

Filed on behalf of: InductEV, Inc.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INDUCTEV, INC.,
Petitioner,

v.

WITRICITY CORPORATION,
Patent Owner.

IPR2023-01208
Patent 8,912,687

PETITIONER'S REPLY

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I. Introduction

The Petition showed that claims 1-18 of the '687 patent (Ex.1001) would have been obvious to a POSA based on a combination of Cook (Ex.1007) and Bennett (Ex.1005). Attempting to carve out the prior art, PO proposes construing “confirm compatibility of the resonators and provide authorization for initiation of transfer of power” to require “verify[ing]” unspecified “parameters of the resonators” based on little more than its declarant's say-so. PO then argues that Cook and Bennett—in isolation—do not disclose this limitation under its narrowed construction, and that a POSA would not have been motivated to combine them. But PO's construction is unsupported and wrong, and the claims are obvious even under PO's narrow construction. For example, PO's expert admitted Bennett teaches confirming that the resonators have compatible resonant frequencies before power transfer. And PO presents no evidence to overcome the Petition's explanation that a POSA would have looked to Bennett to provide implementation details for Cook's wireless vehicle charging system.

II. PO's construction of “confirm compatibility of the resonators and provide authorization for initiation of transfer of power” should be rejected

Independent claims 1, 7, and 13 recite “an authorization facility to confirm compatibility of the resonators and provide authorization for initiation of transfer of

power.” This phrase does not need construction, and the prior art taught this element under its plain meaning. Pet. 47-50; Allen Suppl. (Ex.1036) ¶8.

PO proposes this limitation to mean an authorization facility to “verify that parameters of the resonators will [permit] power transfer and provide authorization prior to initiating the transfer of power.” POR 7. This thinly veiled attempt to construe the claims to carve out the prior art is unsupported and wrong for four reasons.

First, the intrinsic record contradicts PO's assertion that confirming compatibility requires verifying any particular resonator parameters. PO does not dispute that the claimed “authorization facility” is described by the specification's discussion of “authentication capability.”¹ For example, PO cites the '687 patent's disclosure that compatibility between resonators can be confirmed via *authentication*. POR 8 (citing '687 patent 102:14-17). PO's expert likewise confirmed that, in the '687 patent, “‘authentication’ is a word used to describe confirmed compatibility of the resonators.” Horenstein Tr. (Ex.1035) 35:9-24. Authentication in the '687 patent does not, however, require verifying that unspecified “parameters” of the source and device resonators will “permit power

¹ The '687 patent does not use the phrase “authorization facility” outside of the claims.

transfer.” To the contrary, authentication refers to the process of verifying a device—in the ’687 patent, a resonator—before allowing access to a system or resources (i.e., the transfer of power), and does not require verification of any particular resonator parameters. Allen Suppl. ¶11; Ex. 1037-005.

As the Petition explained, the claimed “authorization facility to confirm compatibility of the resonators and provide authorization for initiation of transfer of power” is described in the ’687 patent as an “authentication capability” that can apply to any “source and device” to “ensure that only compatible sources and devices are able to transmit and receive power.” Pet. 5; ’687 patent 102:14-17. The ’687 patent teaches that compatibility should be confirmed by establishing encrypted communications between the source and device resonators, e.g., using “cryptographic request and respond protocols” or “unique signatures of perturbations of specific devices” that cannot be cloned. ’687 patent 102:21-26. This authentication to confirm compatibility also includes, for example, confirming that “only devices that are part of a specific subscription or plan[] are able to receive power from a source.” Pet. 5-6; ’687 patent 102:20-21.

The dependent claims are consistent that the “authorization facility to confirm compatibility of the resonators” in independent claims 1, 7 and 13 encompasses where resonators are confirmed compatible because they use the same cryptography or communication channel. For example, the “authorization facility [to confirm

compatibility of the resonators...] uses public key infrastructure” (cls. 2, 8, 14) or “uses a secure communication channel” (cls. 3, 9, 15). But “public key infrastructure” and a “secure communication channel” are not a verification of “parameters” of the resonators that “permit power transfer,” nor does PO assert them to be, which disproves any suggestion by PO that “confirm[ing] compatibility” necessarily must use verifying “parameters.” Allen Suppl. ¶11; POR 9.

