154:25-155:10(“Krug on its own”); POR,28-30; *In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (cannot attack references individually.) For this reason alone, Sterling's rebuttals fail.

Sterling's attempt to antedate Dumais should also be rejected. Sterling cannot satisfy its burden of proof by citing thousands of pages of exhibits without explanation. Sterling's “conception evidence” confirms the inventors did not conceive of the complete invention prior to Dumais and did not diligently reduce the inventions to practice.

II. Dr. Khan's Testimony Should Be Given Little Weight

A person of ordinary skill in the art (POSA) has “ordinary creativity, [and is] not an automaton.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 402, 420 (2007). Dr. Khan fails to apply *KSR* and instead claims a POSA “may not necessarily be

creative” and is **not** able to “fit multiple teachings of a reference together.” EX1058,18:11-13,19:8-14.

Dr. Khan also imports new limitations into the claims. The claims do not recite a particular result “quality.” But Dr. Khan believed the ’217 “patent focuses on the quality of the result,” and when forming his opinions “evaluat[ed] the **relative quality** between the algorithms for the ’217 patent and the algorithms for the prior art.” EX1058,45:6-10, 57:5-6,169:24-170:3,62:12-23,96:3-14,200:19-201:2.¹

Dr. Khan also ignores express teachings in the references. For example, Dumais can process multiple types of “data items” including “email.” EX1006,[0031]. But, Dr. Khan “disagreed” that Dumais could actually process emails because “the result may not be that high quality.” EX1058,159:7-162:15; EX2029,¶125. Dr. Khan cannot ignore Dumais’ express teachings. *Sage Products, LLC v. PureWick Corp.*, IPR2020-01426, Paper 30, 35-38 (P.T.A.B. Feb. 14, 2022) (little weight for failing to consider entire reference).

Finally, Dr. Khan provides no support for his assertions in ¶¶28-31, 33, 35, 38-49 (claim construction) and 207-228 (Kircher/Krug) of his declaration (EX2029). This *ipse dixit* is entitled to little weight. *Google LLC v. Ecofactor, Inc.*, IPR2020-01504, Paper 55, 57-58 (P.T.A.B. Aug. 1, 2024).

¹Emphases added unless noted.

III. Claim Construction

A. The “*Module*” Terms are Governed by §112(6)

“*Module*”² is a well-known nonce term that typically invokes §112, ¶6. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1350 (Fed. Cir. 2015) (“‘[M]odule’ is a well-known nonce word...”); *MTD Prods. Inc. v. Iancu*, 933 F.3d 1336, 1341 (Fed. Cir. 2019) (“‘module,’ ...operate[s], like ‘means’”). The claims use “*module*” as a nonce-term to refer to any generic “**program**, circuitry, logic, and/or functionality” that performs the claimed functions, not a specific or well-understood structure. EX1001,6:36-66; EX1004,¶¶109-114. Sterling’s witnesses admit an “off-the-shelf” computer “had to be programmed” to perform the functions performed by the “*module*.” EX1050,119:11-16(“...need to look to the algorithms in the specification to understand how to implement....”);113:20-114:22;118:16-120:22;121:21-125:1;129:9-130:7; EX1058,111:11-23;104:17-105:1;197:19-200:23;95:8-13;107:9-11; POR,11.

On institution, the Board found the “code” implementation of the claims was sufficient structure and the “*module[s]*” were not means-plus-function terms. ID,12. Respectfully, the Board erred.

²Italics indicate claim language.

First, the Board credited Dr. Khan’s testimony that “recited functions can be performed by existing or off-the-shelf systems.” *Id.*; POR,17. But Sterling’s witnesses now concede an “off-the-shelf” computer “had to be programmed” to perform the claimed functions.

Second, the Board acknowledged the “specification broadly **defines** ‘module,’” but then disregarded this broad definition. *Id.*; ID,11 (citing EX1001,6:36-66). The Board’s construction therefore ignores the specification’s broad definition of “*modules*” as **any** generic structure.

Third, *Dyfan, LLC v. Target Corp.*, 28 F.4th 1360 (Fed. Cir. 2022) is inapposite. In *Fintiv, Inc. v. PayPal Holdings, Inc.*, 134 F.4th 1377, 1383 (Fed. Cir. 2025), the Federal Circuit explained that *Dyfan* involved “unrebutted testimony from the **patent challenger’s own expert** testifying that a POSA would have (1) understood the ‘code’/‘application’ limitations ‘connote a class of structures’ and (2) known the recited claim functions could be implemented using ‘off-the-shelf’ code or applications.” Unlike *Dyfan*, here, (1) the testimony confirms that a POSA would not have understood the “*module[s]*” to be “a particular structure,” and (2) the claimed functions cannot be implemented using “off-the-shelf” computers. *Supra* §IV.B; EX1004,¶¶109-114.

Sterling contends the “*computer **program modules***” indicates the “*modules*” are “*programs*,” and therefore structural. POR,16. But “program[ming] a computer

to perform the recited functions cannot create structure.” *Williamson*, 792 F.3d at 1351. “[C]ode”/“programs” only connotes structure where they refer to conventional/off-the-shelf programs. *Grecia v. Samsung Elecs. Am., Inc.*, 780 F. App'x 912, 916 (Fed. Cir. 2019) (distinguishing *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003 (Fed. Cir. 2018)). *Grecia*'s claims were similarly directed to a “computer product comprising a memory” that ran a “customization **module**.” *Id.*, 913-915. But the Court found they invoked §112, ¶6 because “nothing in [the] claim[] explains how the customization module operates.” *Id.* The same is true here. Pet., 8-18.

