

2022-1058

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

ROKU, INC.,

Appellant

v.

UNIVERSAL ELECTRONICS, INC.,

Appellee

**Appeal from the United States Patent and Trademark Office,
Patent Trial and Appeal Board in No. 2019-01615**

**APPELLANT'S COMBINED PETITION FOR
PANEL REHEARING AND REHEARING EN BANC**

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Dated: May 31, 2023

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

CERTIFICATE OF INTEREST

Case Number 22-1058

Short Case Caption Roku, Inc. v. Universal Electronics, Inc.

Filing Party/Entity Roku, Inc.

Instructions: Complete each section of the form. In answering items 2 and 3, be specific as to which represented entities the answers apply; lack of specificity may result in non-compliance. **Please enter only one item per box; attach additional pages as needed and check the relevant box.** Counsel must immediately file an amended Certificate of Interest if information changes. Fed. Cir. R. 47.4(b).

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Date: 05/31/2023

Signature: /s/ William H. Milliken

Name: William H. Milliken

<p>1. Represented Entities. Fed. Cir. R. 47.4(a)(1).</p>	<p>2. Real Party in Interest. Fed. Cir. R. 47.4(a)(2).</p>	<p>3. Parent Corporations and Stockholders. Fed. Cir. R. 47.4(a)(3).</p>
<p>Provide the full names of all entities represented by undersigned counsel in this case.</p>	<p>Provide the full names of all real parties in interest for the entities. Do not list the real parties if they are the same as the entities.</p> <p><input checked="" type="checkbox"/> None/Not Applicable</p>	<p>Provide the full names of all parent corporations for the entities and all publicly held companies that own 10% or more stock in the entities.</p> <p><input checked="" type="checkbox"/> None/Not Applicable</p>
<p>Roku, Inc.</p>		

Additional pages attached

4. Legal Representatives. List all law firms, partners, and associates that (a) appeared for the entities in the originating court or agency or (b) are expected to appear in this court for the entities. Do not include those who have already entered an appearance in this court. Fed. Cir. R. 47.4(a)(4).

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Lestin L. Kenton		
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5. Related Cases. Provide the case titles and numbers of any case known to be pending in this court or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal. Do not include the originating case number(s) for this case. Fed. Cir. R. 47.4(a)(5). See also Fed. Cir. R. 47.5(b).

None/Not Applicable Additional pages attached

Universal Electronics, Inc. v. Roku, Inc., No. 8:18-cv-01580 (C.D. Cal.)		

6. Organizational Victims and Bankruptcy Cases. Provide any information required under Fed. R. App. P. 26.1(b) (organizational victims in criminal cases) and 26.1(c) (bankruptcy case debtors and trustees). Fed. Cir. R. 47.4(a)(6).

None/Not Applicable Additional pages attached

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BB – Roku’s Principal Brief, Dkt. 14

RB – UEI’s Principal Brief, Dkt. 17

GB – Roku’s Reply Brief, Dkt. 21

Maj. – Panel Majority Opinion, Dkt. 40

Dissent – Dissenting Opinion of Judge Newman, Dkt. 40

INTRODUCTION

What should have been a garden-variety substantial-evidence appeal has produced a dangerous obviousness precedent—one as far-reaching as it is misguided.

The patent at issue concerns a universal remote control that can communicate with target appliances using different “communication methods,” like Consumer Electronics Control (CEC) and infrared (IR). As framed in the appeal briefing, this case presented a straightforward question about the incorrectness of a factual finding: the Board’s determination that prior-art reference Chardon’s listing of CEC-formatted and IR-formatted command codes does not teach or even *suggest* the claimed “listing comprised of at least a first communication method and a second communication method” (the “Listing Limitation”). But the panel majority—in a precedential decision and over a vehement dissent—did not decide that question.

Instead, the majority concluded that a *different* factual finding from the Board—that a generic listing of unformatted command codes is not a listing of communication methods—was supported by substantial evidence. And the majority then upheld the Board’s legal conclusion of non-obviousness without further analysis. In effect, then, the majority deferred to the Board on the ultimate legal issue, based solely upon a conclusion that one of its factual findings (and not

even the one in dispute) survived substantial-evidence review. That methodology flies in the face of precedent as old as the concept of obviousness itself.

The panel should grant rehearing and address the actual dispute: whether Chardon's listing of CEC-formatted and IR-formatted command codes teaches the Listing Limitation. On this record, there is only one supportable answer to that question: yes. CEC and IR are "communication methods," so Chardon's listing comprises two different communication methods (CEC and IR). It thus falls within the scope of the independent claim. Necessarily, then, the Listing Limitation is obvious over Chardon.

If the panel declines to grant rehearing, the full Court should take this case en banc. The panel majority's treatment of obviousness as effectively a question of fact contravenes 150 years of precedent holding that obviousness is a question of law. The majority never analyzed whether the Board's factual finding that a command code is not a communication method supported its legal conclusion of non-obviousness. The majority thus "abdicate[d] [its] role as the ultimate decision maker on the question of obviousness." *Richardson-Vicks Inc. v. Upjohn Co.*, 122 F.3d 1476, 1479 (Fed. Cir. 1997). En banc intervention is necessary to correct this error and restore this Court's place as the ultimate arbiter of obviousness law.

**POINTS OF FACT OR LAW OVERLOOKED OR
MISAPPREHENDED BY THE COURT**

The panel majority did not resolve the dispositive factual issue on appeal: whether Chardon's listing of CEC-formatted and IR-formatted command codes teaches or suggests the Listing Limitation. The undisputed facts allow for only one answer: yes. The Board's contrary finding lacks substantial evidence.

RULE 35 STATEMENT OF COUNSEL

Based on my professional judgment, I believe the panel majority's decision is contrary to *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007); *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966); and *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1987).

In addition, based on my professional judgment, I believe this appeal requires an answer to the following precedent-setting question of exceptional importance:

Whether this Court may terminate its review of a lower tribunal's obviousness analysis upon determining only that certain factual findings undergirding the analysis are supported by substantial evidence (as the majority did here), or whether the Court must also consider de novo whether those factual findings support the tribunal's ultimate legal conclusion on obviousness (as *KSR*, *Graham*, and *Panduit* require).