Second, PO’s attempt to inject a “parameters” limitation into the claim relies almost solely on the testimony of its declarant. POR 9 (citing Horenstein Decl. (Ex.2001) ¶¶30-41).² Dr. Horenstein’s testimony, in turn, broadly describes how resonant circuits *may* work, but provides no explanation why “confirm[ing] compatibility” ***claimed in the ’687 patent*** would necessarily require “verify[ing] ...

² PO cites to dozens of paragraphs of Dr. Horenstein’s testimony, without explaining their relevance, in an improper attempt to incorporate his testimony by reference. The Board should give this no weight. *Cisco Sys., Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper 12 at 9 (Aug. 29, 2014) (informative) (declining to consider “conclusory statements [in an expert declaration] for which the Petition does not otherwise provide an argument or explanation”); 37 C.F.R. § 42.6(a)(3) (“Arguments must not be incorporated by reference from one document into another document.”).

parameters.” Horenstein Decl. ¶¶30-41. Even if Dr. Horenstein’s explanation had been well supported (which it is not), it could not override the intrinsic record, which as described above explicitly teaches that compatibility can be confirmed by methods other than verifying parameters. ’687 patent 102:14-17; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (“[A] court should discount any expert testimony ‘that is clearly at odds with the claim construction mandated by the’” intrinsic record.)

Third, PO’s construction should be rejected because it introduces unnecessary ambiguities to the claim, which subverts the purpose of claim construction to “assign a fixed, unambiguous, legally operative meaning to the claim.” *Liquid Dynamics Corp. v. Vaughan Co.*, 355 F.3d 1361, 1367 (Fed. Cir. 2004). For example, PO argues that “a number of parameters of the resonators may effect whether the resonators are compatible,” but does not explain what supposed parameters exist, which ones must be used to determine compatibility, or what ranges of parameters would make resonators compatible or incompatible. POR 9. As one example, PO argues that “[m]atching the resonant frequencies” can indicate compatibility (POR 9), but Dr. Horenstein testified that even mismatched parameters can permit power transfer. Horenstein Tr. 14:19-23. Dr. Horenstein was unable to articulate any range of values for parameters that would confirm compatibility, instead asserting that what constitutes compatible “parameters” is up to the user or system to decide.

Horenstein Tr. 22:21-23:19 (“[I]t’s going to be a system dependent issue, and it would be up to the designer of the system to decide what is compatible and what is not.”). Even more arbitrarily, Dr. Horenstein asserted that confirming compatibility does not require checking *all* resonator parameters, but it is likewise insufficient to only check one of the parameters. Horenstein Tr. 36:5-37:25. These capricious distinctions unsupported by evidence beyond what Dr. Horenstein “believe[s]” cannot support PO’s rewriting of the claim. *See id.* 53:1-7; Allen Suppl. ¶12.

Fourth, PO incorrectly asserts that the Petition “attempts to lump together” the “confirming compatibility” and “provide authorization for initiation.” POR 7. While raised in the claim construction section of its brief, this does not appear to be a claim construction argument at all. The Petition explained that the prior art renders obvious both of these features, as described below in Section III.A, but claim construction is not necessary or relevant to resolving that dispute. In any event, nothing in PO’s proposed construction addresses or resolves the relationship between “confirm[ing] compatibility” and “provid[ing] authorization for initiation” as claimed.

Instead, PO claims that the ’687 patent “describes these two functions separately,” citing an unexplained block of Dr. Horenstein’s declaration. POR 9 (citing Horenstein Decl. ¶¶25-30). The Board would be right not to consider the POR’s incorporation by reference to Dr. Horenstein (*see supra* n. 4), but Dr.

Horenstein's opinions should also be rejected because they are not grounded in the intrinsic evidence. In the cited paragraphs, Dr. Horenstein declares that he "will refer to the functions of the claimed authorization facility as the 'check for compatible resonator parameters' and the 'check for a valid user' requirements, respectively." Horenstein Decl. ¶¶30, 25. He then reads portions of the specification and extrapolates (without support) that any discussion of resonator "parameters" is part of "confirming compatibility," and anything relating to a purported "check for valid user," or confirming a subscription or "means to pay," is part of "providing authorization." Horenstein Decl. ¶¶26-30.