Sterling attempts to “distinguish[]” *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323 (Fed. Cir. 2008) and *In re Katz Interactive Call Processing Pat. Litig.*, 639 F.3d 1303 (Fed. Cir. 2011) because those claims “were written in means-plus-function form.” POR, 18. But both cases found that “a general-purpose computer” was not structural, except where “those functions can be achieved by any general-purpose computer without special programming.” *In re Katz*, 639 F.3d at 1316; *Finisar*, 523 F.3d at 1341 (similar). Here, it is undisputed that general-purpose computers cannot perform the claimed function without special programming—therefore, the claims are governed by §112, ¶6.

Sterling does not contest Petitioner's identification of the claimed functions or structures. POR, 15-18.

B. “*Identifying...*”

At institution, the Board refused to import new limitations into “*recipient*” and “*cognate*” in the “*identifying...*” limitation. Sterling provides no reason for the Board to do so now.³

1. Sterling Imports an Unrecited Limitation

Sterling attempts to distinguish Dumais and Kircher/Krug by importing an unrecited limitation: a “*recipient*” “receives a piece of electronic content **sent from a sender.**” POR,21. “[*R*]*ecipient*” should be given its ordinary meaning—someone who receives content by any means.

The claims recite “*a recipient of the piece of electronic content*” with no requirement of a “sender.” Claims often recite only one side of interactions to ensure a single entity can meet all the limitations—i.e., a server receiving.... Such is true here. Moreover, “*electronic content*” broadly includes “*document[s]*”—content not traditionally associated with a sender. EX1001,cls.5/15.

The claims recite a “*sender*” when it is required. Element-1[pre]/6[pre]/7[pre] (“*content sent from a sender.*”). But the “*identification*” limitation (Elements-1[f]/6[d]/7[b]) does not recite a “sender” or “sending.” “Courts may not introduce

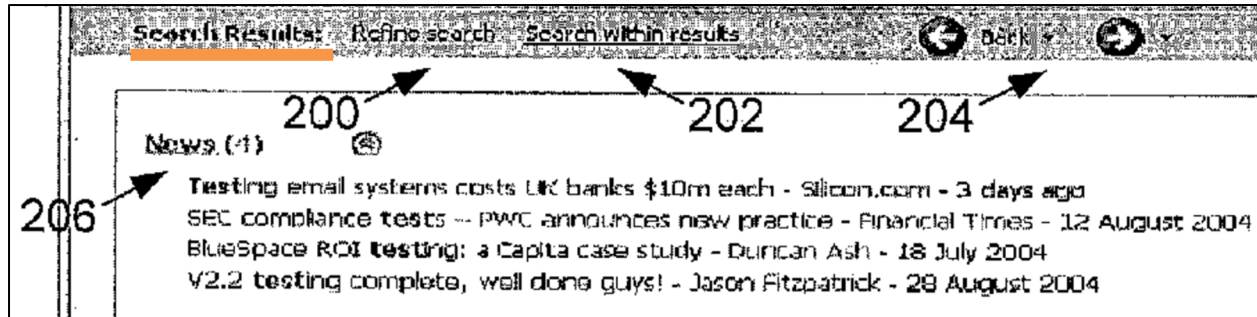
³Sterling argues that “*identifying...*” “requires an **active step**,” (POR,1-2), but does not explain what “active step” is required.

into a claim, limitations which are explicitly contained in other claims.” *Caterpillar Tractor Co. v. Berco, S.P.A.*, 714 F.2d 1110, 1116 (Fed. Cir. 1983).

Sterling contends that because the “*determining...*” limitation (Elements-1[pre]/6[pre]/7[pre]) includes a “sender,” the “*recipient*” (in Elements-1[f]/6[d]/7[b]) must also receive “electronic content **sent from a sender.**” POR,21. This is an improper attempt to import the sender requirement from “*determining...*” to “*identifying....*”

Sterling also limits “*recipient*” to a single embodiment. The claims recite “*an application for managing electronic content.*” The “*application*” includes an email system—where content is “sent from a sender.” POPR, 21. But the specification also describes a “document management system,” where “mail content” is managed according to “a compliance model.” EX1001,3:46-48,3:54-56,5:28-33. The “compliance model” determines “who can access content.” *Id.* For example, “an analyst might have the right to search **all content** related to analyst processes **written by other analysts.**” EX1001,5:28-43. The compliance model is also used with “cluster models” to identify cognate users. *Id.*,44:37-39,9:51-10:8.

The recited “*search module*” (Claim 3) also ranks content that is “not electronic mail objects,” such as external web sites (with no sender). EX1001,3:7-9;24:4-16;Fig. 20 (example search).



While the specification discloses examples where “electronic mail object” is “sent to external recipients,” these do not mandate that the “electronic content [be] sent from a sender.” POR,21-22.

2. “Cognate” Is Not Limited to a Particular User

Sterling attempts to distinguish Dumais and Kircher/Krug by importing two limitations: (1) excluding “cognate groups” (i.e., must be “a **particular other user**” (POR,20)) and (2) requiring users share “similar past user actions and assessments” (or **the same** direct input).” POR,20. Sterling’s attempt should be rejected.

On (1), the claim recites “*identify[ing] at least one other of the plurality of users.*” “[A]t least one” includes identifying a group of more than one user. *Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999). The specification also discusses “identify[ing] a cognate group of the n other users regarded as most similar.” EX1001,14:59-15:11. The intrinsic record does not exclude “groups” from the claims.

