

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,

Petitioner,

v.

HEADWATER RESEARCH LLC,

Patent Owner

IPR2026-00138

Patent No. 9,609,544

PATENT OWNER'S PRELIMINARY RESPONSE

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PATENT OWNER'S EXHIBIT LIST

No.	Description
2001	Confidential License Agreement
2002	Second Amended Complaint in <i>Headwater Research, LLC v. Samsung Electronics Co., Ltd. et al.</i> , No. 2:22-CV-00422-JRG-RSP (E.D. Tex.)
2003	Exhibit C to Headwater' Preliminary Infringement Contentions (served April 12, 2023) in <i>Headwater Research, LLC v. Samsung Electronics Co., Ltd. et al.</i> , No. 2:22-CV-00422-JRG-RSP (E.D. Tex.)
2004	Excerpt of the January 23, 2024 deposition transcript of Jeff Sharkey in <i>Headwater Research, LLC v. Samsung Electronics Co., Ltd. et al.</i> , No. 2:22-CV-00422-JRG-RSP (E.D. Tex.) (redacted to remove any potential confidential information)
2005	Ben Schoon, <i>Google Pixel development reportedly moving almost entirely out of China</i> , 9TO5GOOGLE.COM, https://9to5google.com/2026/01/13/google-pixel-development-china-report/ , Jan. 13, 2026
2006	<i>TRUMP EFFECT: A Running List of New U.S. Investment in President Trump's Second Term</i> , THE WHITE HOUSE, https://www.whitehouse.gov/articles/2026/03/trump-effect-a-running-list-of-new-u-s-investment-in-president-trumps-second-term/ (Mar. 10, 2026)
2007	Matthew Gardner, <i>Four Big Tech Companies Avoid \$51 Billion in Taxes in Wake of One Big Beautiful Bill Act</i> , INSTITUTE OF TAXATION AND ECONOMIC POLICY, https://itep.org/trump-meta-tesla-alphabet-amazon-obbba-taxes/# (Feb. 6, 2026)
2008	<i>Investing in America 2025</i> , GOOGLE, available at https://blog.google/company-news/inside-google/company-announcements/investing-in-america-2025/ (last visited Mar. 23, 2026)
2009	<i>Apple and Corning Partner to Manufacture 100 Percent of iPhone and Apple Watch Cover Glass in Kentucky</i> , APPLE,

	https://www.apple.com/newsroom/2025/08/apple-corning-to-manufacture-all-iphone-apple-watch-cover-glass-in-kentucky/ (Aug. 6, 2025)
2010	Intentionally omitted
2011	<i>What is an Android Phone?</i> , SAMSUNG, available at https://www.samsung.com/uk/mobile-phone-buying-guide/why-android/ (last visited Mar. 23, 2026)
2012	Notice of Appearance for Lance Yang as counsel for Samsung in <i>Headwater Research, LLC v. Samsung Electronics Co., Ltd. et al.</i> , No. 2:22-CV-00422-JRG-RSP (E.D. Tex.)
2013	Headwater’s December 19, 2025 Preliminary Infringement Contentions in <i>Headwater Research LLC v. Google LLC</i> , 7:25-cv-00518-DC-DTG (W.D. Tex.)
2014	Google’s March 9, 2026 Preliminary Invalidity Contentions in <i>Headwater Research LLC v. Google LLC</i> , 7:25-cv-00518-DC-DTG (W.D. Tex.)
2015	Google’s Petition in <i>Google LLC et al. v. Headwater Research LLC</i> , IPR2024-00945 (June 7, 2024)
2016	Headwater’s Preliminary Response in <i>Google LLC et al. v. Headwater Research LLC</i> , IPR2024-00945 (Sept. 18, 2024)
2017	Declaration of Erik de la Iglesia in support of Patent Owner’s Preliminary Response in <i>Google LLC et al. v. Headwater Research LLC</i> , IPR2024-00945 (Sept. 18, 2024)
2018	Decision Denying Institution of <i>Inter Partes</i> Review in <i>Google LLC et al. v. Headwater Research LLC</i> , IPR2024-00945 (Sept. 18, 2024)

I. Introduction

Should the Director refer this case for consideration of the merits, Patent Owner Headwater will promptly disclaim all claims except claim 2 of the '544 patent pursuant to 35 U.S.C. §253 in order to simplify proceedings, thus leaving claim 2 as the only remaining claim challenged by Google's Petition.¹ Because the Board may not institute an *inter partes* review based on disclaimed claims,² institution of this proceeding would be appropriate only if the Petition can demonstrate a reasonable likelihood of prevailing with respect to claim 2.

