

Filed on behalf of: InductEV, Inc.

Entered: August 30, 2024

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

**DECLARATION OF MARK ALLEN
IN SUPPORT OF PETITIONER'S REPLY**

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I. Introduction and Qualifications

1. I have been retained as an expert witness on behalf of InductEV, Inc. (“InductEV” or “Petitioner”) in the above-captioned *inter partes* review (“IPR”) concerning the validity of claims 1-18 of U.S. Patent No. 8,912,687 (“the ’687 patent”) (Ex. 1001).

2. I previously provided a declaration dated July 16, 2023, with my opinions related to the level of skill of ordinary artisans, the state of the art described in the ’687 patent at the time of the effective filing date, and the disclosure of the prior art relative to the claims of the ’687 patent. I understand that my original declaration was submitted as Exhibit 1003. I hereby incorporate Exhibit 1003 into this declaration by reference.

3. My experience and qualifications are set forth in Exhibit 1003 and in my curriculum vitae, which I understand was submitted as Exhibit 1004.

4. I have been asked to provide additional expert opinions regarding these matters in response to certain arguments in the Patent Owner Response and certain opinions of Patent Owner’s witness, Dr. Mark Horenstein.

II. Summary Of Materials Reviewed And Considered

5. All of the opinions contained in this Declaration are based on the documents I reviewed and my knowledge and professional judgment. In forming

the opinions expressed in this Declaration, while drawing on my experience in the field of multiplayer online video games, I reviewed the following documents:

Ex.	Description
Paper 9	Institution Decision
Paper 20	Patent Owner's Response to Petition
1001	U.S. Patent No. 8,912,687 B2 ("687 patent")
1002	U.S. Patent No. 8,912,687 B2 File History ("687 FH")
1005	U.S. Patent Publication No. 2010/0036773 A1 ("Bennett")
1006	U.S. Provisional Application No. 61/086,380 ("Bennett Provisional" or "BProv")
1007	U.S. Patent Application Publication No. 2009/0299918 A1 ("Cook")
1008	U.S. Patent Application Publication No. 2003/0115468 A1 ("Aull")
1009	U.S. Patent No. 8,266,075 B2 ("Ambrosio")
1010	U.S. Patent No. 7,602,143 B2 ("Capizzo")
1011	U.S. Patent No. 8,547,069 B2 ("Jang")
1012	U.S. Patent No. 5,462,439 ("Keith")
1013	U.S. Patent No. 5,821,731 ("Kuki")
1014	U.S. Patent No. 7,804,272 B2 ("Morita")
1015	U.S. Patent No. 8,030,888 B2 ("Pandya")
1016	H. Sakamota et al., <i>Large Air-Gap Coupler for Inductive Charger</i> , 35 IEEE Transactions on Magnetics 3526 (1999) ("Sakamoto")
1017	Estill I. Green, <i>The Story of Q</i> , in 43 Am. Scientist 584 (1955) ("Story of Q")
1018	Chwei-Sen Wang, <i>Design Considerations for Inductively Coupled Power Transfer Systems</i> (2004) (Ph.D. Thesis, Univ. of Auckland) ("Wang")

Ex.	Description
1019	U.S. Patent No. 8,880,889 B1 (“Ward”)
1020	Frederick Emmons Terman, <i>Electronic and Radio Engineering</i> (4th ed. 1955) (“Terman”)
1021	U.S. Patent No. 9,774,086 B2 (“Cook-086”)
1022	U.S. Patent No. 8,749,334 B2 (“Boys”)
1023	David H. Staelin et al., <i>Resonators</i> , in <i>Electromagnetic Waves</i> 336 (1994) (“Staelin”)
1024	U.S. Patent No. 5,745,574 (“Muftic”)
1025	U.S. Patent No. 5,815,573 (“Johnson”)
1026	U.S. Patent No. 6,240,187 B1 (“Lewis”)
1027	U.S. Patent No. 6,442,688 B1 (“Moses”)
1028	U.S. Patent No. 6,718,470 B1 (“Adams”)
1029	U.S. Patent No. 7,741,734 B2 (“Joannopoulos”)
1031	File History for Patent Application No. 13/789,860 (“13/789860 FH”)
1035	Transcript of deposition of Mark Horenstein (“Horenstein Tr.”)
1037	<i>Dictionary of Internetworking Terms and Acronyms, Cisco Systems’ Official Internetworking Dictionary</i> (Cisco Press 2001) (excerpts)
2001	Declaration of Mark Horenstein (“Horenstein Decl.”)
2002	Curriculum Vitae of Mark Horenstein
2003	Deposition Transcript of Mark Allen (“Allen Tr.”)