/s/ William H. Milliken
William H. Milliken

Counsel for Appellant Roku, Inc.

BACKGROUND

A. UEI's '853 patent

This is an appeal from an IPR of UEI's U.S. Patent No. 9,716,853, claiming a universal remote control engine, or UCE, for home-theater systems. The UCE controls "target appliances" like TVs and AV receivers.

The UCE creates and maintains "a listing comprised of at least a first communication method and a second communication method different from the first communication method." Maj. 4-5 (claim 1). These "communication methods" include wireless IR signals and wired CEC transmissions sent over an HDMI interface. Appx50(2:4-16).

To make a target appliance do something like adjust the volume, the UCE chooses a communication method (e.g., CEC) and sends an appropriately formatted command code (e.g., a CEC volume-up command code) to the appliance. Appx53(7:12-46). Having multiple communication methods available ensures that each target device reliably receives commands according to the optimal communication method for that particular device. Appx50(1:65-2:1, 2:29-38).

The patent's Figure 7 depicts an embodiment with a matrix that maps specific commands to specific target appliances. Appx43; Appx53(7:19-26).

700		Appliance					
		TV	AVR	STB/DVR	DVD	CD	Etc....
Function	Power on	CEC	CEC	CEC	CEC	IR	
	Power off	CEC	CEC	CEC	CEC	IR	
	Volume up	IR	CEC	n/a	n/a	n/a	
	Volume down	IR	CEC	n/a	n/a	n/a	
	Mute	IR	CEC	n/a	n/a	n/a	
	Play	n/a	n/a	CEC	CEC	IR	
	Pause	n/a	n/a	CEC	CEC	IR	
	FF	n/a	n/a	CEC	CEC	IR	
	Rew	n/a	n/a	CEC	CEC	IR	
	Sound field A	CEC	IP	IP	n/a	n/a	
	Sound field B	CEC	IP	IP	n/a	n/a	
	Input 1	CEC	IR	n/a	n/a	n/a	
	Input 2	CEC	IR	n/a	n/a	n/a	
	Etc....						

Each cell identifies the “form of command/transmission to be used” and contains “a pointer to the required data value and formatting information for the specific command.” Appx53(7:26-29). Cell 712 (bottom left), for example, indicates that a CEC command should be used to transmit the “Input 2” command to the TV and contains “a pointer” to the appropriate CEC command code. Appx53(7:30-36). So, if the UCE receives a command to select Input 2 for the TV, the UCE obtains, via the matrix, a linked CEC command code and transmits it to the TV.

Figure 7 also depicts a “secondary command matrix” (grayed-out, behind the primary matrix) that “allow[s] for the use of alternate command methods” if the

“preferred command was unsuccessful.” Appx53(7:42-46). For example, if the TV does not receive the CEC command code for Input 2, the UCE can send an IR command code for Input 2 instead. Appx55(11:50-55, 12:23-42).

B. The Chardon prior-art reference

Roku challenged the '853 patent as obvious over Chardon. The key issue here is whether Chardon teaches the claimed “listing comprised of at least a first communication method and a second communication method.”

Chardon, like the '853 patent, discloses a universal remote control that communicates with target appliances using different communication methods. Chardon maintains a listing of command codes for each appliance.

Appx941(¶¶[0007]); Appx943-944(¶¶[0036], [0044]). That listing can include a set of “CEC command codes” and a parallel set of “IR command codes.”

Appx941(¶¶[0008]); Appx944(¶¶[0039], [0044]). The CEC command codes are formatted for wired transmission over HDMI; the IR command codes are formatted for wireless transmission in IR. Appx944(¶¶[0038]-[0040]).

If Chardon’s system wishes to send a volume-up command to a TV, Chardon first relays the command to the TV over HDMI using a volume-up CEC command code from its listing. Appx946-947(¶[0058]). If that does not work, the system retrieves from its listing a volume-up IR command code and sends that to the TV. Appx946-947(¶[0058]).

As the above discussion illustrates, both the '853 patent and Chardon disclose UCEs that send commands to target appliances via multiple communication methods (e.g., CEC and IR). The patent's Figure 7 embodiment and Chardon just differ slightly in how command-code information is stored.

For each target device-command combination, the Figure 7 matrix contains the name of a communication method and a pointer to the properly formatted command code that executes the command via that method. Appx53(7:26-29). Upon receiving a request to perform a command, the system consults the matrix, determines the desired communication method, and uses the pointer to obtain the appropriately formatted command code.

Chardon's listing, by contrast, contains parallel sets of already-formatted CEC and IR command codes for each appliance. Appx941(¶[0008]); Appx944(¶¶[0039], [0044]). Upon receiving a request to perform a command, the system decides which communication method to use and then selects the command code corresponding to the chosen command and communication method. Appx946-947(¶[0058]).

This difference, however, is not relevant to the claims. The Listing Limitation requires only a listing comprising two communication methods. The listing need not be stored in any particular way, and the parties and the Board agreed that the listing need not contain "literal *names* of different command

transmission mediums,” Appx22. Thus, Chardon’s listing comprises at least two different communication methods (CEC and IR).

C. The Board’s decision

The Board agreed that Chardon discloses a listing of “command codes specific to certain communication methods”—CEC and IR. Appx21-23. But the Board simultaneously concluded that this disclosure does not render obvious the Listing Limitation because a command code is not a communication method. Appx30-31.

D. Roku’s arguments on appeal

On appeal, Roku agreed that a command code on its own is not a communication method. Op Br. 27. But that fact, Roku argued, does not support the Board’s non-obviousness conclusion because

Chardon’s disclosed listing is not one of abstract command codes. Rather, its listing unambiguously indicates *both* the command code *and* the ... communication method[] to be used in transmission: Chardon states that the listing has ‘sets of IR command codes and sets of CEC command codes.’”

BB 29 (quoting Appx943(¶[0033])); GB 2-4, 11. IR and CEC are the communication methods.