Herein lies the unspoken aspect of Dr. Horenstein's argument: he categorizes portions of the '687 patent's specification describing what was admittedly disclosed in the Cook and Bennett prior art as part of "providing authorization" whereas other portions of the specification Dr. Horenstein did not find in Cook or Bennett are purportedly needed to "confirm compatibility." *See, e.g.*, Horenstein Decl. ¶44 ("Bennett discloses a system that checks for a valid user"), 45 (categorizing passages in Bennett as "disclose the checking of subscriber information and user identification"), 54 ("Cook is concerned with making sure the authorization module ensures the user has a *subscription* before it enables charging") (emphasis original). This type of hindsight reconstruction is why the Federal Circuit cautions against expert testimony that is "is generated at the time of and for the purpose of litigation;"

it “can suffer from bias that is not present in intrinsic evidence.” *Phillips*, 415 F.3d at 1318. Dr. Horenstein’s litigation-inspired extrapolations of the claims and specification should be given no weight.

In any event, Dr. Horenstein’s rewriting of “providing authorization” to mean “check for valid user” is not part of PO’s construction and therefore waived. Paper 10 at 9 (“Patent Owner is cautioned that any arguments not raised in the response may be deemed waived.”). It is also wrong. The plain language of “providing authorization” does not refer to any users, accounts, or billing information. It also does not require a separate “check” from confirming compatibility. To the contrary, the claim recites that authorization is “provided” once a decision is made to proceed with power transfer, e.g., when the resonators are confirmed compatible because they use the same cryptography algorithm or are part of the same subscription or plan. Allen Suppl. ¶¶20-21. Dr. Horenstein does not identify or purport to rely on any disclaimer or lexicography that would narrow this meaning. Horenstein Decl. ¶26; Horenstein Tr. 26:7-16. To the extent he cites the specification, those examples are optional and have no basis in the claim language. *See* ’687 patent 65:24-26 (“*may be configured*”); 87:44-49 (systems “may have” “pay-as-you-grow” functionalities); Allen Suppl. ¶21.

The Board should reject PO’s construction and apply the plain meaning set forth in the specification, including that “authentication” can be used to confirm

compatibility of resonators. Additionally, even under PO's construction, the claims should be found invalid as discussed below.

III. Claims 1-18 are obvious over Cook in view of Bennett

The Petition demonstrated that all challenged claims 1-18 are obvious over the combination of Cook and Bennett. Pet. 30-67. PO agrees that independent claim 13 is representative of all challenged independent claims (POR 4-5), and PO disputes only one limitation: "an authorization facility to confirm compatibility of the resonators and provide authorization for initiation of transfer of power" as recited in each independent claim 1, 7, and 13. PO presents no argument for any dependent claims, and thus, claims 1-18 rise and fall with claim 13. As detailed below, PO's arguments against invalidity rely on its flawed construction, misapply the law of obviousness, and mischaracterize the record.

A. Cook and Bennett renders obvious confirming compatibility of the resonators

The Petition showed that the combination of Cook and Bennett renders obvious "an authorization facility to confirm compatibility of the resonators and provide authorization for initiation of transfer of power." Pet. 47-50. PO disagrees for three reasons, arguing: (1) the Petition is "ambiguous" as to whether Ground I relies on "Cook or Bennett" for this limitation (POR 18); (2) Cook alone does not disclose "confirm[ing] compatibility of the resonators" under PO's improper construction (POR 19); and (3) Bennett alone does not disclose the same limitation

under PO's improper construction (POR 22). These arguments fail as a matter of law and as a matter of fact, as shown below.

First, PO's attacks have no merit because the law does not require any reference in isolation to disclose a limitation. *Bot M8 LLC v. Sony Interactive Ent. LLC*, 66 F.4th 1380, 1386 (Fed. Cir. 2023) (rejecting patent owner's argument that "no reference of record[] shows" a limitation because "it nonetheless would have been obvious to a [POSA] to combine the references to yield the claimed invention"). PO also asserts, incorrectly, that Dr. Allen "could not say whether he was relying on Cook or Bennett" for the authorization facility. POR 19 (citing Ex.2003 26:17-27:25). To the contrary, in response to PO's question as to whether "Cook, by itself, discloses" the authorization facility, Dr. Allen repeatedly stated that he relied on the combination of Cook and Bennett.

Q. Is it your opinion that Cook, by itself, discloses this Element 13[f]?

A. So I believe it's better to say that it's the combination.

Ex.2003 26:21-24.

Q: Is it your opinion that Cook discloses each portion of that claim element?

A. Again, I'm sorry, I really did this analysis in the context of the combination of these, of these two.

Ex.2003 27:20-24.