On (2), Sterling contends the claims “require[] ‘*identify[ing]*’” a second user based on “past actions.” POR,19. That the cognate user shares “*one or more actions*”

is part of the optional “*tracking...*” limitation (Elements–1[g][iv]/6[e][iv]/7[d][iv]), **not** the “*identifying...*” limitation. *Id.* The specification also describes numerous ways to identify cognate users/groups, not only based on sharing “*one or more actions.*” EX1001,43:30-37.

C. *Markush* Group

The Board agreed that Elements-1[g]/6[e]/7[d] are a *Markush* Group. ID,13. Sterling offers no rebuttal.

IV. Grounds 4-5: Kircher/Krug (With/Without Marston)⁴

A. Kircher and Krug Are Analogous Art

The specification includes multiple embodiments of “*an application for managing electronic content*” including: (1) “electronic mail” systems and (2) “document management application[s].” EX1001,Abstract,3:43-51; EX1004,¶436. Kircher’s “field of invention” is a system for “processing electronic messages”—(1) an “electronic mail” system. EX1007,[0001]-[0002]. Krug describes a system for (2) managing electronic content. EX1008,Abstract,[0002]. Kircher and Krug are in the same field of endeavor as the ’217 Patent.

The problem the ’217 Patent is trying to solve is proliferation of “voluminous” and “irrelevant” “electronic content.” POR,54-55; EX1001,1:26-30. Kircher

⁴§II of Sterling’s Response mischaracterizes the ’217 Patent and is disconnected from the claims or arguments. Sterling’s mischaracterizations are irrelevant and rebutted by §§III-IV of Dr. Houh’s Declaration. EX1004.

explains that “individuals...receive hundreds of email messages,” many of which are of “little interest.” EX1007,[0002]. Krug also explains that users are “presented with a large number of ‘useless’ documents.” EX1008,[0002]. Kircher and Krug are, therefore, attempting to solve the same problem as the ’217 Patent. EX1058,215:2-19. *Donner Tech., LLC v. Pro Stage Gear, LLC*, 979 F.3d 1353, 1359 (Fed. Cir. 2020) (analogous if “reasonably pertinent to” problem).

Sterling contends that “Krug is not analogous art” because Krug is (1) not “an email management system” and (2) because “internet search results” do not include “spam.” POR,38-39. But the claims are broader than email management systems and encompass “document management application[s],” such as Krug. EX1001,Abstract,3:43-51. The ’217 Patent is also not limited to “spam,” instead, like Krug, it attempts to solve issues with “irrelevant” content. EX1001,1:26-34; EX1008,[0002].

Sterling also contends that “Krug is not analogous art to Kircher.” POR,38. But both systems manage electronic content (emails/documents) and attempt to solve problems of voluminous “useless” documents. EX1008,[0002]; EX1007,[0002].

B. Kircher/Krug Is a Simple Substitution

Sterling contends the Kircher/Krug combination “would render Kircher inoperable” because Krug’s “plug-in” can only be used with an “internet browser” and Kircher is “not an internet browser.” POR,34-35.

A POSA would have understood that Krug’s “plug-in” is not limited to integrations with “internet browsers.” EX1004,¶¶427-433. In one embodiment, Krug’s “software program” can be “installed on the user computer 1 as a plug-in [(blue)],” and would be easily combined with Kircher’s “computer program” (green). *Id.*; EX1008,[0099]; EX1007,[0029]. Krug’s plug-in represents an effort by Krug to ensure his invention could be integrated into other systems (such as Kircher). EX1008,[0099].

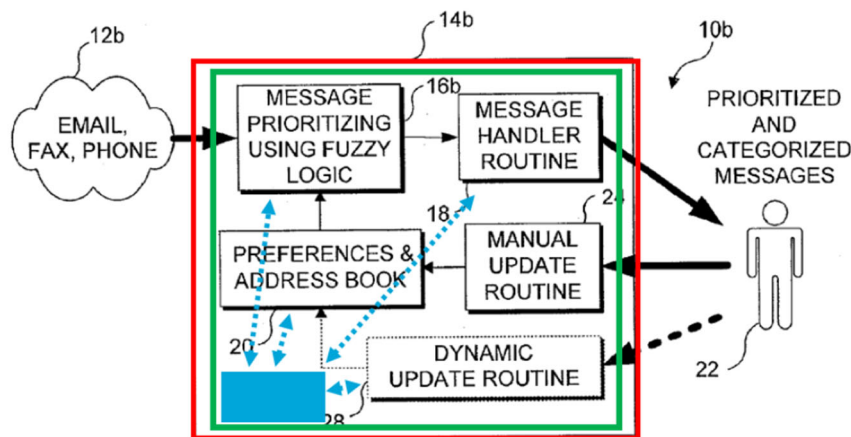


FIG. 1

Sterling also does not explain why Kircher/Krug would be “inoperable.” By 2006, it was common “to use internet browsers to access webmail.” EX1050,66:12-

14; EX1004,¶101. Email clients also included an “embedded internet browser” to render HTML messages. EX1050,91:7-92:20,66:12-14. It would have been simple for a POSA to integrate Krug’s plug-in into either a browser accessing webmail or the embedded browser of an email client. EX1004,¶¶427-433. Designing add-ins for browsers/email was well-understood. EX1011, 4; EX1004,¶76; EX1050,70:2-72:7; EX1052,11-15.