In other words, it does not matter that a command code is not a communication method, because Chardon goes further and lists the specific communication method to be used with each command code. BB 29.

E. The panel’s decision

The panel majority accurately summarized Roku’s argument: because (1) CEC and IR are undisputedly communication methods and (2) Chardon discloses a listing of CEC-formatted and IR-formatted command codes, “Chardon necessarily discloses creating a listing comprised of at least two different communication methods.” Maj. 11. Chardon’s “listing unambiguously indicates both the command code and the ... communication method[] to be used in transmission.” *Id.*

But the majority then ignored that argument. Instead, the majority repeatedly cited “the basic fact that a command code is different than a communication method.” *Id.* at 12; *see id.* (Figure 7 embodiment contains “a list of communication methods” and “a separate list of command codes”); *id.* (citing expert “testimony that a skilled artisan ‘would not have understood a “command code” to be a communication method”). Based on that “basic fact,” the majority concluded that “the Board’s factual finding—that Chardon’s listing of command codes did not teach or suggest a listing of communication methods—was supported by substantial evidence.” *Id.* at 13.

The majority then affirmed the Board’s determination of non-obviousness without further discussion. *Id.* The majority did not analyze whether the “basic fact” quoted above supported the Board’s legal conclusion.

Judge Newman dissented. The majority’s analysis, the dissent explained, failed to respect the principle that obviousness is a question of law reviewed de novo. Dissent 1-2. Instead, the majority concluded only that “the underlying findings of fact are supported by substantial evidence” without “review[ing] the ultimate legal question.” *Id.*

It is undisputed, the dissent observed, that a skilled artisan “would understand that the CEC and IR command codes listed and disclosed by Chardon are the same as the CEC and IR command codes” in the ’853 patent. *Id.* at 3. Because CEC and IR are communication methods, “a skilled artisan would understand that Chardon’s listing of parallel sets of CEC and IR command codes and its description of algorithms for selecting which communication method to use reads precisely on the challenged claims.” *Id.* at 4. And, while there are “differences between the details disclosed by Chardon and by the ’853 patent”—such as the manner in which the command codes are stored—“these details are unclaimed” and thus “cannot be used to support non-obviousness.” *Id.* “[T]he methods described in the claims and the prior art,” the dissent concluded, “are substantially identical.” *Id.*

ARGUMENT

I. Panel rehearing is warranted because the panel majority failed to resolve the key factual dispute in this appeal.

The Board’s non-obviousness holding “rest[ed] on a single dispositive finding”: Chardon’s listing of CEC-formatted and IR-formatted command codes does not teach or suggest a listing comprised of at least two different communication methods. BB 21; *id.* at 4, 22-23, 27, 33; GB 1. UEI agreed. RB 1.

This case should have been a straightforward substantial-evidence reversal because the challenged finding is facially nonsensical. “If Chardon discloses that its listing includes command codes specific to at least two different communication methods ... Chardon necessarily teaches a listing that comprises at least two different communication methods.” BB 33. As the dissent put it, “a skilled artisan would understand that Chardon’s listing of parallel sets of CEC and IR command codes and its description of algorithms for selecting which communication method to use reads precisely on the challenged claims.” Dissent 4.

The panel majority did not engage with the actual dispute here. Instead, it—like the Board—fixated on the fact that a command code, standing alone, is not a communication method. The majority held as follows:

Because the Board’s factual finding—that Chardon’s listing of command codes did not teach or suggest a listing of communication methods—was supported by substantial evidence, we affirm....

Maj. 13.

That holding does not grapple with the dispositive issue the parties agreed this appeal presents. Had the majority’s holding addressed *that* issue, it would have read:

Because the Board’s factual finding—that *Chardon’s listing of CEC-formatted command codes and IR-formatted command codes does not teach or suggest a listing comprised of at least two different communication methods*—was supported by substantial evidence, we affirm....

The italicized “finding” is its own refutation. It is equivalent to saying a listing of Amtrak train numbers and Delta flight numbers does not even *suggest* a listing comprised of two transportation methods, simply because train and flight numbers are not, themselves, transportation methods. Oral Arg. Tr. 1:25-2:00. That is not a defensible proposition. Had the majority engaged with the actual issue in dispute, it could only have concluded that the Listing Limitation would have been obvious.¹

The panel should grant rehearing, address the actual dispute, and reverse—in which case en banc review will be unnecessary.

¹ The *only* way the Board could have supportably found, as a factual matter, that Chardon does not disclose the Listing Limitation would have been to construe it hyper-narrowly to require that literal names of the communication methods appear in the listing (like they do in Figure 7). But, as the majority acknowledged, Maj. 9, the Board expressly disavowed that interpretation.

II. En banc rehearing is warranted because the panel majority’s analysis conflicts with binding precedent.

If the panel declines to grant rehearing, the full Court should rehear this case en banc. The panel majority’s analysis cannot be reconciled with the Supreme Court’s consistent admonitions that obviousness is a question of law.

The majority’s obviousness analysis began and ended by endorsing the Board’s factual finding that a “listing of command codes d[oes] not teach or suggest a listing of communication methods.” Maj. 13. But that (undisputed) factual point does not, as a matter of law, lead to a legal conclusion of non-obviousness. BB 29; GB 2-3, 10-11. That is because the claims impose no limitation on how the listing is stored and because Chardon discloses more than a generic listing of unformatted command codes: it discloses a listing of both CEC-formatted and IR-formatted command codes. *Id.*

Put differently, the majority never connected the dots between the *factual* finding it affirmed and the *legal* conclusion it purported to reach. The dots cannot be connected. Because all agree that CEC and IR are communication methods and that the claimed listing need not contain the literal names of the communication methods, it follows that Chardon’s listing comprises multiple communication methods and renders the Listing Limitation obvious as a matter of law. GB 10-11.

The majority’s failure to conduct the legal component of the obviousness analysis contravenes over a century of precedent. That truncated analysis—now

enshrined in a precedential opinion—will cause much mischief if permitted to remain the law.