There is nothing improper about the Petition and Dr. Allen relying on a combination of references to disclose a limitation. *Bot M8*, 66 F.4th at 1386. To the contrary, PO's strategy of attacking the references in isolation is contrary to law. *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1050 (Fed. Cir. 2019) (obviousness "cannot be overcome 'by attacking references individually where the rejection is based upon the teachings of a combination of references'" (quoting *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986))).

PO's cited caselaw is inapposite. PO argues that under *Sisvel International S.A. v. Sierra Wireless, Inc.*, the Petition is fatally deficient for "failure to specifically articulate how the cited references allegedly render the challenged claims obvious." POR 19. That is wrong on the facts: the Petition specifically articulated how a POSA would combine Cook's system with Bennett's "target device authenticator" and "user authentication module" to "confirm compatibility with the resonators as part of the authentication process." Pet. 47-50 (citing Cook [0014]-[0018]; Bennett [0029], [0030], [0037]-[0039], [0041], [0052], [0067], [0072], [0087], Fig. 3). It is also wrong on the law: *Sisvel* does not require a petitioner to identify how a single reference in a combination teaches a limitation on its own. Rather, as PO's own quote demonstrates, *Sisvel* faults a petition that "does not explain what reference is the primary versus secondary reference, what elements are missing from the primary reference, what elements should be added from the secondary reference to reach the

claimed invention, or why those particular elements would be obvious to add.” POR 19 (quoting 82 F.4th 1355, 1364 (Fed. Cir. 2023)). The Petition provided all of this information as described above as well as below in Section III.B.

Second, PO attacks Cook in isolation, asserting that Cook’s unique identifier—used for authentication—does not “contain[] any information about the resonator located on the vehicle that would allow resonator compatibility to be confirmed.” POR 20. Even if this were true, it would be irrelevant because it fails to address what the combination of Cook and Bennett teaches. *Bot M8*, 66 F.4th at 1386. But it is not true. Cook’s system uses the unique identifier for authentication (including using “encryption techniques to verify the ID” and to prevent cloning (Cook [0017])), and therefore it contains enough information for authentication. Allen Suppl. ¶¶25-26. On cross examination, PO’s expert conceded that a POSA would have therefore understood Cook to teach an “authorization module,” and that the unique identifier would also be a detection of the vehicle side resonator. Horenstein Tr. 49:20-50:9. Importantly, the ’687 patent explicitly discloses that such authentication is an example of how resonator compatibility can be confirmed. ’687 patent 102:15-21.

PO tries to fault Dr. Allen for asserting that a POSA merely “could,” include the resonant frequency as part of Cook’s unique identifier. POR 20. Dr. Allen’s testimony does not support PO’s argument, and in fact confirms that this limitation

is met. Even under PO's construction, nothing in the claim language requires the resonant frequency to be explicitly communicated as part of confirming compatibility. Consistent with the claim language, Dr. Allen explained that "the ID tells us whether the device is or the vehicle is compatible, presumably compatible with the charger." Ex.2003 48:25-49:3. And even if the resonant frequency was necessary, Dr. Horenstein admitted that a POSA reading Cook would understand the described system "relies on the resonant frequencies being the same" and checks "for a match" of the resonant frequencies. Horenstein Tr. 58:23-59:13, 55:7-23.

PO further accuses the Petition of "selectively quot[ing] Cook to argue that transmitting an encrypted message indicating that 'charging is enabled' for the vehicle corresponds to 'indicating that it has a compatible resonator.'" POR 21 (quoting Pet. 47). That is not correct. PO's argument that Cook "is silent with respect to resonator compatibility" (POR 21) again relies on PO's assertion that information for authentication cannot be used to confirm compatibility, which is directly contradicted by the '687 patent. '687 patent 102:15-17. Consistent with the '687 patent, and as a POSA would have understood when reading and implementing Cook, identifying the car, or the customer, or the license plate, associated with a resonator each could have been used to confirm compatibility of the resonators. Allen Suppl. ¶26.

Third, PO attacks Bennett in isolation, arguing that Bennett only “verif[ies] the identity of the target device, and confirm[s] whether the user has subscribed to the power-charging service.” POR 22. Again, even if this were true, it fails to rebut the Petition’s obviousness arguments, which rely on the combination of Cook and Bennett, not their teachings in isolation. *Bot M8*, 66 F.4th at 1386. And, again, it is not true. Bennett explicitly discloses that its target device authenticator 109 and user authorization module 121 work together to, in PO’s words, “verify the identity of”—i.e., authenticate—“the target device.” POR 22; Allen Suppl. ¶¶31-32; *see* Horenstein Decl. ¶43 (describing Bennett’s “target device authentication”) (quoting Bennett Abstract).