Sterling argues that Krug/Kircher is “inoperable” because Krug is focused on “search queries.” POR,35-36. But (1) the claims are broad enough to cover search queries (EX1058,193:1-2), and (2) it was well-understood that search engines could be used for relevance rankings. EX2004,32(the “model” used for the claimed invention “is reminiscent of that used for the PageRank system by Google”),27,28; EX1004,¶542; EX1024,[0045]; EX1001,16:26-30.

Sterling claims that the portions of Krug’s formula relating to search-engines ($Rz(i)$) would need to be discarded if combined with Kircher and that “two terms ($GRm(k)$, $OCm(k)$) in Krug’s equation” relating to “initial priority” are “entirely foreign to Kircher’s approach.” POR,36.

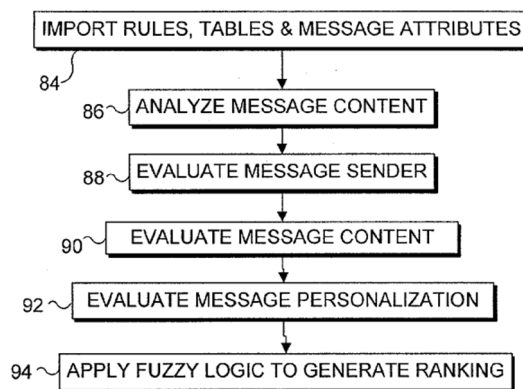
But “[c]laims may be obvious in view of a combination of references, even if the features of one reference cannot be **substituted physically** into the structure of the other reference.” *Orthopedic Equip. Co., Inc. v. U.S.*, 702 F.2d 1005, 1013, (Fed. Cir. 1983). Regardless, Krug’s $Rz(i)$ search-engine function could have been

integrated into Kircher's fuzzy logic. Pet.,51. Krug's relevance score is a “product or sum” of several “individual criteria” (**below-left**). EX1004,¶416; EX1008,[0104]-[0129]. Kircher also relies on weighted rules, which form a final relevance score (**below-right**). EX1007, Fig. 5C; [0059]; EX1004,¶527.

Krug's “individual criteria”

W_{Om}(k) is the absolute intrinsic value of the k-th object;
W_{Um}(k) is the user-specific intrinsic value of the k-th object;
W_{Cm}(k) is the intrinsic value of any user group for k-th object;
G_{Rm}(k) is the initial priority of an object;
O_{Cm}(k) is the community weight of the object; and
H_A(k) is the action equivalence of the object.

Kircher's weighted “assessments”



It would have been “easy and predictable to integrate [Krug's] additional rules into the fuzzy logic of Kircher, because Kircher specifically envisions ‘more than one rule’ and ‘[a]n entire group of rules.’” EX1004,¶426; EX1007,[0044]. A POSA would have used their creativity and skill to combine the weighted rules (Kircher) and individual criteria (Krug) as “additional factor[s] used to calculate the comparison value.” EX1004,¶564;¶42; Pet.,4,50,53-54.

C. A Skilled Artisan Would Have Been Motivated to Combine Kircher/Krug

Sterling never addresses—and leave un rebutted—the analysis in the Petition explaining “how” (Pet.,50-54) and “why” (Pet.,54-56,68-70) a POSA would have

combined Kircher/Krug. Yet Sterling contends that Petitioner’s analysis is “hindsight,” because Kircher and Krug’s “score functions are incompatible with each other.” POR,39-41.⁵ But as explained above, Kircher and Krug’s teachings show that both “score functions” could have been combined. *Supra* §IV.B; EX1030, 2; EX1004, ¶¶93-97.

D. Sterling’s Faulty Analysis

Sterling leaves the Kircher/Krug combination unrebutted and erroneously attacks Krug and Kircher in isolation. POR,28-30; EX1058,154:21:24,154:25-155:10.

Sterling also contends that Kircher and Krug are “different from the inventions set forth in the ’217 Patent.” POR,26-28; EX2029, ¶¶151-164. Dr. Khan asserts, for example, that Krug uses a “Euclidean distance,” which is different from the ’217 patent’s “multi-dimensional relevance system.” *Id.*, ¶159. But the claims do not recite a “multi-dimensional relevance system.” These alleged “distinctions” are irrelevant. *Janssen Pharms., Inc. v. Teva Pharms. USA, Inc.*, 97 F.4th 915, 926 (Fed. Cir. 2024); EX1058,234:1-10.

⁵This argument is *ipse dixit*. EX2029, ¶¶205-228.

E. Kircher/Krug Discloses Elements–1[f]/6[d]/7[b]

Sterling contends that Krug (in isolation) does not disclose Elements–1[f]/6[d]/7[b] because Krug fails to “*identify*” a second user “that is both ‘*a recipient of the piece of electronic content*’ and that is ‘*cognate to the user.*’” POR,30-32.

But Sterling ignores the Petition, the combination, and the language of the claims.

In the '217 Patent, there are multiple approaches to identifying a “cognate group” through similarity analysis: “role or group based; collaborative filtering....” EX1001,43:30-37. Groups can also be defined by “direct input by a user.” EX1001,14:44-46; Pet.,18-20.