6. My opinions are additionally guided by my appreciation of how a person of ordinary skill in the art would have understood the claims of the ’687

patent at the time of the alleged invention, which I have been asked to assume is September 27, 2008.

III. Legal Understanding

7. I am not an attorney. However, I have been informed by counsel of certain legal standards and have applied those standards, described in Exhibit 1003, in formulating my opinions.

IV. Claim construction

8. Each of the independent claims of the '687 patent (claims 1, 7, and 13) recite “an authorization facility to confirm compatibility of the resonators and provide authorization for initiation of transfer of power.” In my first declaration, I applied the plain meaning of this limitation, as the plain language of the words of this limitation, individually and together, would be understood to a POSA without clarification or interpretation.

9. Dr. Horenstein interprets the function of the authorization facility to be to “verify that parameters of the resonators will [permit] power transfer and provide authorization prior to initiating the transfer of power.” Horenstein Decl., ¶ 24; *see* Horenstein Tr. 29:19-30:8 (asserting that he meant to include the word “permit” before “power transfer” in his construction). I disagree with this interpretation.

10. **First**, I disagree that confirming compatibility of resonators requires verifying that parameters of the resonators will permit power transfer. There are multiple ways to confirm compatibility. For example, the '687 patent explains *authentication* can be used to confirm compatibility. Specifically, an “authentication capability” can apply to any “source and device” to “ensure that only compatible sources and devices are able to transmit and receive power.” '687 patent, 102:14-17; Ex. 1003, ¶ 66.

11. A POSA would have understood that authentication relates to verifying the identity of a device—in this context, a resonator—before allowing access to a system or resources, and does not require verification of any particular parameters such as physical parameters to “permit power transfer.” Ex. 1037-005. For example, the '687 patent advises against relying on physical parameters for authentication because they can be cloned by unauthorized devices. “Authentication may be used to ensure that only authentic devices that are of a specific manufacturer *and not clones* or devices and sources from other manufacturers . . . are able to receive power from a source.” '687 patent, 102:17-21. Authentication may be based, for example, “on the unique signatures of perturbations of specific devices allowing them to be used and authenticated based on properties similar to physically unclonable functions.” '687 patent, 102:21-26. The example parameters cited by Dr. Horenstein—“resonant

frequency, quality factor Q, coupling efficiency, physical dimensions, safety metrics, and manufacturer of the resonators” are not “physically unclonable functions” that the ’687 patent teaches can be used for authentication.

Authentication can also be based on “cryptographic request and respond protocols.” ’687 patent, 102:21-22. Further, the use of authentication—which often uses cryptographic protocols—to confirm compatibility is also consistent with the ’687 patent’s description that “security and cryptography algorithms may be used to authenticate and verify compatibility between resonators.” ’687 patent, 184:19-23; *see also* claims 2, 8, 14 (reciting the authorization facility “uses public key infrastructure”). The uses of cryptography algorithms, public key infrastructure, etc., do not require verifying parameters of a resonator.