PO’s argument is a naked attempt to attempt to cabin the compatibility confirmation and authentication of Cook and Bennett solely into the realm of “providing authorization,” which it insists must be distinct from confirming compatibility. *See* POR 8-9 (arguing that “verifying that the vehicle to be charged is authorized to receive charging (*e.g.*, because it is linked with a subscription account)” cannot also satisfy “confirm[ing] resonator compatibility”). Dr. Horenstein goes even further, categorizing “authorization” as “ensur[ing] that the user is a subscriber or has paid” and categorizing “authentication” as “validation of resonator compatibility.” Horenstein Decl. ¶27; *see also id.* ¶¶25-26 (similar).

As discussed above in Section II, PO and Dr. Horenstein's arguments have no basis in the claim. The step of "*providing* authorization for initiation of transfer of power" does not require any "check" or some form of user verification, it could be as simple as the source resonator affirmatively supplying power in the presence of a device resonator. Allen Suppl. ¶¶21, 32; *cf.* Horenstein Decl. ¶26 (arguing that "providing authorization" requires validation such as confirming the user has a subscription). For example, the claimed authorization facility can confirm compatibility by determining that the resonators are "part of a specific subscription or plan," and then provide authorization for initiation of power transfer via a signal. '687 patent 102:15-21, 103:13-16 ("wireless power source can be initiated by any number of mechanisms: radio, magnetic near field radio, conductive signaling, ultrasonics, laser light"); Allen Suppl. ¶32.

PO and Dr. Horenstein are also wrong in their attempt to try to cabin resonator authentication in Cook and Bennett solely to the "providing authorization" language of the claimed "authorization facility." Bennett explicitly discloses "target device authentication" (Bennett Abstract) which Dr. Horenstein describes as "validation of resonator compatibility." Horenstein Decl. ¶27; *see also id.* ¶43 (quoting Bennett Abstract). This is directly analogous to the '687 patent's disclosure that "[a]uthentication may be used to ensure that only compatible sources and devices are able to transmit and receive power." '687 patent 102:15-17. PO's attempt to

characterize Bennett's "device authentication" as merely looking up a *user's* account and ability to pay is contradicted by Bennett's disclosure that the authentication is based on a "pre-assigned identification number of the *target device*," as Dr. Horenstein admitted as his deposition. Bennett [0067]; Horenstein Tr. 73:20-24 ("Q. And so the target device identification isn't assigned to a user it's actually assigned to the device itself; right? A. Right.").

Next, PO argues that Bennett's disclosure of a "power control signal exchange operation" that is "required for the authentication of the target electronic device 115 before a successful resonant power delivery" merely "relates to the automatic triggering of the resonant power charge operation based on the battery level of the rechargeable battery" and "says nothing about the compatibility of the resonators." POR 23 (quoting Bennett [0039]). PO is wrong. Bennett's discussion of the "automatic triggering of the resonant power charge operation" is part of the "target device power manager 127," which is separate from the "communication module" that performs the "power control signal exchange operation." Bennett [0039]; Allen Suppl. ¶33. Bennett's "power control signal exchange operation" in turn is a communication that "takes place between the target electronic device 115 and the power transmitting unit 103 *during the resonant charging request*" and is required for a "successful resonant power delivery." Bennett [0039]. PO has no response that a "successful resonant power delivery" confirms that the resonators are compatible.

Pet. 25, 49; *see* Horenstein Tr. 39:24-40:7 (agreeing the “ultimate goal of confirming compatibility” is “to transfer energy” between the resonators).

Even if verification of “parameters” were required to confirm compatibility, as under PO’s construction, the combination of Cook and Bennett would nonetheless render claims 1-18 obvious. As PO’s expert admits, Bennett “discloses a system which checks the incoming resonant frequency and tunes the resonance of the receive[r] before initiating power transfer.” Horenstein Decl. ¶48 (citing Bennett [0070]); *see also* Pet. 49-50 (discussing Bennett’s disclosure of automatically adjusting). Dr. Horenstein also conceded Bennett discloses “comparing resonators for the compatibility of their physical parameters,” namely their “resonant frequency.” Horenstein Decl. ¶45. He confirmed this understanding in deposition, agreeing that “when Bennett is looking to authenticate a target device, it is verifying the device’s identification number, the details of the user, and the resonant frequency for the target device.” Horenstein Tr. 74:8-14. Dr. Horenstein further confirmed the same for Cook: “Cook is just saying [the resonators] have to have the same resonant frequency.” Horenstein Tr. 52:9-17; *see also id.* 55:7-23, 58:23-59:13 (“Cook just relies on the resonant frequency being the same.”).