The Petition, however, cannot succeed with respect to claim 2 because the Petition's claim 2 combination is based on the combination of the same elements of Rao and Freund in exactly same nonsensical way that Google alleged (and failed to

¹ Disclaimed claims are "treated as though the disclaimed claims never existed" in the original patent. *See Vectra Fitness, Inc. v. TNWK Corp.*, 162 F.3d 1379, 1383 (Fed. Cir. 1998) ("A statutory disclaimer under 35 U.S.C. § 253 has the effect of canceling the claims from the patent and the patent is viewed as though the disclaimed claims had never existed in the patent."). Headwater does not concede the merits of the Petition's challenge as to any claims; disclaimer of the referenced claims is merely to simplify proceedings. This simplification will be significant in light of the strength of claim 2 over Google's prior art theory, as explained herein.

² 37 C.F.R. § 42.107(e) ("No *inter partes* review will be instituted based on disclaimed claims.").

show) would have been obvious in *Google LLC et al. v. Headwater Research LLC*, IPR2024-00945. *See* Ex. 2018 (Decision Denying Institution in IPR2024-00945) at 31–32 (crediting Headwater’s argument and evidence that Rao and Freund have “contradictory teachings regarding treatment of foreground activity” such that a POSITA would not have been motivated to “supplement Rao’s treatment of foreground activity [with Freund’s] teachings that explicitly disfavor foreground activities”). As explained herein, this is the *same* combination of elements Google again alleges would have been obvious in order to arrive at the requirements of claim 2. And Google has made no attempt to cure the deficiency previously recognized by the Board in this regard.

Because Google yet again fails to show why it would be obvious to combine the teachings of Freund as they pertain to foreground classification with the teachings of Rao, institution should be denied.

II. Google’s proposed combination with Rao with Freund to arrive at claim 2 is not obvious.

A. The Board has already considered (and rejected) the obviousness of combining Rao with Freund in the manner Google alleges here.

In IPR2024-00945, Google attempted to supplement Rao’s teachings relating to foreground classification with Freund’s teachings relating to foreground classification. *See* Ex. 2015 (Google’s Petition in IPR2024-00945) at 13–14

(discussing the combination of Rao’s teachings of controlling network traffic “by distinguishing between foreground and background activity,” with Freund’s teachings “distinguish[ing] between network activity based on whether it is foreground or background activity”). What Google overlooked in that proceeding, however, was that “Rao teaches that in prioritization decisions, foreground activity should be *prioritized* over background activity,” whereas “Freund teaches the opposite—that foreground activity should be *disfavored* relative to background activity.” Ex. 2016 (Headwater’s POPR in IPR2024-00945) at 23 (emphases in original).

As Headwater explained in that proceeding:

[T]he Petition provides no motivation to combine Rao’s teachings (wherein *foreground* activity should be prioritized over background activity) with Freund’s teachings that *background* activity should be prioritized by exempting that activity from usage restrictions designed to “limit[] an employee’s ‘counterproductive Web browsing.’” [Ex. 2015]³ at 27 (quoting Ex. 1007 [Freund], 10:16-43). As Patent Owner’s expert explains, “if a POSITA were looking for ways to supplement Rao’s treatment of foreground activity, they would not have looked to

³ Citations in quotations from IPR2024-00945 have been updated to reflect the exhibit numbers used in this proceeding.

teachings that explicitly disfavor [foreground] activities, contrary to Rao's teachings." Ex. [2017], ¶79.

Ex. 2016, 28 (emphases in original).

The Board considered these arguments as to why a POSITA would not have been motivated to combine Rao's foreground classification teachings with Araujo's foreground classification teachings (given the contradictory purposes of those teachings), and found "Patent Owner's arguments and cited evidence sufficiently persuasive to defeat institution in this case, for the same reasons and evidence proffered by Patent Owner." Ex. 2018 (Decision Denying Institution in IPR2024-00945) at 32. As one example, the Board credited "Patent Owner's expert's persuasive testimony" that "if [the skilled artisan] were looking for ways to supplement Rao's treatment of foreground activity, they would not have looked to teachings that explicitly disfavor foreground activities, contrary to Rao's teachings." *Id.* (quoting Ex. 2017 ¶ 79 (cited at Ex. 2016, 28)).

Google's claim 2 theory in this proceeding suffers from the *exact same problem*. As Patent Owner previously explained (and the Board previously recognized) in IPR2024-00945, Rao and Freund are contradictory in their approaches to treatment of foreground activities, such that a POSITA would not seek to combine the teachings of these two references in this manner. Yet that is *exactly* what the instant Petition yet again proposes, relying on Freund for its teachings

regarding “determining the first device application is in the foreground of user interaction” (Pet. 52, relying solely on Freund’s foreground teachings to arrive at the dependent limitation of claim 2) in combination with Rao’s foreground prioritization teachings (*see, e.g.*, Pet. 18–22, relying on Rao’s foreground teachings for limitations of independent claim 1).