In Krug, user groups can also be assigned explicitly “by a user” or “implicitly.” EX1008,[0031]. Implicit assignment of groups is based on user “behavior.” *Id.*,[0056],[0011]. One example of a user group in Krug is “all users who access a specific object” (“Access Group”). EX1008,[0031]; Pet.,66-67. Identifying Access Groups is an example of role- or group-based determinations that are based on user behavior in **accessing** an object. EX1004,¶509; EX1008,[0031]: EX1001,43:30-37. Indeed, the specification describes identifying cognate groups based “allowed readers (access rights).” EX1001,44:43-57; EX1050,143:12-144:21. Therefore, Krug identifies (using a role-based determination) a group of users that

are “*cognate to the user*” in the same way as the ’217 Patent. Every member of that group is “*at least one other of the plurality of users that...is cognate to the user.*”

Each member of the Access Group is also “*a recipient of the piece of electronic content.*” Since all members of the group “**access a specific object**” they must have received that specific object. Pet.,66; EX1004,¶505. Therefore, each other member of this group is **both** a “*recipient*” and “*cognate*” to the user.

Even if two different groups were used, Krug explains that “[a] single user can be assigned to any number of groups.” EX1008,[0031]. Groups can be of “any nature.” *Id.*,[0110]. So a group can be formed (1) for the Access Group and (2) “all women.” It is obvious to identify two users that are part of multiple overlapping groups—e.g., two women with access to the same document. EX1004,¶245 (“two users who interact with the same item offer the greatest indicator of relevance for that data item.”)

Based on its faulty construction of “*recipient*,” Sterling contends that “Krug’s users do not ‘receive’ any ‘sent’ content.” POR,31. But, in the combination, “Kircher’s emails would have been ranked (in-part) using Krug’s comparison value.” Pet.,58; EX1004,¶572. It is undisputed that Kircher’s emails are “sent from a sender.” EX1058,211:3-5; EX1007,Fig. 3B. In the combination, two users who receive the same email would both be in the Access Group. *Id.*; EX1004,¶572.

Sterling also contends the system must identify a singular user and cannot identify a “cognate group.” POR,33-34. But as explained above (§III.B.2), Sterling’s construction ignores the claims (“*at least one*”) and specification (“cognate groups”). Regardless, any single user in the Access Group is **both** a shared “*recipient*” and “*cognate*” to each user.

Sterling asserts that Krug does not teach “**desirability** of ‘*identifying*.’” POR,31,32. Krug describes several benefits of using user groups, including identifying “group-specific favorites” (EX1008,[0028],[0032]) and using group-profiles to identify documents (*Id.*,[0031]). These benefits would have motivated a POSA to use Krug’s user groups. Otherwise, the patentee’s desire to “identify” groups is immaterial. *KSR*, 550 U.S. at 419 (motivation of patentee irrelevant).

Sterling also claims that “Krug does not teach any math to “*identify*” a second user.” POR,2. But Krug includes extensive disclosure on the math used to identify user groups. EX1004,¶471; EX1008,[0027],[0056],[0067]-[0095]. Sterling also contends that Dr. Houh failed to address the identifying “verb.” POR,30-31. This is false. EX1004,¶506(“Krug discloses *identifying* a ‘cognate group’...”),¶500(“*identify[ing]*...”),¶501-502,¶506-509,¶511.

F. Ground 5 and Other Limitations

Sterling does not contest that Kircher/Krug discloses every other limitation of Claims 1/6/7, Claims 2-3, 5, 8-9, 13-15, 18-22 (**Ground 4**), and when combined with Marston Claims 4, 10-12, 16-17, 20-21 (**Ground 5**).

V. Dumais is Prior Art

When a patentee attempts to “antedate an asserted prior art reference” they assume “a temporary burden of production.” *Parus Holdings, Inc. v. Google LLC*, 70 F.4th 1365, 1371 (Fed. Cir. 2023). This burden “cannot be met without some combination of citing the relevant record evidence **with specificity** and explaining the significance of the produced material **in briefs**.” *Id.*, 1372. Here, without explaining their relevance, Sterling cites to (1) EX2005-EX2013; EX2032-EX2078; (2) multiple declarations (EX2003; EX2030; EX2031), and (3) an unsworn claim chart (EX2014)—totaling over 2,600 pages—as alleged evidence of conception and reduction to practice. POR,6,46,47; §V.B (EX2014 should be given no weight). The Board should not “sift through hundreds of documents, thousands of pages, to find the relevant facts.” *Parus*, 70 F.4th at 1371-1372; *Costar Realty Info., Inc. v. Clantech, Inc.*, IPR2022-00800, Paper 77, 29-30 (P.T.A.B. Nov. 16, 2023) (burden of production not met by sparse citations to 112 exhibits).

Sterling’s unexplained citations should also be ignored as improper incorporation by reference. 37 C.F.R. §42.6(a)(3); Practice Guide, 35-36.

A. Sterling's Conception Evidence Is Uncorroborated

Sterling's "conception evidence" is based on the declarations of the named inventors, Justin Marston (EX2030) and Paul Marston (EX2031) and two documents (EX2004; EX2006). POR,42 (Defining EX2004 and EX2006 as "Conception Documents").

To prove conception, there must be corroborating evidence, "in addition to [the inventor's] own statements and documents." *Apator Miitors ApS v. Kamstrup A/S*, 887 F.3d 1293, 1295 (Fed. Cir. 2018). "[E]vidence of corroboration must not depend solely on the inventor himself." *Id.*

Sterling's evidence is solely from the inventors. Sterling contends the "Conception Documents disclose each limitation of the Challenged Claims." POR,42. While corroboration is not required to prove what "a physical exhibit...includes," *Price v. Symsek*, 988 F.2d 1187, 1195 (Fed. Cir. 1993), the Conception Documents lack any indication the Marstons authored them. The metadata for "author" is blank and indicates they were last saved by "Ba1" (EX2004) and "n/a" (EX2006). EX1068-1070. There is no corroborating evidence outside of the inventors' testimony.⁶ *Kolcraft Enters., Inc. v. Graco Children's Prods., Inc.*,

⁶The inventors are being paid \$500/hr for their testimony. EX1050,76:11-77:6; EX1064,136:5-22.