To avoid these concessions, Dr. Horenstein offered a new opinion at his deposition: that “resonant frequency is essential” for resonator compatibility, “but it’s not enough.” Horenstein Tr. 37:10-25; *id.* 53:1-7 (asserting resonator frequency

“would [not] be an indicator of compatibility”); *see also id.* 60:16-23 (“resonant frequency would be a given” of any compatibility check, but “the compatibility check would be a -- a collection of other parameters in addition to resonant frequency”). Dr. Horenstein’s new opinion is inconsistent with PO’s proposed construction, which only requires “verify[ing] ... parameters of the resonators,” and further explains that “one parameter is the resonant frequencies.” POR 7, 9. It is also inconsistent with Dr. Horenstein’s own declaration, which specifically lists resonant frequency as a parameter that can be verified for compatibility. Horenstein Decl. ¶25 (“As part of the compatibility check, the authorization facility may confirm such parameters as resonant frequency.”). As described above, the combination of Bennett and Cook satisfies the plain language of the claim, as well as PO’s proposed construction, which allows for any parameter, including resonant frequency, to be compared to confirm compatibility. Dr. Horenstein’s contradictory new opinion should not be credited.

PO next attempts to distinguish Bennett’s step of confirming resonant frequency parameters as occurring in a “frequency selector 123” as an “optional step that occurs after authentication has occurred.” POR 24 (emphasis original). PO is wrong. Bennett taught checking resonant frequencies both as part of device authentication *before* initiating power transfer, and also using that information *after* power transfer to automatically adjust frequencies. Pet. 48-50 (citing Bennett

[0037]-[0039], [0052], [0067], [0072], [0087], Fig. 3). In particular, Bennett illustrates and describes how resonant frequency information is exchanged and verified prior to power transfer expressly in connection with Figure 3 reproduced below.