A. Obviousness is a question of law.

A wall of Supreme Court precedent going back 150 years treats obviousness as a question of law reviewed de novo. *KSR*, 550 U.S. at 427; *Graham*, 383 U.S. at 17; *Smith v. Nichols*, 88 U.S. 112, 118 (1874); *Richardson-Vicks*, 122 F.3d at 1479; Dissent 1-2 & n.1. To be sure, the inquiry *involves* underlying facts—what the prior art discloses, the level of skill in the art, and so on. *Panduit*, 810 F.2d at 1567. But this Court has held that the ultimate question of obviousness “partakes more of the nature of law than of fact.” *Id.* at 1566.

That holding makes good sense. Analyzing obviousness requires assuming the perspective of a fictional legal construct—the hypothetical ordinarily skilled artisan—at the time of the invention. *Id.* (“[T]he decisionmaker confronts a ghost ... not unlike the ‘reasonable man’ and other ghosts in the law.”); *see Graham*, 383 U.S. at 11 (court must consider whether the claimed advance required “more ingenuity and skill than that possessed by an ordinary mechanic,” such that it represents a genuine “invention”). That analysis “entails primarily legal,” rather than factual, “work.” *Google LLC v. Oracle Am., Inc.*, 141 S. Ct. 1183, 1199-1200 (2021). Treating obviousness as a question of law, moreover, has the salutary effect of “facilitat[ing] a consistent application of [§ 103] in the courts and the

[PTO].” *Panduit*, 810 F.2d at 1567. Obviousness is thus an issue the reviewing court must consider de novo, with no deference to the factfinder.

B. The panel majority truncated its analysis and did not make that ultimate legal determination.

The panel majority’s decision cannot be reconciled with these principles. The majority cited a single, undisputed *factual* issue—that a listing of command codes by itself is not a listing of communication methods—and then stopped. It did not ask whether that factual finding leads to a legal conclusion of non-obviousness. And it did not analyze whether other undisputed facts in the record (for example, that Chardon discloses a listing of CEC-formatted and IR-formatted command codes) bear on the ultimate legal question. That mode of analysis is inconsistent with binding precedent.

KSR is instructive. The Supreme Court adopted the district court’s findings concerning the scope and content of the prior art and the level of skill in the art but analyzed de novo the “legal question” of whether the prior art would have rendered the claims obvious. 550 U.S. at 424-26. Under *KSR*, courts must make their obviousness analysis “explicit” to “facilitate review” and develop the doctrine in a consistent and coherent manner. *Id.* at 418.

The panel majority’s decision contains *no* analysis—much less the “explicit” analysis required by *KSR*—of why the (undisputed) fact that a command code is not a communication method leads to the legal conclusion that the ’853 patent

claims are non-obvious. But the final step is not optional. This Court is not “free to abdicate [its] role as the ultimate decision maker on the question of obviousness.” *Richardson-Vicks*, 122 F.3d at 1479. That is effectively what happened here.

The majority’s analysis also conflicts with *Panduit*. There, the district court found certain patents directed to improved plastic cable ties obvious. 810 F.2d at 1565. This Court accepted the district court’s “correct and unchallenged factual findings” concerning the differences between the prior art and the claimed invention and objective indicia of non-obviousness. *Id.* at 1565, 1571-73. But the Court nonetheless reversed because “proper application of the law” to those “unassailable findings” demonstrated as a matter of law that the claims were *not* obvious. *Id.* at 1565. The Court stressed that the obviousness analysis is “an exercise legal in nature.” *Id.* at 1566. And the Court also observed that any underlying factual findings that do not correspond to the claims as properly construed are “legally insignificant and nonprobative” on the ultimate legal inquiry and therefore play no role in the analysis. *Id.* at 1576-77, 1579-80 & n.41.

Similar reasoning applies here. Under a straightforward application of obviousness law, the Board’s “unassailable finding” that Chardon’s listing includes command codes formatted for transmission by two different communication methods, Appx21-23; Maj. 11, compels a finding that the Listing Limitation would have been obvious. GB 10-11. And the Board’s finding that a command code is

different from a communication method—while correct—is “legally insignificant,” *Panduit*, 810 F.2d at 1579; *see* GB 2-4, because Chardon does not merely disclose a listing of command codes. It discloses a listing of CEC-formatted command codes and IR-formatted command codes, which, as the dissent correctly observed, “reads precisely on the challenged claims,” making the Listing Limitation obvious as a matter of law. Dissent 4; *see* BB 29; GB 2-4, 10-11. The majority’s failure to undertake the required legal analysis was fundamentally inconsistent with over a century of precedent. *Panduit*, 810 F.2d at 1566; *see Smith*, 88 U.S. at 118 (where the differences between the prior art and the claimed invention were undisputed, “[t]he entire ground of controversy between the parties [was] reduced to [a] narrow isthmus, and the question presented ... [was] one rather of law than of fact”).

C. The panel majority’s methodology—now enshrined in a precedential decision—will have pernicious consequences.

En banc review is urgently needed. The majority’s truncated analysis, if permitted to take root, threatens to wreak havoc with the law of obviousness—“the most important and most litigated of the conditions of patentability.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1074 n.2 (Fed. Cir. 2016) (Dyk, J., dissenting). That is so for at least two reasons.

First, the majority’s approach will render it nearly impossible for this Court to enforce a uniform obviousness jurisprudence. If this Court can simply determine that the lower tribunal’s factual findings are supportable and then terminate the

analysis, the Court will effectively defer to lower tribunals on the legal question itself (as the majority did here). That result would be inconsistent with the very reason for this Court’s exclusive patent jurisdiction—to “provide nationwide uniformity in the field of patent law.” *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 162 (1989). And it would eviscerate *KSR*’s requirement that the obviousness analysis “be made explicit,” 550 U.S. at 418.

Second, the majority’s methodology will lead to undesirable substantive outcomes. Take this very case. The *only* difference between UEI’s ’853 patent and Chardon is that the patent’s preferred embodiment stores command codes in a slightly different (indeed, less efficient) way than Chardon. BB 16-17, 28-32; GB 9-11. That “trivial” distinction should not be enough to warrant a patent. *Apple*, 839 F.3d at 1076-77 (Dyk, J., dissenting). “Granting patent protection to advances that would occur in the ordinary course without real innovation retards progress.” *KSR*, 550 U.S. at 419.