12. ***Second***, Dr. Horenstein’s discussion of this limitation departs from his actual construction. Despite his stated interpretation as “verifying that parameters of the resonators will [permit] power transfer,” Dr. Horenstein seems to agree that parameters permitting *some* power transfer do not necessarily bear on compatibility. For example, when Dr. Horenstein was asked whether the ability to transfer power implies compatibility, he answered: “Not at all.” Horenstein Tr. 14:19-23. When asked whether compatibility means that “they will permit power transfer between them,” he stated that “‘permit’ is not the right word.” Horenstein Tr. 14:11-15. Thus, Dr. Horenstein seemed to change his

interpretation to require *more* than merely verifying that parameters *permit* power transfer. He stated: “[I]n my view, compatibility of the resonators means that various parameters of the two resonators are consistent with the desired type of power transfer.” Horenstein Tr. 15:1-3; *see also* Horenstein Decl., ¶ 25 (“parameters needed for the desired form of power transfer”). Thus, permitting *any* power transfer is not enough in Dr. Horenstein’s view, but rather some “desired” type of power transfer must be satisfied by the parameters. He further explained that the “desired power transfer” is not defined, and “really depends on the needs of the user.” Horenstein Tr. 15:12-19. As I discussed above and below, nothing in the claims or specification limits confirming compatibility to anything related to verifying parameters, let alone verifying that parameters allow for an ill-defined “desired power transfer.”

13. Dr. Horenstein cites various passages of the ’687 patent as “[d]etails and examples” of the authorization facility’s functions. Horenstein Decl., ¶ 30. None of these passages define the phrase “confirm compatibility” at all, let alone to require verifying parameters. I discuss these passages below.

14. At column 102, as I discussed above, the ’687 patent notes that “[a]uthentication may be used to ensure that only compatible sources and devices are able to transmit and receive power” and actually teaches against relying on

the types of parameters Dr. Horenstein cites to confirm compatibility. *See* Horenstein Decl. page 13 (quoting '687 patent, 102:15-17).

15. At column 143, the '687 patent discusses the use of a device to translate or convert parameters between devices with incompatible parameters. *See* Horenstein Decl. page 13 (quoting '687 patent, 143:12-23). But this discussion of the existence of “possibly incompatible parameters” does not mean that confirming compatibility of resonators requires verifying parameters. In fact, this passage explicitly discloses power transfer between resonators with “different and possibly incompatible parameters.” '687 patent, 143:12-23.

16. Dr. Horenstein cites three passages from columns 23, 114, and 70, respectively, as disclosing examples of “Electrical Parameters.” Horenstein Decl. page 13 (quoting '687 patent, 23:30-33, 114:8-13, and 70:4-9). These passages discuss the existence and adjustment of parameters such as impedance and Q factor, but say nothing about confirming compatibility, let alone limits confirming compatibility to verifying such parameters..

17. Dr. Horenstein cites seven passages from columns 111, 28, 112, 101, 111, 12, and 112, respectively, as disclosing examples of “Physical Dimensions, Separation, and Orientation.” Horenstein Decl. pages 13-15 (quoting '687 patent, 111:21-24, 28:66-29:4, 112:5-8, 101:36-40, 111:14-24, 12:22-26, and 112:41-47). Although “power transfer efficiency may be optimized when the

characteristic sizes or the effective sizes of the resonators are similar” (’687 patent, 111:21-24) these passages also describe that the disclosed system can operate “between resonators with different physical dimensions, components and orientations.” ’687 patent, 28:66-29:4. Nothing in these passages discusses verifying parameters to confirm compatibility, let alone limits confirming compatibility to verifying such parameters.

18. Dr. Horenstein quotes the ’687 patent’s discussion of frequency and Q factor as “not need[ing] to be exactly met in order to have efficient enough energy transfer for a useful energy exchange.” Horenstein Decl. ¶ 31 (quoting ’687 patent, 23:7-12). This passage says nothing about confirming compatibility. If anything, like the above passages, it suggests that parameters *don’t* need to be verified before power transfer because “useful energy exchange” can be obtained with—in Dr. Horenstein’s words—“mismatch between the two resonators.” Horenstein Decl., ¶ 31. Although Dr. Horenstein asserts that “[i]n general, the two resonators should have the same quality factor Q if maximum transfer efficiency is desired” (Horenstein Decl., ¶ 32), the ’687 patent explicitly states that Q does not need to match in its system (’687 patent, 23:7-12)—and nothing in the claims requires “maximum transfer efficiency” or confirming the resonators have matching parameters. *See* Horenstein Decl., ¶¶ 33-36, 38-40 (discussing efficiency and power transfer rate).