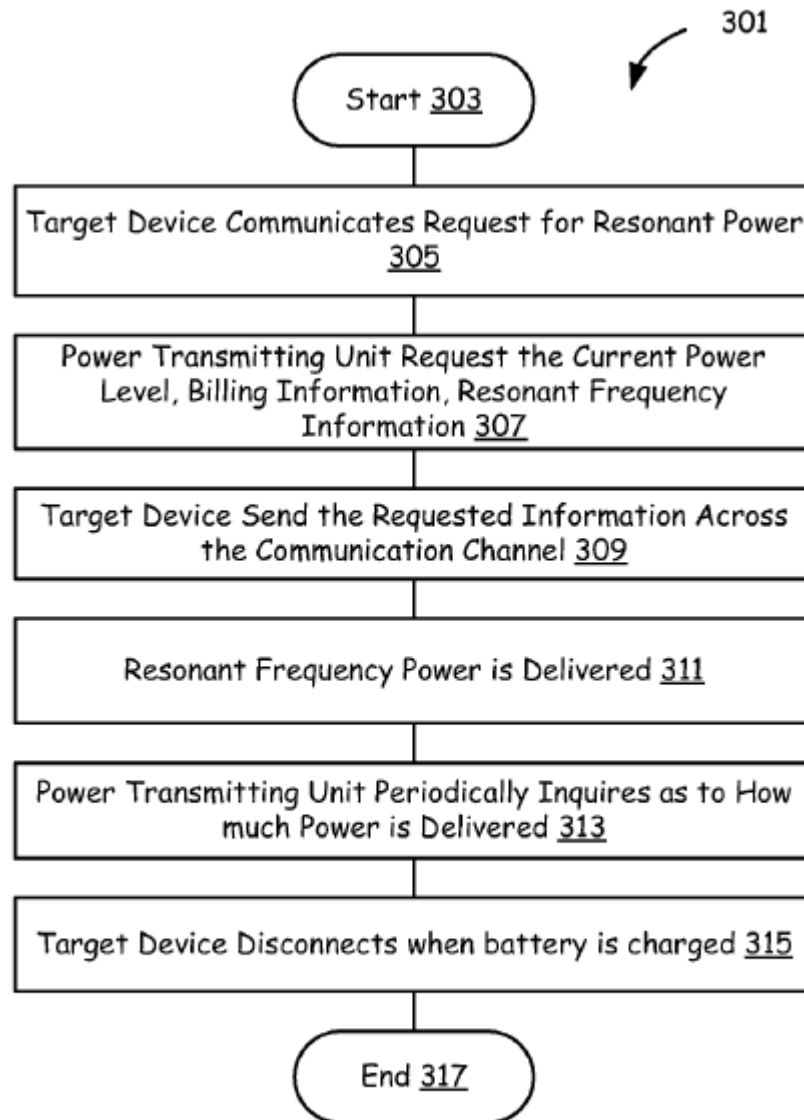


FIG. 3

Bennett, Fig. 3, [0037], [0057]; Allen Suppl. ¶¶28-29; *see also* Pet. 49, 62.

The operation of Figure 3 is not disputed. At his deposition, PO's expert confirmed Bennett's Figure 3 is a "flow chart illustrating resonant power transfer operations performed using the power system of Figure 1." Horenstein Tr. 69:3-6. After the target device requests resonant power in step 305, the power transmitting unit requests "billing information" and "resonant frequency information" at step 307. *Id.* 69:7-14. Then "the target device sends the billing information and the resonant frequency [of] the device resonator the power transmitting unit." *Id.* 69:15-19. And that occurs "**prior to** resonant frequency power being delivered at step 311." *Id.* 69:20-23. Thus, Dr. Horenstein agreed "the target device **will send its resonant frequency** information to the power transmitting unit **before** initiating power transfer." *Id.* 69:24-70:6; *see also id.* 65:13-16 (agreeing "Bennett also teaches authenticating a target electronic device before initiating power transfer").

Bennett also taught that "resonant power delivery is initiated" only when the power transmitting unit compares "authentication information," which includes a target resonant frequency, and determines that it is a "match" to information stored in a database. Bennett [0037]; Horenstein Tr. 68:11-18 (confirming a POSA would understand Bennett's "authentication information" to refer to "the target resonant frequency"). As Dr. Horenstein confirmed, "when Bennett is looking to authenticate a target device, it is **verifying the device's identification number**, the details of the user, **and the resonant frequency for the target device.**" Horenstein Tr. 74:8-14.

There can be no reasonable dispute that Bennett therefore discloses confirming “parameters” of a resonator to confirm compatibility prior to initiation of power under PO’s construction. *See id.* 68:20-23 (agreeing “a target resonant frequency is one of the physical parameters of a resonator”); 41:3-22 (“[O]nce the identifier matches with the database, it could be confirmed that ... the receiving resonator is compatible with the transmitting resonator.”).

B. A POSA would have been motivated to combine Cook and Bennett.

The Petition demonstrated that Cook and Bennett are analogous art and that a POSA would have been motivated to combine Cook and Bennett to arrive at the claims of the ’687 patent for a variety of reasons. Pet. 21-29. PO does not dispute that Cook and Bennett are analogous art,³ nor does it dispute this motivation to combine Bennett and Cook. Instead, PO argues that tuning a frequency “is not equivalent to confirming resonator compatibility to initiate power transfer.” POR 25. This does not appear to be a motivation to combine argument, but instead a repackaging of PO’s argument that Cook and Bennett fail to teach “confirm[ing]

³ PO asserts that “merely asserting that references are analogous art ‘is an insufficient articulation for motivation to combine,’” (POR 27) but the Petition provided significant articulation for motivation to combine distinct from its analogous art showing. Pet. 21-29.

compatibility,” which is wrong for the reasons shown above in Section III.A. To the extent PO argues that every motivation to combine the references must relate to confirming compatibility of the resonators, PO is wrong because the law imposes no such requirement. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007) (“Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.”). It is more than sufficient—and now undisputed—that a POSA would have been motivated to implement the frequency tuning in Cook, which would include confirming the target resonant frequency of the resonators before initiating power transfer, with a reasonable expectation of success. And as shown in the previous section, Bennett’s frequency tuning, including the initial checking of resonant frequency, discloses the compatibility check even under PO’s narrow construction. This should end the inquiry.