Here, the majority’s truncated analysis allowed a patent that never should have issued to survive challenge. But the converse outcome is equally possible, and equally bad. Had *Panduit* simply affirmed the district court’s factual findings and then stopped—without analyzing obviousness *de novo*—the Court would have found unpatentable Caveney’s innovative cable ties, which “trod ... [a] long and failure-strewn path not only to the Patent Office, but to a successful and useful

product.” 810 F.2d at 1572-73. Such a holding would have deprived Caveney of the legal exclusivity to which his genuine invention entitled him.

In short, this panel majority’s “abdicat[ion of its] role as the ultimate decision maker on the question of obviousness,” *Richardson-Vicks*, 122 F.3d at 1479, serves no one. It does not serve patent challengers, who depend on obviousness law as a bulwark against legal monopolies on trivial advances. It does not serve patentees, who depend on a robust patent system to incentivize true innovation. And it does not serve the public, who depend on this Court to establish uniform and workable principles of patent law.

CONCLUSION

The petition should be granted.

Dated: May 31, 2023

Respectfully submitted,

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ADDENDUM

**United States Court of Appeals
for the Federal Circuit**

ROKU, INC.,
Appellant

v.

UNIVERSAL ELECTRONICS, INC.,
Appellee

2022-1058

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2019-01615.

Decided: March 31, 2023

WILLIAM MILLIKEN, Sterne Kessler Goldstein & Fox, PLLC, Washington, DC, argued for appellant. Also represented by JON WRIGHT; JONATHAN DANIEL BAKER, Dickinson Wright PLLC, Mountain View, CA; MICHAEL DAVID SAUNDERS, Austin, TX.

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Before NEWMAN, REYNA, and STOLL, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge STOLL*.

Dissenting opinion filed by *Circuit Judge NEWMAN*.

STOLL, *Circuit Judge*.

Roku, Inc. appeals the Patent Trial and Appeal Board’s final written decision holding that claims 1, 3, 5, and 7 of U.S. Patent No. 9,716,853 had not been proven unpatentable as obvious. This case turns on a single question—whether a person of ordinary skill in the art would have understood the prior art’s disclosure of a listing of remote command codes formatted for transmission via two different communication methods to be a listing comprised of at least a first communication method and a second communication method different than the first communication method. Because the question presented involved the scope and content of the prior art, the Board resolved this dispute as a purely factual question, which we review for substantial evidence. The Board thoroughly considered the evidence of record and found in its final written decision that the skilled artisan would not have understood the prior patent’s listing of remote command codes to correspond to the claim limitation at issue. Because the Board’s finding in this close factual dispute is supported by substantial evidence, we affirm the Board’s final written decision.

BACKGROUND

The ’853 patent relates to universal remotes and, more specifically, to a universal control engine (UCE) that facilitates communication between a controlling device (i.e., a remote) and intended target appliances (e.g., a TV, a DVD player, a sound system, etc.). ’853 patent col. 1 l. 63–col. 2 l. 45. Although the specification of the ’853 patent acknowledges that universal remotes were known at the time of the invention, it states that the proliferation of new communication methods raises the potential for “confusion,

misoperation, or other problems,” *id.* at col. 1 ll. 40–59, particularly because the preferred communication method for transmitting commands “may vary by both appliance and by the function to be performed,” *id.* at col. 6 ll. 62–64. For example, a user can “power on and select inputs on a TV” using Consumer Electronic Control (CEC) commands while “control[ing] the volume on the same TV” using infrared (IR) commands. *Id.* at col. 2 ll. 21–45. The ’853 patent’s purported invention is the ability to reliably use different communication methods that enable a single remote control to provide commands to a variety of target appliances, according to the optimal method of communication for each target appliance and command. *Id.* at col. 2 ll. 16–20.

The ’853 patent’s UCE can “receive commands from a controlling device” and “apply the optimum methodology to propagate the command function(s) to each intended target appliance,” *id.* at col. 2 ll. 20–37, according to a “preferred command matrix,” *id.* at col. 7 ll. 19–29. The preferred command matrix, an example of which is shown below, can be, for example, a list or a table with entries that correspond to a specific command and “comprise identification of [(1)] a form of command/transmission to be used and [(2)] a pointer to the required data value and formatting information for the specific command.” *Id.* at col. 7 ll. 19–29.

Function	Appliance					
	TV	AVR	STB/DVR	DVD	CD	Etc....
Power on	CEC	CEC	CEC	CEC	IR	
Power off	CEC	CEC	CEC	CEC	IR	
Volume up	IR	CEC	n/a	n/a	n/a	
Volume down	IR	CEC	n/a	n/a	n/a	
Mute	IR	CEC	n/a	n/a	n/a	
Play	n/a	n/a	CEC	CEC	IR	
Pause	n/a	n/a	CEC	CEC	IR	
FF	n/a	n/a	CEC	CEC	IR	
Rew	n/a	n/a	CEC	CEC	IR	
Sound field A	CEC	IP	IP	n/a	n/a	
Sound field B	CEC	IP	IP	n/a	n/a	
Input 1	CEC	IR	n/a	n/a	n/a	
Input 2	CEC	IR	n/a	n/a	n/a	
Etc....						

Figure 7

'853 patent Fig. 7.

Representative claim 1 recites:

1. A universal control engine, comprising:

a processing device; and

a memory device having stored thereon instructions executable by the processing device, the instructions, when executed by the processing device, causing the universal control engine

to respond to a detected presence of an intended target appliance within a logical topography of controllable appliances which includes the universal control engine by

using an identity associated with the intended target appliance to create *a listing comprised of at least a first communication method and a second*

communication method different than the first communication method for use in controlling each of at least a first functional operation and a second functional operation of the intended target appliance and

to respond to a received request from a controlling device intended to cause the intended target appliance to perform a one of the first and second functional operations by

causing a one of the first and second communication methods in the listing of communication methods that has been associated with the requested one of the first and second functional operations to be used to transmit to the intended target appliance a command for controlling the requested one of the first and second functional operations of the intended target appliance.