927 F.3d 1320, 1324-26 (Fed. Cir. 2019) (inventor testimony is not corroborating evidence).⁷

This contrasts with other documents that indicate “Marston” authored them. EX1068. These “Marston”-authored documents are short descriptions of math in isolation. Not even Sterling contends these documents demonstrate a “definite and permanent idea of how to make” the claimed invention. *Singh v. Brake*, 317 F.3d 1334, 1342 (Fed. Cir. 2003).

B. Named Inventors Did Not Conceive Claims Before Dumais

The only mapping of Conception Documents to the claims is EX2014, which Justin Marston testified that he created. EX1050,201:3-13. However, for nearly every limitation, EX2014 relies on what a “skilled artisan would understand from the documentation.” EX2014,4; EX1050,197:21-200:17.

“To offer expert testimony from the perspective of a skilled artisan...a witness must at least have ordinary skill in the art.” *Kyocera Senco Indus. Tools Inc. v. Int'l Trade Comm'n*, 22 F.4th 1369, 1376-1377 (Fed. Cir. 2022). Justin Marston does not have the requisite level of skill under any of the proffered definitions of a POSA.

⁷The accuracy of Sterling’s declarations is questionable. Justin Marston testified that he was “CEO of BlueSpace during the Summer 2005” (EX2030,¶19) but his CV states that he “gave up the CEO role around 2003, but took it up again in the Summer of 2006.” EX1051,2.

ID,8. EX1050,58:10-59:7 (“I have a degree and a Master’s degree in chemistry”). EX2014 should be given no weight. *Kyocera*, 22 F.4th at 1377.

1. Work of Unnamed Inventors Undercuts Purported Conception

Sterling must establish that Justin and Paul Marston had the idea “so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice.” *Dawson v. Dawson*, 710 F.3d 1347, 1352 (Fed. Cir. 2013). However, metadata and native documents show significant inventive contributions from Jon Fernyhough after the critical date.

The claims are directed to a “*computer program*,” “*an application for managing electronic content*,” and “[a] *computer program product*.” And Sterling argues that “*computer program modules*” are the “structure” of the claim. POR,16; EX2003,¶16. The claimed “*programs*” would not have been possible without Fernyhough because neither Marston has a background in computer science. EX1050,113:15-114:1, 58:10-59:7; EX1064,31:1-4.

Fernyhough was a “chief coder[]” at BlueSpace (original assignee). EX1064,38:15-21. Fernyhough focused on “software implementation,” and was responsible for taking “mathematical concepts and turning them into a [practical] computer program.” *Id.*,40:19-20;41:15-18. From August-November 2005 (months after Dumais), Fernyhough worked with the Marstons to develop strategies to address “scalability” issues (EX2071, EX2070, EX2065-EX2069), and making the

math work on a computer. EX1050,83:11-84:3,163:7-3; EX1064,74:12-15; EX2056-2058 (Authored by Fernyhough). Fernyhough participated in nearly every communication and draft of the application between August-November 2005 (EX2063-EX2071; EX1064;65:4-13). None of Sterling's evidence or bias testimony refutes Fernyhough's substantive contributions to the claims.⁸

2. The Conception Documents Do Not Disclose the
"Identifying..." Limitation (Elements-1[f]/6[d]/7[b])

Sterling's arguments for the "*identifying...*" limitation are inconsistent with the Conception Documents. For the prior art Sterling contends that "*identifying...*" is narrow, but it has not shown the Conception Documents disclose "*identifying...*"

Sterling contends six passages from the Conception Documents demonstrate complete conception of "*identifying...*". EX2014,5. But Sterling's own expert testified that similar passages in the specification do not disclose "*identifying...*". EX1058,114:10-115:15;123:3-131:21 (EX1001,8:23-25,43:30-37,12:50-59,14:45-67 are not examples of "*identifying...*"). For example, Sterling cites EX2006, 22, which describes assigning an initial relevance value to a "new entity" (person) based on a "tree structure." EX2014,5. But, Dr. Khan testified the "tree structure" in the specification (14:45-53) does not describe "*identifying...*" because "it doesn't satisfy whether the person will receive the same electronic message." EX1058,129:10-23.

⁸EX2046 (unredacted-EX1071) shows there is no independent corroboration of J. Marston's inventorship claims.

3. The “Ideas” In Conception Documents Are Incomplete

The math and “algorithms” sections of the Conception Documents state: “INITIAL MATHS HAS BEEN DRAFTED WITH A MATHEMATICIAN, BUT IS IN NEED OF SIGNIFICANT CHANGES.” EX2004,29; EX2006,53. Justin Marston confirmed that algorithms in the Conception Documents were not a “complete set of algorithms” but part of the “creation process...**of the idea.**” EX1050,149:19-150:3; EX2064,4 (“Alterations to document”); EX2073,71. The “algorithms” section was rewritten in August 2005. *Compare* EX2006,§9 with EX2007,§9. Sterling has provided no evidence that the “INITIAL MATHS” functioned in the manner recited by the claims. POR,§II.C.