19. Dr. Horenstein asserts that a “system designer might choose desired values for power transfer to meet specific needs” or “might choose a specific value of efficiency.” Horenstein Decl., ¶ 37. According to Dr. Horenstein, “one metric of compatibility” in these cases “would be the ability of the two resonators to yield the chosen value of power transfer rate or power transfer efficiency.” Horenstein Decl., ¶ 37. These examples do not appear to be from the '687 patent. Nevertheless, they are, in Dr. Horenstein's words, examples, and do not limit the claimed confirming compatibility. Horenstein Decl., ¶ 37.

20. **Third**, Dr. Horenstein's discussion of the limitation seems to change the meaning of “provide authorization” in a manner that is not reflected in his explicit construction. Specifically, Dr. Horenstein opines that providing authorization means “to identify the user as having permission for the initiation of power transfer.” Horenstein Decl., ¶ 25; Horenstein Tr. 23:4-8. This identification, according to Dr. Horenstein, “will confirm that the user has, for example, a subscription, a user ID, a proper account, and/or means to pay.” Horenstein Decl., ¶ 26 (citing '687 patent, 65:24-26, 87:49, and 102:17-21). The shorthand he uses for “providing authorization” is “check for a valid user.” Horenstein Decl., ¶ 30.

21. I disagree with this interpretation. The plain language of the claims does not mention any “user” let alone require any subscription, ID, account, or

means to pay. By the plain language of “providing authorization,” the authorization facility does not need to perform any unclaimed “check” or “verification.” Rather, the plain language simply requires providing authorization for initiation of transfer of power, which can be done, for example, by providing an appropriate signal that power transfer is authorized. Dr. Horenstein does not identify any definitions in the ’687 patent that would limit or change the plain language. The passages cited by Dr. Horenstein are examples, which I understand from counsel are not limiting on claim language. At column 65 (cited by Dr. Horenstein at paragraph 26), the ’687 patent discloses “The source power and control circuits 2302 may include power factor correction circuits and may be configured to monitor power usage for monitoring accounting, billing, control, and like functionalities.” ’687 patent, 65:22-26. In addition to permissive language (“may”), this passage’s disclosure of accounting, billing, etc., does not even mention providing authorization for initiation of transfer of power—let alone limit that function as claimed. Similarly, at column 87 (cited by Dr. Horenstein at paragraph 26), the ’687 patent discloses “pay-as-you-grow” system expansions for solar PV panels with wireless power transfer. ’687 patent, 87:44-49. This passage again uses permissive language (e.g., “may”) and says nothing about providing authorization for initiation of transfer of power. Finally, at column 102 (cited by Dr. Horenstein at paragraph 26), the ’687 patent discloses

that *authentication* may be used to ensure that “only devices that are part of a specific subscription or plan, are able to receive power from a source.” ’687 patent, 102:17-21. This passage, describing *authentication*, contradicts Dr. Horenstein’s attempt to cabin authentication as verifying parameters of the system, separate from authorization. Horenstein Decl., ¶ 27. Nevertheless, it also does not limit the “providing authorization” function of the claimed authorization facility.

V. Ground 1: Claims 1-18 are obvious over Cook in combination with Bennett.

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

22. As discussed in my first declaration, 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.” *See, e.g.*, Ex. 1003 ¶¶ 178-183.

23. Patent Owner asserts that, in my deposition, I “could not say whether [I] was relying on Cook or Bennett” for the authorization facility. POR 19 (citing Ex.2003 26:17-27:25). I disagree, and my response was consistent with my first declaration. I was asked if it was my “opinion that Cook, by itself, discloses this Element 13[f],” referring to the authorization facility limitation. Allen Tr. 26:21-22. I responded by noting that I relied on the combination of

Cook and Bennett: “So I believe it’s better to say that it’s the combination.”

Allen Tr. 26:23-24. When asked again, whether it was my “opinion that Cook discloses each portion of that claim element,” I responded with the same answer: “Again, I’m sorry, I really did this analysis in the context of the combination of these, of these two.” Allen Tr. 27:20-24. It is my understanding from counsel that the law of obviousness does not require a single reference in isolation to disclose a limitation.