Id. at col. 14 l. 41–col. 15 l. 7 (emphasis added to key limitation).

Roku filed a petition for *inter partes* review of claims 1, 3, 5, and 7 of the '853 patent, asserting that the challenged claims would have been obvious in view of U.S. Patent Pub. No. 2012/0249890 (“Chardon”) and other asserted prior art references. Disposition of the case before us rests, as it did before the Board, on a single, narrow issue: whether Chardon discloses “a listing comprised of at least a first communication method and a second communication method different than the first communication method” as recited in each challenged claim.

Like the patent-in-suit, Chardon describes a remote control system configured to control various target devices (e.g., TVs, DVD players, stereo equipment, etc.). Chardon uses target device identification data to generate a linked database (e.g., a linked list) including sets of command codes (i.e., instructions to perform a command) associated

with specific communication protocols. Chardon, ¶¶ [0006]–[0008]. This linked database includes at least two different sets of command codes—specifically, a set of CEC command codes and a set of IR command codes. Chardon’s system receives a command to perform a specific action (i.e., volume up) on a target appliance (i.e., a TV) and first relays the command to the TV using a CEC command code. *Id.* at ¶ [0058]. If the system doesn’t receive a response from the TV indicating receipt of the command, the system then “determine[s] an IR command code . . . to perform the same set of functions as the CEC command code” and transmits that IR command code to the TV. *Id.* Alternatively, the system can determine in advance that a target device “is not configured to receive CEC command codes” and “send IR command codes . . . instead.” *Id.* at ¶ [0058]; *see also id.* at ¶ [0068].

Roku argued that Chardon disclosed the disputed claim limitation to a skilled artisan, devoting much of its petition to explaining how Chardon “creates a database of IR and CEC command codes.” J.A. 116. In other words, Roku established in its petition that Chardon describes a process for creating a database of command codes, at least some of which are formatted for transmission according to a first communication method and some of which are formatted for transmission according to a second communication method. “In this way,” Roku asserted, without further explanation, “Chardon meets the claimed limitation” of a listing of “at least a first (e.g., CEC) and second (e.g., IR) communication method.” *Id.*

Roku’s petition did not explain how a list of command codes is a list of communication methods. Nor did it suggest that Chardon’s list of command codes would render the claimed list of communication methods obvious. For example, it did not state that Chardon’s list of command codes is inherently a list of communication methods, or explain that a skilled artisan would have been motivated to derive a list of communication methods from the command

codes, or provide evidence that a skilled artisan would have known that Chardon's list of command codes was also a list of communication methods. In its petition, Roku thus assumed that, because Chardon's command codes are formatted for transmission via different communication methods, its list of command codes is necessarily a list of communication methods. But Roku neither articulated this assumption nor explained how the record evidence supported it.

Further, Roku advanced no claim constructions for the disputed limitation, asserting instead that the relevant claim language "should simply receive [its] plain and ordinary meaning, as informed by the '853 patent specification." J.A. 83.

To support its assertions, Roku's petition did rely on the expert testimony of Dr. Samuel Russ. Dr. Russ explained that Chardon's linked database discloses "a listing comprised of at least a first communication method (e.g., CEC command codes) and a second communication method (e.g., IR command codes)." J.A. 905 (Russ Decl. ¶ 203). This testimony seemingly equates CEC command *codes* with a first communication *method* and IR command *codes* with a second communication *method*. Dr. Russ later elaborated, however, that Chardon used its linked database "to send a CEC command code over HDMI to an HDMI appliance using a first communication method (i.e., HDMI-CEC over a HDMI cable)," seemingly acknowledging a distinction between command codes and the communication methods over which the command codes are transmitted. J.A. 906 (Russ Decl. ¶ 205). Dr. Russ did not testify that a skilled artisan would have understood Chardon's linked database of command codes to teach or suggest a list of communication methods.

Universal did not dispute that Chardon discloses a process for creating a listing of CEC command codes and IR command codes. Universal asserted instead that Roku had failed to establish that this disclosure teaches or renders

obvious creating a listing of two different communication methods. J.A. 300–02. Universal rebutted Roku’s positions and Dr. Russ’s testimony with that of Dr. Don Turnbull. Dr. Turnbull opined that one of ordinary skill in the art would “not have understood a ‘command code’ to be a ‘communication method.’” J.A. 3034 (Turnbull Decl. ¶¶ 69–70). He explained that a command code is “an instruction to perform a function,” whereas a communication method is “a medium or protocol for transmitting or receiving information.” *Id.* Dr. Turnbull explained that the ’853 patent specification itself “expressly distinguishes between a listing of communication methods and a database of command codes.” J.A. 3034–35 (Turnbull Decl. ¶ 71). As support, Dr. Turnbull cited Figure 7 of the ’853 patent, which shows a matrix with cells comprising “identification of a form of command/transmission to be used,” such as CEC and IR. *Id.* He explained that the matrix “expressly distinguishes between command codes and the communication methods (e.g., CEC and IR) that are used to communicate the command codes.” J.A. 3035 (Turnbull Decl. ¶ 72) (citing ’853 patent col. 7 ll. 30–42). Dr. Turnbull emphasized that the ’853 patent clearly differentiates between the “form of command/transmission to be used” and the data value and formatting information for the specific command, which is “stored elsewhere” in memory. J.A. 3034–35 (Turnbull Decl. ¶¶ 71–72); *see also* ’853 patent col. 7 ll. 26–29. Thus, he explained, the ’853 patent makes “clear that a listing of communication methods is not the same thing as a database of command codes.” *Id.*

In its final written decision, the Board determined that Roku had not shown that the challenged claims would have been obvious. The Board explained that although Roku “specifically equate[d] ‘a first communication method’ with ‘CEC command codes’ and ‘a second communication method different from the first communication method’ with ‘IR command codes,’” J.A. 20 (citing J.A. 119–20, 126–27), it failed to show that one of ordinary skill would

have understood that these were the same things. The Board emphasized that Roku cited “no analysis or expert testimony” to show that Chardon’s linked database of command codes and the transmission of those command codes over two different communication methods taught or suggested “the claimed listing that is comprised of at least two different communication methods.” J.A. 22. Acknowledging that there was “no requirement that literal names of different command transmission mediums . . . appear in the text of the listing,” the Board nevertheless found that the record fell “short of providing evidence that one of ordinary skill in the art would have understood stored command codes” to identify communication methods rather than act as a “reference for codes to be used once the communication method to be used is determined in some other way.” *Id.* (cleaned up). Thus, the Board concluded that Roku had not shown by a preponderance of the evidence that the challenged claims would have been obvious over Chardon alone, or in combination with other cited prior art references.