And despite being on notice of this deficiency of Google’s theory based on the decision denying institution in IPR2024-00945, Google *again* fails to justify its combination of these contradictory teachings of Rao and Freund. For instance, the Petition’s discussion of the “Rao-Araujo-Freund” combination fails to address the fact that Freund *disfavors* foreground activity, much less explain why Freund’s treatment of foreground activity would be obvious to combine with Rao and Araujo in the proposed manner. *See generally* Pet. 48–51.

Indeed, the Petition incorrectly states that Rao and Freund have “*similar* types of policies.” Pet. 51 (emphasis added). This is nearly identical to the argument Google raised (and the Board rejected) in IPR2024-00945. *See* Ex. 2016 at 26 (“[T]he Petition alleges that ‘given *Freund’s and Rao’s similarities*, a POSA would have been motivated to implement Freund’s teachings in Rao.’ [Ex. 2015 at] 14. However, the specific teachings relied upon regarding treatment of foreground and background activity are not similar at all—as explained by Patent Owner’s expert, a POSITA would have seen those teachings as fundamentally *contradictory* in terms

of how Rao and Freund favor and disfavor foreground activity, respectively. [Ex. 2017], ¶76.”) (emphases original to Ex. 2016). The same result should apply here.

B. Rao and Freund teach inconsistent approaches to foreground activity such that it would not be obvious to combine them.

Mindful of the Board’s regulations that arguments “must not be incorporated by reference from one document into another document” (37 C.F.R. § 42.6(a)(3)), this section addresses in more detail the specific reasons why Rao and Freund have inconsistent approaches to foreground treatment such that it would not be obvious to combine them to arrive at claim 2 in the manner Google alleges. These arguments are substantially similar to the arguments Headwater presented (and the Board accepted) in IPR2024-00945, but also address the specific allegations Google makes in this proceeding.

As the Petition acknowledges, Rao teaches that in prioritization decisions, foreground activity should be *prioritized* over background activity. *See* Pet. 59 (alleging that it would be obvious to permit traffic “*only if*... an application is in the foreground (per Rao)”); *see also* Ex. 2015 at 21 (Google’s prior discussion of Rao’s benefits of “prevent[ing] background activity from being processed ahead of foreground activity”).

In contrast, Freund teaches the opposite—that foreground activity should be *disfavored* relative to background activity. Ex. 2017, ¶¶70-71. The sole mention of

“foreground” in Freund (and the only discussion the Petition relies on in Freund for purposes of claim 2) teaches:

3. Monitoring and regulating time spent on the Internet

Perhaps the aspect of Internet access most important to productivity of an organization is the ability to monitor and regulate the amount of time employees spend on the Internet. Although the Internet is an increasingly important business tool, it also poses a temptation to employees for use to pursue their own private interests while seemingly working.

The Internet access monitoring system of the present invention addresses this problem by allowing an organization to monitor and control the time its employees spend on the Internet. The actual monitoring can be done in a variety of ways, including monitoring the time spend by an employee to actively interact with the Internet, monitoring the total time applications access the Internet, and/or mon[i]toring the total time particular users/workstations access the Internet. The option of employing different approaches is an important one, as no one approach will likely answer all monitoring needs of an organization.

Consider, for example, the monitoring of time spent by an employee for "actively" interacting with the Internet. . . . Here, certain Internet applications, such as news collecting programs (e.g., PCN), access the Internet in the background while the user attends to other unrelated tasks in the foreground. The Internet access time of a user for a given

day, therefore, is not necessarily equivalent to the time the user actively spends browsing Web sites. Conventional technologies cannot distinguish between this "active" versus "passive" access and therefore cannot present an accurate picture of the actual time the user has spent on on-line activities. Accordingly, it is desirable to monitor the time an employee spends "actively" interacting with the Internet, so that management goals of control[ing] counterproductive Web browsing can be realized. *In the currently-preferred embodiment, the system may be configured such that access to the Internet which occurs in the background is not counted against the per-day time limit imposed on users.*

Ex. 1007, 9:64-10:44 (emphases added).

In other words, Freund teaches that a central authority within an organization will specify certain restrictions on active user Internet access. The goal of this restriction is not to *improve* user experience (as in Rao); rather, the goal is to improve “productivity of an organization” by *preventing* users from “pursu[ing] their own private interests” in the workplace. Ex. 2017, ¶72.