24. Dr. Horenstein, however, seems to focus on the Cook and Bennett references in isolation. Horenstein Decl., ¶¶ 52-63 (focusing on Cook), 43-51 (focusing on Bennett). For example, Dr. Horenstein states that “it is my opinion that Bennett does not disclose an authorization facility that confirms compatibility of the resonators.” Horenstein Decl., ¶ 51. He also states that “[n]either Cook nor Bennett discloses or suggests” the authorization facility limitation. Horenstein Decl., ¶ 55. Dr. Horenstein’s opinions appear to be based on his claim construction, with I disagree with for the reasons provided above. *See* Section IV. Nevertheless, as discussed below, I disagree with several of Dr. Horenstein’s descriptions of Cook and Bennett, and note that his deposition testimony shows that the combination of Cook and Bennett disclose the limitation.

25. Dr. Horenstein asserts that “Cook discloses authentication only of the user account but does not check for the compatibility of the resonators.” Horenstein Decl., ¶ 53. I disagree. Cook discloses a “unique identifier indicative of the vehicle” such as “an RFID device 121 that uniquely identifies the vehicle.” Cook [0014]. Although the system checks with a “remote location that stores the vehicle identification information” as to “whether there is an existing account” (Cook [0015]) in doing so it authenticates the vehicle ID itself, verifying compatibility of the vehicle and its resonator for charging. *See, e.g.*, Cook [0017] (disclosing “encryption techniques to *verify the ID.*”) (emphasis added). A POSA would have understood the unique vehicle ID to identify the vehicle resonator and therefore Cook also authenticates the vehicle resonator in the same manner disclosed in the '687 patent. *See* Horenstein Tr. 49:20-50:23 (agreeing that the authorization module in Cook detects the ID of the vehicle side resonator and checks whether the vehicle resonator is associated with an account); *see also* '687 patent 102:15-21.

26. Patent Owner asserts that, in my deposition, I “admitted that the unique ID in Cook does not contain information about the resonator on the vehicle, such as the resonant frequency, but instead ‘could imagine’ that a [POSA] ‘could’ include the resonant frequency.” POR 20 (citing Allen Tr. 48:9-49:3). However, in that cited passage I explained that the “ID tells us whether the

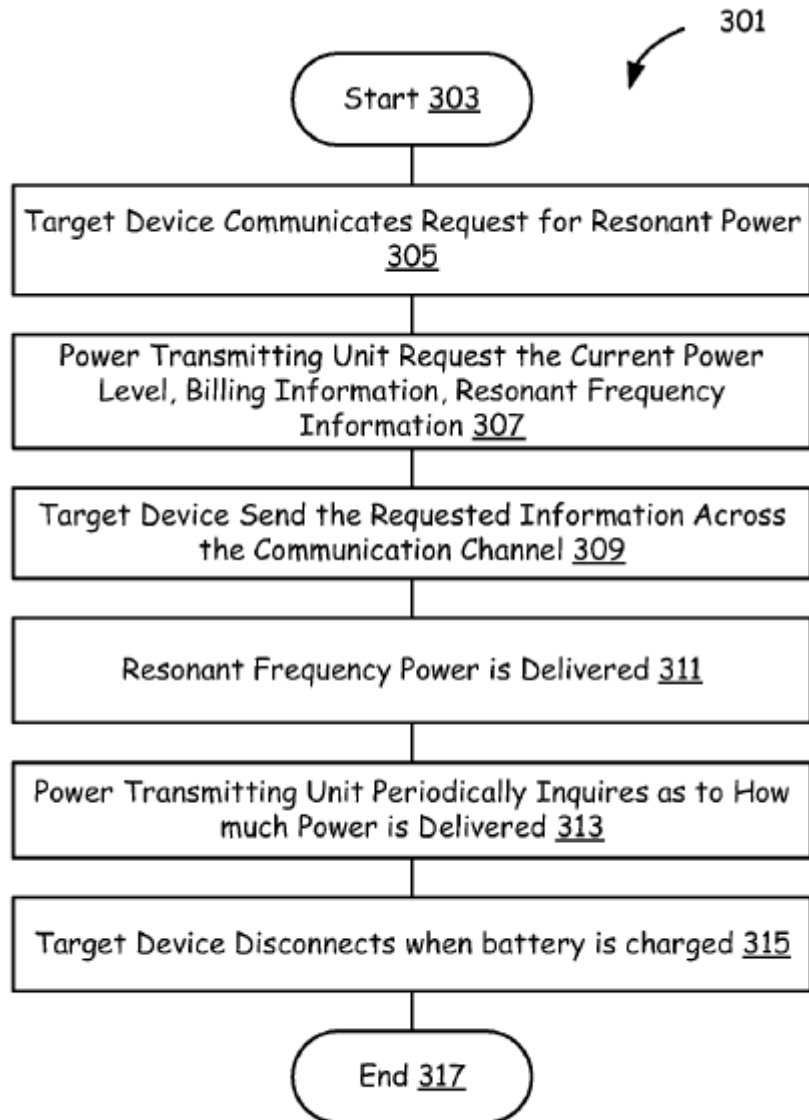
device is or the vehicle is compatible, presumably compatible with the charger.”