PO’s other arguments fare no better. First, PO acknowledges that the Petition presented other reasons to combine Bennett and Cook, including that the combination would provide “additional compatibility, safety, and security checks” and “prevent the battery in Cook from being overcharged,” but dismisses each as not specifically related to confirming resonator compatibility. POR 26, 29. PO is wrong on the facts and the law. PO myopically focuses on the two words “confirm compatibility,” ignoring that function is expressly performed by the “authorization

facility” and necessarily therefore “relate to” the use of public key infrastructure (PKI), secure communication channels, in and out of band communication channels, and determining safety conditions, because that is what the authorization facility must “use” or additionally “determine” as specified by the dependent claims. ’687 patent cls. 2-6, 8-12, 14-18. PO does not dispute that a POSA would have understood that the combination of Cook and Bennett taught all of those dependent claim requirements of the “authorization facility,” and provide further motivations to combine the Cook and Bennett references as a whole. Pet. 56-67; *Google LLC v. Sonos, Inc.*, 2024 WL 2350509, at *3 (Fed. Cir. May 23, 2024) (“There is no need to establish a motivation to combine on a claim-by-claim basis when the proposed motivation logically applies to all of the claims at issue.”). PO’s interpretation of the motivation to combine inquiry, requiring every motivation to be directed exclusively to “confirm compatibility” of resonators, is also contrary to *KSR*. *KSR* rejected “rigid rule[s] that limit[] the obviousness inquiry” in favor of “an expansive and flexible approach” to obviousness analysis. *KSR*, 550 U.S. at 415, 419. Thus, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim.” *Id.* at 418.

Second, PO asserts that “Dr. Allen agreed that a POSA would be able to implement an authorization scheme based on Cook, and *would not need the details of Bennett.*” POR 25 (citing Ex.2003 49:17-50:3). This is false. PO asked Dr. Allen

whether it was his opinion that a POSA “would be able to implement the authorization function that’s described in Cook just based on the description in Cook.” Ex.2003 50:8-12. Dr. Allen replied:

I think I’m saying something a little bit more, which is I’m a person of ordinary skill. I read Cook, and I see that oh, there is an authorization scheme here. I will now go to the literature and identify potential authorization schemes like what’s described in Bennett that I could use to actually implement the authorization.

Ex.2003 50:13-19. Dr. Allen never testified that a POSA wouldn’t need to rely on Bennett. Allen Suppl. ¶35.

Third, PO argues that because Cook and Bennett describe common objectives and methods of monetizing a wireless power transfer system, “there is no reason to combine Cook with Bennett” because “Cook already discloses a system that provides power only to authorized users who can be billed.” POR 27. PO cites the non-precedential *S-Tek* case finding no motivation to combine where the combination would provide only “redundant functions” to what was already in the primary reference. *S-Tek Sys., LLC v. Engineered Corrosion Sols., LLC*, 748 F. App’x 1003, 1007 (Fed. Cir. 2018). But as the Petition showed, Bennett contains additional details that Cook does not expressly disclose, and these details are not redundant to anything in Cook. Allen Suppl. ¶35; Pet. 23-24. The fact that Cook and Bennett disclose similar objectives and methods points *toward* combination, not

away from it: “[i]f a technique has been used to improve one device, and a [POSA] would recognize that it would improve similar devices in the same way, using the technique is obvious.” *KSR*, 550 U.S. at 417.

Lastly, PO argues that a POSA would not have sought Bennett’s details regarding the use of encryption because “there is no indication that a POSA would need” such details. POR 28. PO further asserts that “Petitioner does not explain how the ‘pseudorandom number generator’ of Bennett would even be used in Cook.” *Id.* But again, there does not need to be an explicit motivation to combine in the prior art, nor does the law require physical combinability of elements to render the claims obvious. *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (whether one reference can be incorporated into another is “basically irrelevant, the criterion being not whether the references could be physically combined but whether the claimed inventions are rendered obvious by the teachings of the prior art as a whole”).

The Petition provided many reasons why a POSA would have combined various aspects of Bennett with Cook. The resulting combination discloses a compatibility check as well as—undisputedly—every other limitation of claims 1-18.

IV. Conclusion

For the reasons set forth above, the Board should find all claims of the ’687 patent obvious.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I hereby certify that this Petitioner's Reply complies with the word count limitation of 37 C.F.R. § 42.24(c)(1) because it contains 5,531 words using Microsoft Word's counting feature, excluding the cover page, signature block, and the parts of the Petitioner's Reply exempted by 37 C.F.R. § 42.24(c).

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), I certify that on this 30th day of August, 2024, a true and correct copy of the foregoing **Petitioner's Reply and all Exhibits** were served by electronic mail on Patent Owner's lead and backup counsel at the following email addresses:

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