Roku requested rehearing, alleging among other things that the Board “erred by implicitly construing,” J.A. 525, the term “communication method” as “the ‘method of transmission’ or the ‘transmission medium’ through which the selected command is sent,” J.A. 528. The Board denied Roku’s petition, explaining that it did not so construe the claims. J.A. 29. Furthermore, the Board explained that, even if it had construed the claim term as averred by Roku, “the outcome . . . would have been no different.” *Id.* Specifically, the Board emphasized that the question of “whether a command code teaches a communication method” presents a factual question that the Board had already considered and “decided in favor of Patent Owner” Universal, and Roku’s attempt to characterize the Board’s analysis as including an implicit construction was both incorrect and unpersuasive. J.A. 31.

Roku appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

The ultimate question of obviousness is a legal question that we review de novo with underlying factual findings that we review for substantial evidence. *Fleming v. Cirrus Design Corp.*, 28 F.4th 1214, 1221 (Fed. Cir. 2022). Those underlying findings of fact, as enumerated by the Supreme Court nearly six decades ago, include the *Graham* factors—“basic factual inquiries,” the answers to which provide a foundation for the ultimate determination of obviousness or nonobviousness. *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966). The *Graham* factors include: “(1) the scope and content of the prior art, (2) differences between the prior art and the claims at issue, (3) the level of ordinary skill in the pertinent art, and (4) the presence of objective indicia of nonobviousness such as commercial success, long felt but unsolved needs, failure of others, and unexpected results.” *Elbit Sys. of Am., LLC v. Thales Visionix, Inc.*, 881 F.3d 1354 (Fed. Cir. 2018) (internal quotation marks omitted) (citing *Graham*, 383 U.S. at 17–18). Substantial evidence is evidence such that a “reasonable fact finder could have arrived at the agency’s decision.” *OSI Pharms., LLC v. Apotex Inc.*, 939 F.3d 1375, 1381 (Fed. Cir. 2019) (quoting *In re Gartside*, 203 F.3d 1305, 1312 (Fed. Cir. 2000)). “[T]he possibility of drawing two inconsistent conclusions from the evidence does not prevent an administrative agency’s finding from being supported by substantial evidence.” *Consolo v. Fed. Mar. Comm’n*, 383 U.S. 607, 620 (1966).

As explained above, the question considered by the Board and raised on appeal is whether Chardon’s list of command codes formatted to be transmitted via different communication methods is, itself, a list of different

communication methods as recited in the claims. We can see both sides of this factual dispute.¹

On one hand, before this court, Roku advances the reasonable argument that because (1) CEC and IR are communication protocols—which neither party disputes qualify as communication methods—and (2) Chardon discloses “a *protocol-specific* list of CEC command codes” and “a *protocol-specific* list of IR command codes,” Chardon necessarily discloses creating a listing comprised of at least two different communication methods “as a matter of logic.” Appellant’s Br. 24–27. Although Roku does not dispute that a “command code” is not the same as a “communication method,” it argues that Chardon’s protocol-specific “listing unambiguously indicates both the command code and the communication protocol (i.e., communication method) to be used in transmission.” *Id.* at 28–29.

On the other hand, as Universal persuasively argues, Roku has failed to show that the Board’s fact finding—that Chardon’s command code formatted for transmission via a particular communication method was not proven to be a communication method—was unsupported by substantial evidence. Appellee’s Br. 23. First, Universal notes that Roku’s argument contradicts the disclosure of the ’853 patent itself. *Id.* at 24. For example, the ’853 patent describes its listing as a “command matrix,” comprising “a series of data cells” that include “identification of a form of command/transmission to be used” and “a pointer to the

¹ The dissent asserts that we should apply *de novo* review to this issue. But Roku expressly raises only a factual question on appeal: whether Chardon teaches a particular claim element. *See* Appellant’s Br. 21 (“That factual issue is the sole subject of this appeal.”). We thus view the issue on appeal as a *Graham* factor underlying obviousness—not as a question of the ultimate conclusion of obviousness.

required data value and formatting information for the specific command,” which is stored in a separate location in memory. ’853 patent col. 7 ll. 19–29. In other words, the patent specification itself distinguishes a list of communication methods from a separate list of command codes. Second, Universal argues that the Board’s decision is supported by Dr. Turnbull’s expert testimony. Appellee’s Br. 25–26. According to Universal, the Board was entitled to weigh Dr. Turnbull’s testimony that a skilled artisan “would not have understood a ‘command code’ to be a communication method,” J.A. 3034 (Turnbull Decl. ¶¶ 69–70), more heavily than Dr. Russ’s more vague and unexplained testimony that Chardon’s linked database discloses “a listing of at least a first communication method (e.g., CEC command codes) and a second communication method (e.g., IR command codes),” J.A. 905 (Russ Decl. ¶ 203). Finally, Universal points out that Roku does not dispute the basic fact that a command code is different than a communication method.

Review of the record as a whole reveals that the factual dispute at hand was highly contested and closely decided. Most significantly for our purposes, the Board’s finding was supported by substantial evidence. Specifically, the Board’s finding flows from the ’853 patent specification itself and Dr. Turnbull’s testimony. This evidence supported the Board’s finding that Roku had failed to meet its burden of proof. The Board, in its role as factfinder in the first instance, was entitled to weigh the evidence in the record, including this evidence against Roku.