Allen Tr. 48:25-49:3. That is sufficient to render the claims obvious, which do not require verifying parameters. My testimony that the information “could” include the resonant frequency merely related to the fact that confirming compatibility was obvious and Cook provides a POSA with mechanisms to do so. Whether the ID used for authentication was based on an RFID device or “some written item on the automobile, e.g., the license plate or serial number of barcode on the automobile” (Cook [0014]), uniquely identifying the vehicle, resonator, or subscriber, all are mechanisms disclosed in Cook that a POSA would have been able to employ for authentication to confirm compatibility.

27. Nevertheless, Cook describes automatic charging when the antenna “comes into range of a wireless charging circuit of appropriate type, e.g. *the right frequency*.” Cook [0012]. Dr. Horenstein confirmed in his deposition that “Cook just relies on the resonant frequencies being the same, and that’s something that can be measured by the receiving resonator, seeing at what frequency the transmitter is putting out energy.” Horenstein Tr. 59:9-13; *see also* 68:20-23 (agreeing “a target resonant frequency is one of the physical parameters of a resonator”).

28. The same is true for Bennett. As Dr. Horenstein states in his declaration, 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]). Dr. Horenstein also described Bennett as “comparing resonators for the compatibility of their physical parameters,” namely their “resonant frequency.” Horenstein Decl., ¶ 45. In his deposition he also stated 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. This is supported in Bennett’s Figure 3 (reproduced below), for example, where the power transmitting unit requests “Resonant Frequency Information” at step 307 before “Resonant Frequency Power is Delivered” in step 311.

**FIG. 3**

29. Although Dr. Horenstein asserts that Bennett's checking and tuning of resonant frequency is not done "*a priori*" and "is not the same as checking ahead of time that the resonant frequencies match." Horenstein Decl., ¶ 49. Thus, the combination of Bennett and Cook discloses confirming compatibility even under Dr. Horenstein's construction. I disagree. Bennett performs checking and

tuning of resonant frequency both before and after authentication. Bennett's Figure 3 (reproduced above) and related discussion disclose the checks *before* authentication and before resonant power transfer. *See also* Bennett [0057]-[0058] (target device sends its "(tuned) resonant frequency information to the power transmitting unit" which later "generates power employing the requested resonant frequency and delivers it in the form of magnetic field/waves"). As Dr. Horenstein asserted in his deposition, "the target device will send its resonant frequency information to the power transmitting unit before initiating power transfer." Horenstein Tr. 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 discloses determining a "match" of information received from the target device with subscriber's information in the database—information that includes target resonant frequency. Bennett [0037]; *see also* [0046] ("[T]he power transmitting unit may be operable to deliver power to the target device only after authenticating the target device."); Horenstein Tr. 68:11-18 (confirming that Bennett's "authentication information" received from the target device includes "the target resonant frequency"); *see also* 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."). Dr. Horenstein further stated 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. I agree with Dr. Horenstein’s characterization of Bennett in this context.