Sterling’s witnesses testified the “math involved” in the invention is “highly complex,” and “took significant effort to develop.” EX2003,¶11(c); EX2029,¶88; EX1064,13:20-22; EX1058,200:19:25;252:15-19 (“extensive experiment[ation]” and “empirical study” required). Paul Marston testified that “an ordinary skilled person wouldn’t understand” even how to tweak the formulas. EX1064,95:1-13. Since more than “ordinary skill [was] necessary to reduce the invention to practice,” conception did not occur before June 29, 2005. *Dawson*, 710 F.3d at 1352-54.

C. Named Inventors Were Not Diligent

The inventors were not diligent between June 29, 2005 (Dumais) and January 13, 2006 (Provisional). “The reasonable diligence standard balances the interest in

rewarding and encouraging...the earliest possible disclosure of innovation.” *Griffith v. Kanamaru*, 816 F.2d 624, 626 (Fed. Cir. 1987).

During the 198-day (135-business-day) critical period, the joint inventors worked a mere 108 hours on the alleged invention (1.5 work weeks for both inventors). EX1050,297:6-300:16 (20+3+55+30+0); EX1064,116:10-22 (refusing to estimate);114:21-22.

Sterling claims the inventors were busy with work unrelated to the '217 patent. EX2030,¶7(“...working on other technologies”),¶¶9-12(other activities); EX2031,¶15(same). While “reasonable everyday problems and limitations encountered by an inventor” may be excused, long gaps exist during the critical period. *Griffith*, 816 F.2d at 626-627. The inventors “possessed the capacity to” develop the invention but instead “pivot[ed]” to develop “other technologies” they felt would be more lucrative. *Id.*, EX1050,20:2-13,44:13-45:2,46:20-47:11. Sterling’s “commercial development, [is] not accepted as an excuse for delay.” *Id.*

Justin Marston sought to establish diligence with two document logs. EX2030,¶¶10,19,25,36,49,53. But these logs confirm that the inventors were not working on the claimed invention. Of the hundreds of documents listed on EX1055 (“Updated EX2041”) Justin Marston could only identify **one** document related to the claimed inventions. EX1050,208:21-209:4,212:12-215:7. And the “Updated log of privileged documents” (EX1056) merely shows the “existence of those emails”

(Paper 31) and not that any of the emails related to the claimed invention or support diligence. Indeed, Justin Marston did not have “any communications relating to this patent application” prior to January 11, 2006. EX1050,220:16-221:2,221:22-222:5,228:4-20,242:8-11.

A two-month gap before January 11, 2006 is also unexplained. Justin Marston testified that between November 13, 2005 and January 11, 2006⁹ (59 days) both he and Paul Marston “did not spend any time on the provisional application.” EX1050,299:12-300:15; EX2030,¶¶50-53; EX1064,84:21-24. Justin Marston claimed he was working on “other tasks for BlueSpace.” EX2030,¶52. At this same time, Paul Marston was on winter break at his university. EX1064,102:23-103:2; EX1066.

There are an additional 167 days of unexplained gaps in diligence, including: (1) June 7 and Aug. 4 (59 days); (2) Aug. 25 and Sep. 19 (25 days); (3) Oct. 15 and Nov. 9 (25 days). EX1068,1-4. These unexplained gaps undermine Sterling’s claim of diligence. *In re Meyer Mfg. Corp.*, 411 F. App’x 316, 319 (Fed. Cir. 2010) (no diligence due to “unexplained gap of just over two months”); *Griffith*, 816 F.2d at 627 (no diligence based on three-month delay).

Sterling contends that a “variety of activities” can support diligence and that the Board should not “scour” the record. POR,44-55. But the inventors admit they

⁹The provisional application was sent to counsel on Jan. 11, 2006 (EX2030,¶54).

were working on “other technologies and inventions” and not the ’217 Patent. EX2030, ¶¶7,9,11,18,24,35,48,52. Sterling’s case citations confirm that while there is “no rule requiring a specific kind of activity” the inventors must be “reasonably diligent in proceeding **toward**...reduction to practice.” *Brown v. Barbacid*, 436 F.3d 1376, 1380 (Fed. Cir. 2006). In *Brown*, except for a few “single-day gap[s]” the inventors worked on a FT assay directly related to the invention. *Id.*, 1381-1382; *Perfect Surgical Techniques, Inc. v. Olympus America, Inc.*, 841 F.3d 1004, 1011 (Fed. Cir. 2016) (similar). The inventors’ work on other projects does not constitute reasonable diligence in reducing to practice **the claimed inventions**. *Id.*

Sterling’s citation to *Monsanto Co. v. Mycogen Plant Sci., Inc.*, 261 F.3d 1356 (Fed. Cir. 2001) is also inapposite. In *Monsanto*, the claims related to “genetically altering plants.” *Id.*,1359. The Court affirmed a jury finding that “growing plants” for future testing was “ongoing” diligence activity. *Id.*,1370. Here, there is no evidence of “ongoing” experiments (like growing plants).

VI. Grounds 1-3: Dumais (With/Without AAPA/Marston)

A. Dumais Discloses Elements—1[f]/6[d]/7[b]¹⁰

¹⁰Sterling again contends that Dumais is “very different” from (POR,49) and does not teach the “desirability” of the invention (POR,52). But mere “distinctions” and the patentee’s “desire[s]” are immaterial. *Supra* §IV.D,§IV.E.