An appellate court “do[es] not and should not reweigh evidence or make factual findings.” *Impax Lab’ys, Inc. v. Lannett Holdings Inc.*, 893 F.3d 1372, 1382 (Fed. Cir. 2018). As an appellate court, our role is to review the Board’s findings for substantial evidence, not to step into its place and make those findings anew. *Id.* Indeed, although this court could well have decided the factual dispute at hand differently than the Board did, it is not the

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province of this court to do so. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 327 (2015) (explaining that a lower tribunal, which has “presided over, and listened to, the entirety of a proceeding has a comparatively greater opportunity to gain that familiarity than an appeals court judge who must read a written transcript or perhaps just those portions to which the parties have referred”).

Because the Board’s factual finding—that Chardon’s listing of command codes did not teach or suggest a listing of communication methods—was supported by substantial evidence, we affirm the Board’s decision that Roku has not shown that the challenged claims would have been obvious.

CONCLUSION

We have considered the parties’ remaining arguments and find them unpersuasive. For the foregoing reasons, we affirm the Board’s final written decision.

AFFIRMED

**United States Court of Appeals
for the Federal Circuit**

ROKU, INC.,
Appellant

v.

UNIVERSAL ELECTRONICS, INC.,
Appellee

2022-1058

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2019-01615.

NEWMAN, *Circuit Judge*, dissenting.

I respectfully dissent, for I have concerns as to both procedural and substantive aspects of the court's ruling.

I

With respect to procedure, the court holds that because the parties did not dispute claim construction at the Patent Trial and Appeal Board ("PTAB" or "Board"), our appellate review is limited to whether substantial evidence supports the PTAB's decision of non-obviousness. Claim construction and obviousness are questions of law, whose underlying factual components may or may not be disputed. When disputed, factual findings of the PTAB are reviewed for support by substantial evidence, as the panel majority

recognizes, *see Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (reciting the standard of review for PTAB findings of fact), whereas the ultimate questions of law remain for de novo determination on appeal, *id.*

The panel majority states that because “the question presented involved the scope and content of the prior art, the Board resolved this dispute as a purely factual question, which we review for substantial evidence.” Maj. Op. at 2. The majority then finds that substantial evidence supports the PTAB’s finding that “Chardon’s listing of command codes did not teach or suggest a listing of communication methods.” *Id.* at 13. This is the focus of my dissent, for the majority declines to review the ultimate legal question of validity of U.S. Patent No. 9,716,853 (the “853 patent”) and instead reviews solely the Board’s specific fact-finding discussed therein.

The decision on appeal is “that Petitioner has not established by a preponderance of the evidence that any of claims 1, 3, 5, or 7 of the ’853 patent are unpatentable.” J.A. 24. My concern is with the majority’s implicit holding that if the underlying findings of fact are supported by substantial evidence, then we do not review the ultimate legal question of non-obviousness.

I believe that de novo review is appropriate for the questions of law presented herein, along with review of any underlying facts for support by substantial evidence.¹

¹ The panel majority misperceives my dissent. I do not “assert[] that we should apply de novo review to this [factual] issue.” Maj. Op. at 11 n.1. I do assert that we should apply de novo review to the issue on appeal, that is, the legal issue of obviousness. “It is emphatically the province and duty of the judicial department to say what the law is. Those who apply the rule to particular cases, must of necessity expound and interpret that rule.” *Marbury v.*

II

It is not disputed that universal “remotes” were known at the time of the invention described and claimed in the ’853 patent. Communicating commands via both wireless and wired communication methods was well known: “a ‘communication method’ is a medium or protocol for transmitting or receiving information (*e.g.*, CEC [consumer electronics control], IR [infrared], RF [radio frequency], etc.)” Universal Elecs. Br. 5 (citing the ’853 patent col. 2 ll. 4–16, col. 6 ll. 25–28, 62–67, col. 14 ll. 20–24). The Chardon reference describes a “database of CEC and IR command codes.” *Id.* at 1.

In this appeal it is not disputed that a person of ordinary skill in the field of this invention would understand that the CEC and IR command codes listed and disclosed by Chardon are the same as the CEC and IR command codes listed and communicated in the ’853 patent. Chardon shows a Universal Control Engine (“UCE”) receiving a command code from a remote control device, and it shows the UCE employing the applicable communication method to transmit the command to the appliance. This is the subject matter of the ’853 patent. As the panel majority recites, “[t]he ’853 patent’s purported invention is the ability to reliably use different communication methods that enable a single remote control to provide commands to a variety of target appliances, according to the optimal method of communication for each target appliance and command.” Maj. Op. at 3 (citing the ’853 patent col. 2 ll. 16–20).

The panel majority also recites that “Chardon discloses a process for creating a listing of CEC command codes and IR command codes” for communication to remote appliances. *Id.* at 7. Chardon teaches “at least two different

Madison, 5 U.S. 137, 177 (1803). This foundation of appellate review applies whether or not any facts are disputed.

communication methods,” namely CEC and IR, Roku Reply Br. 1, and “[a] skilled artisan would understand that Chardon’s listing of parallel sets of CEC and IR command codes and its description of algorithms for selecting which communication method to use reads precisely on the challenged claims.” *Id.* at 11. Although the parties discuss differences between the details disclosed by Chardon and by the ’853 patent, and the majority recognizes some such differences, these details are unclaimed by the ’853 patent and cannot be used to support non-obviousness.

An example is that for selecting the communications method, the ’853 patent shows use of a “matrix” in Figure 7, and states that the matrix contains the “form of command/transmission to be used and a pointer to the required data value and formatting information for the specific command,” Roku Reply Br. 10 (quoting the ’853 patent col. 7 ll. 26–29), while Chardon lists “both CEC-formatted command codes and a parallel set of IR-formatted command codes.” *Id.* (citing Chardon, ¶¶ [0008], [0039], [0044]). However, any difference in the selection method does not appear in the claims.

Applying the requisite analysis of law and fact, I conclude that the ’853 patent claims at issue would have been obvious in view of Chardon, because the methods described in the claims and the prior art are substantially identical and serve the same purpose and use. I respectfully dissent from my colleagues’ contrary ruling.

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

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Case Number: 2022-1058

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