30. Dr. Horenstein asserted, however, that checking the resonant frequency is not sufficient to verify that parameters permit power transfer (i.e., under his construction). 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”). However, his declaration 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”). Further, nothing in his construction excludes checking resonant frequency for compatibility.

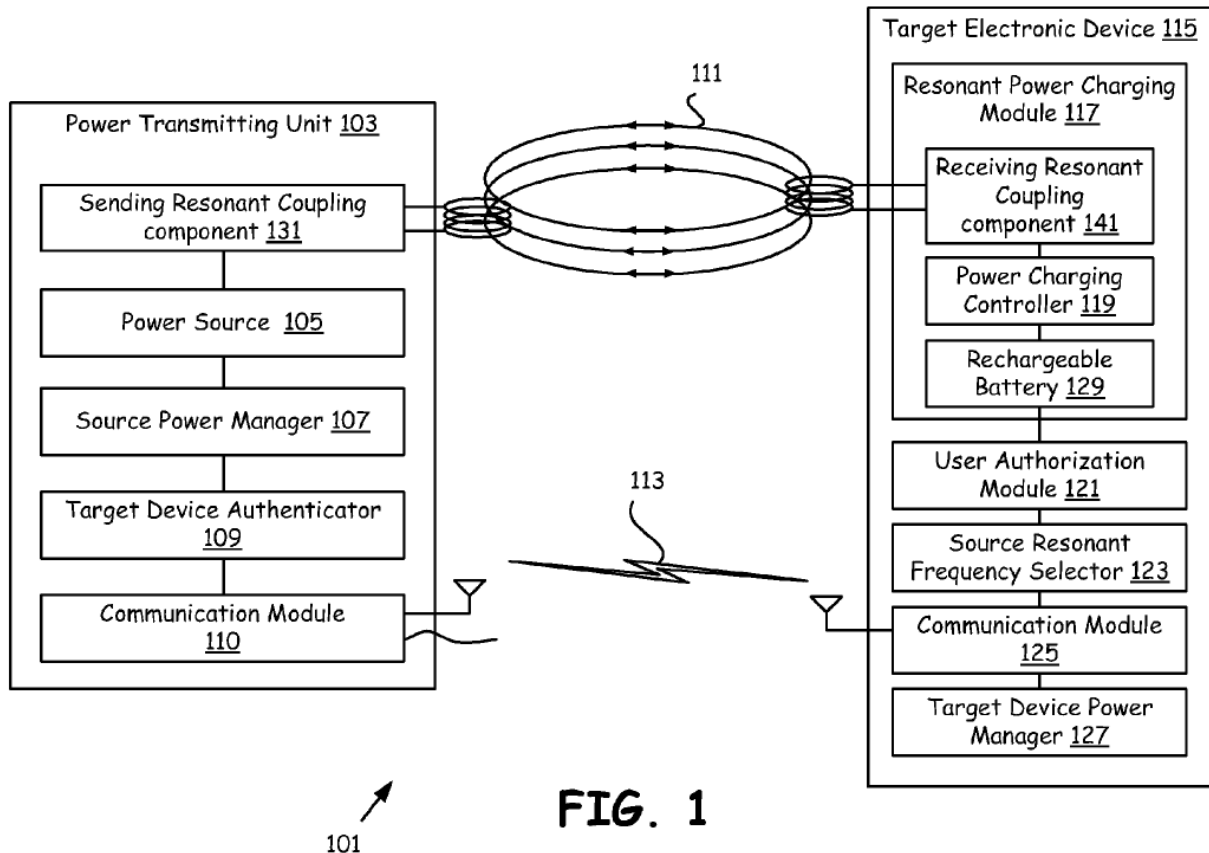
31. Dr. Horenstein’s criticisms of Bennett are similar to those of Cook: specifically, that Bennett “disclose[s] the checking of subscriber information and user identification” but does not, “[e]xcept for resonant frequency . . . disclose[] or even suggest[] comparing resonators for the compatibility of their physical parameters.” Horenstein Decl., ¶ 45. I disagree. Similar to Cook, Bennett performs authentication based on an identifier of the *target device*. Specifically,