Sterling contends Dumais does not teach “*identifying*” a “*recipient*” and that Petitioner “ignore[s] [the] ‘*recipient*’ requirement.” POR,49-51. This is false. But even under Sterling’s incorrect construction, Dumais discloses a “*recipient*.”¹¹

The Petition explains how Dumais processes and assigns relevance rankings to “data items.” EX1006,[0031]; Pet.,24. Dumais’ “data items” can include “email messages” that can be “forwarded, replied to, sent to.” EX1006,[0022],[0031]. An email is “sent from a sender to a user.” EX1004,¶192.

Sterling also contends that Dumais does not identify “another ‘user’ that is “cognate to the user” and “receive[s] the same content.” POR,52.

The Petition explains that Dumais identifies a “group” of relevant users based on “previous user activities from a group of users” and “usage of items” to “indicate preferences for a given user.” Pet., 32; EX1006,[0052],[0055]. In particular, Dumais uses “collaborative filtering” to identify user groups (EX1006,[0052]-[0055]). The ’217 Patent states that “collaborative filtering” can identify “cognate groups.” EX1001,43:30-37. Therefore, Dumais identifies a cognate “group” in the same way as the ’217 Patent.

The Petition then explains that “at least one user in the group ‘*is a recipient of the piece of electronic content,*’” and explains how “two users who had similar

¹¹Sterling again contends that Dr. Houh failed to address the identifying “verb.” POR,50-51. This is false. EX1004,¶¶244-250.

interactions with the **same data item would have a high degree of similarity and would be grouped.**” Pet.,33-34. In short, a POSA would have understood that Dumais groups recipients of the “same data item” based on shared or similar past interactions. Thus, the members of the cognate “group” are also a “*recipient*.” EX1004,¶¶245-247.

B. Ground 3 and Other Limitations

Sterling does not contest Dumais discloses every other limitation of Claims 1/6/7, Claims 2-3, 5, 8-9, 13-15, 18-19, 22 (**Grounds 1-2**), or Claims 2-5, 8-22 (**Ground 3**) when combined with Marston.

VII. Secondary Considerations

For “secondary considerations,” Sterling offers only attorney argument unsupported by testimony or evidence. Sterling’s attorney argument should be rejected. *Bos. Sci. SciMed, Inc. v. Iancu*, 811 F. App’x 618, 628 (Fed. Cir. 2020).

A. No Nexus

Sterling asserts (a) commercial success, (b) failure and praise by others, and (c) copying based on Meta/X products. POR,53-56. But Sterling provides no analysis linking the claims to Meta/X products. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995) (nexus required). Sterling provides only a conclusory assertion that X uses the ’217 Patent’s “cognate” relevancy algorithm. POR,54; EX1050,295:18-296:11; EX1058,254:2-7; EX1064,135:5-11 (never reviewed X’s code).

Whether Meta/X products practice the claims is a contested factual issue. The Board should decline Sterling’s invitation to decide these factual infringement issues without a full record. *Apple Inc. v. Koss Corp.*, IPR2021-00305, Paper 47, 43-44 (P.T.A.B. May 31, 2022).

B. Claimed Invention Had No Commercial Success

BlueSpace (original assignee) had a commercial email system called TransMail. Despite its intention to include the claimed invention in its product, the inventors “pivoted” to other products because they felt there was no “money” in it. EX1050,20:2-13,44:13-45:2,46:20-47:11.

Sterling contends that X’s commercial success occurred after 2016 when X introduced the relevancy algorithm “for you” feed. POR,54-55. But Sterling’s own expert has published multiple papers documenting X’s exponential growth **before** 2016 for reasons unrelated to the Claims. EX1058,134:3-15;136:4-16,139:1-15, 148:25-150:8 (X’s success from users “spread[ing] the news or articles” and “express[ing] their opinions.”); EX1059,1813.

C. No Other Objective Indicia Should Be Given Weight

Long-Felt Need/Recognition: Sterling’s conclusory specification citations fail to establish a long-felt need for (or recognition of a problem solved by) a system that determines electronic content relevance. POR,54-55. Sterling does not explain how the Claims solved this need, provides no evidence of this alleged need beyond

the specification, and “ignore[s] the teachings of other asserted prior art references” (Dumais and Kircher/Krug), which solved the alleged need earlier. *Nike, Inc. v. Adidas AG*, 955 F.3d 45, 55 (Fed. Cir. 2020).

Failure/praise: Sterling alleges that X’s use of a “reverse-chronological feed” before 2016, and not X’s “for you” algorithm, “demonstrates non-obviousness.” POR,55. But X grew exponentially before 2016. EX1058,134:3-15. Nor is there any evidence that X **failed** to implement the claimed algorithm or that X’s current algorithm is coextensive with or a direct result of the claims. Sterling’s purported evidence is a statement that X’s algorithm had “a better [user] experience.” POR,55. This generality lacks a legal nexus to the claims. *Id.*

Copying: Sterling asserts Meta/X copied the invention. POR,56. Copying “requires evidence of efforts to replicate a specific **product**.” *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010). But BlueSpace never commercialized the Claims; there is no product Meta/X could have copied. EX1050,44:13-45:13.

VIII. Conclusion

Claims 1-22 of the ’217 patent are unpatentable.

Dated: December 17, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §42.6(e), I hereby certify that on this 17th day of December, 2025, I caused to be served a true and correct copy of the foregoing and any accompanying exhibits by e-mail on the following counsel:

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CERTIFICATE OF WORD COUNT

The undersigned certifies that the foregoing Petitioner's Reply to Patent Owner's Response contains 5,599 words according to the word count of the word-processing program used to prepare this Reply.

Dated: December 17, 2025

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