Moreover, Freund teaches that its system (contrary to Rao) is more *restrictive* of foreground activity relative to background activity, because “background” Internet usage “is *not* counted against the per-day time limit imposed on users,” such that only “active” (e.g., “foreground”) activity is restricted. Ex. 1007, 10:17-40 (emphases added).

And like in IPR2024-00945, Google provides no plausible motivation to combine Freund's teachings regarding foreground classification with Rao's foreground prioritization, given their opposing treatment of foreground and background activity. Ex. 2017, ¶73.

Even to the extent that combining *other* aspects of Freund with Rao may allegedly be obvious (such as, e.g., user interface teachings of Freund or teachings regarding how policies may be configured), that does not justify the specific combination of elements required by claim 2 of the '544 patent which specifically requires Freund's classification of foreground activity. *See generally* Pet. 52. Indeed, Google already argued that "Freund details how a user may configure policies, offering exemplary interfaces" in IPR2024-00945 (*see* Ex. 2015 at 13), but that was insufficient to motivate the *specific combination of elements* proposed in that proceeding and likewise proposed by Google to arrive at claim 2 in this proceeding.

Google's specific motivations to combine Rao with Freund do nothing to address the same deficiency the Board found in IPR2024-00945. For instance, Google alleges that "for details on the user interface (UI), a POSITA would have looked to references such as Freund." Pet. 49. But again, that says nothing of the obviousness of combining Freund's *foreground classification* teachings with Rao, given the two references' contradictory approach to treatment of foreground activity.

Likewise, Google’s allegation that “a POSITA would have looked to references such as Freund” “[f]or implementation details relating to obtaining the policies” (Pet. 50) is unavailing, because techniques for performing foreground classification (i.e., the teachings of Freund Google relies upon to arrive at claim 2) are not techniques for “obtaining the policies.” *See, e.g.*, Ex. 2017, ¶76 (Patent Owner’s expert explaining how “user friendliness” is not a motivation to look to Freund’s teachings regarding foreground classifications).

Google also conclusorily asserts that “a POSITA would have recognized or found obvious a [combined] policy in which network traffic is permitted only if a user had not exceeded a configured Internet access limit (e.g., 30 minutes)... (per Freund), [and] an application is in the foreground (per Rao).” Pet. 50–51. To the extent this specific combined policy relies on Freund’s foreground treatment at all, it again does not explain why a POSITA would have been motivated to combine Freund’s restrictive approach to foreground activity with Rao’s permissive approach to foreground activity. *Cf.* Ex. 2017, ¶¶75, 78–79 (noting that Freund’s teachings of benefits of *Freund’s* approach does not motivate applying Freund’s approach in the context of Rao’s disclosure).

Finally, Google alleges that “[t]he combination would have been nothing more than the use of a known technique to improve similar mobile devices in a similar way, including combining similar types of policies, and combining prior art

elements according to known methods to yield the predictable results described above.” Pet. 51. This conclusory allegation, which echoes aspects of the Supreme Court’s opinion in *KSR*, relies on the false premise that the Petition’s claim 2 combination involves “combining *similar* types of policies,” as opposed to *contradictory* types of policies. Nor does Google’s conclusory allegation in this regard explain why a POSITA would have believed combining Freund’s foreground classification techniques with Freund would have “improv[ed]” the device taught by Rao in light of the fact that Freund classifies foreground activity in order to *restrict* it, whereas Rao *prioritizes* foreground data.

In sum, as was the case in IPR2024-00945, the Petition provides no motivation to combine Rao’s teachings (wherein foreground activity should be prioritized over background activity) with Freund’s teachings that that foreground activity should be classified to “facilitat[e] rules limiting an employee’s ‘counterproductive Web browsing.’” See Ex. 2015 at 27 (quoting Ex. 1007, 10:16-43). As Patent Owner’s expert previously explained (and the Board previously credited), “if a POSITA were looking for ways to supplement Rao’s treatment of foreground activity, they would not have looked to teachings that explicitly disfavor foreground activities, contrary to Rao’s teachings.” Ex. 2017, ¶79.

III. Conclusion

For the foregoing reasons, Patent Owner respectfully requests denial of

institution.

Date: April 22, 2026

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CERTIFICATION REGARDING WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Patent Owner certifies that there are 2,427 words in this paper excluding the portions exempted under 37 C.F.R. §42.24(a)(1).

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

The undersigned hereby certifies that the above document was served on April 22, 2026, by filing this document through the Patent Trial and Appeal Case Tracking System (P-TACTS) as well as delivering a copy via electronic mail upon the following attorneys of record for Petitioner:

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