Bennett discloses that “target device authenticator 109 receives the identity of the magnetic resonant target device 211”—provided by user authorization module 219—and confirms the user’s subscription “by comparing information available with the target device authenticator 209 (or a database maintained or accessed by it) with the information provided by the user authorization module 219.” Bennet [0052]. This identification is based on a “pre-assigned identification number of the target device” which is stored in the database. Bennett [0067]. By authenticating the *target device*, Bennett is plainly not limited to checking subscriber information. Horenstein Decl., ¶ 45; *see* 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.”). In other words, it performs “target device authentication” in the same manner as the ’687 patent. Bennett Abstract; *see* Horenstein Decl., ¶ 43 (quoting Bennett Abstract); ’687 patent, 102:14-21.

32. Further, to the extent that Dr. Horenstein relies on his express and implied constructions—including that “providing authorization relates to checking a user account”—I disagree that the claims are so defined. *See* Section IV, above. For example, the claimed authorization facility can confirm compatibility through authentication of “the source and device.” ’687 patent, 102:14-17. As such, authentication can include ensuring that only devices “that

are part of a specific subscription or plan, are able to receive power from a source.” *Id.* 102:17-21. Providing authorization for initiation of power transfer can be done via a “trigger” provided by “any number of mechanisms: radio, magnetic near field radio, conductive signaling, ultrasonics, laser light.” ’687 patent, 103:13-16.

33. Dr. Horenstein further asserts that “the ‘power control signal exchange operation’ [of Bennett] relates to the automatic triggering of the resonant power charge operation based on the battery level of the rechargeable battery, [but] it says nothing about the compatibility of the resonators.” Horenstein Decl., ¶ 59 (quoting Bennett [0039]). I disagree. In its discussion of the communicating module 125, Bennett discloses “[a] power control signal exchange operation is required for the authentication of the target electronic device 115 *before a successful resonant power delivery.*” Bennett [0039] (emphasis added). According, to Bennett, “The power control communication that takes place between the target electronic device 115 and the power transmitting unit 103 during the resonant charging request, etc. is also performed using the communication module 125.” Bennett [0039]. Conversely, Bennett discusses “automatic triggering” in the *following* paragraph in relation to the target device power manager 127, which is a different module than communicating module 125, as shown in Figure 1, reproduced below.



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

34. In my first declaration I discussed why a POSA would have been motivated to combine Cook and Bennett. Ex. 1003 ¶¶ 107-123.

35. Patent Owner asserts that I testified in deposition 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 Allen Tr. 49:17-50:3). That was not my testimony, and Patent Owner omits the follow-up question and answer:

Q. So just so I’m clear, so what you’re saying is a person of skill in the art would be able to implement the authorization function that’s

described in Cook just based on the description in Cook. Is that what you're saying?

A. 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.

Allen Tr. 50:8-19. That is still my opinion, and it is consistent with my first declaration in this case. Ex. 1003 ¶¶ 179-180. It has never been my opinion that a POSA would not look to or need the details of Bennett. I explained in my first declaration that Bennett contains additional details about various aspects of monetizing a wireless power transfer system that are lacking in Cook. Ex. 1003 ¶¶ 114-119, 180-183. These include details about encryption, communication, and authentication. *Id.* A POSA would not have found such details redundant to Cook, which provides underlying disclosure of a need for these aspects, but does not provide the details that can be found in Cook. *Cf.* Horenstein Decl., ¶¶ 69-72. For example, Dr. Horenstein asserts that "a POSA would have understood how to implement the encryption scheme described in Cook, and would not have needed to consult Bennett for details regarding encryption" (Horenstein Decl., ¶ 71), but he offers no further explanation. I disagree for the reasons provided in my first declaration. Ex. 1003 ¶¶ 115-118.

VI. CONCLUSION

All statements made herein of my own knowledge are true, and all statements made on information and belief are believed to be true. Further, I am aware that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001. I declare under penalty of perjury that the foregoing is true and correct.

Executed on Aug 30, 2024 (date), in Philadelphia, PA (city, state).


Mark Allen