

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INDUCTEV, INC.
Petitioner,

v.

WITRICITY CORPORATION,
Patent Owner.

Case IPR2024-00140
Patent 8,466,654

**PATENT OWNER'S CORRECTED PRELIMINARY SUR-REPLY TO
PETITIONER'S PRELIMINARY REPLY**

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TABLE OF AUTHORITIES

CASES

<i>BlephEx, LLC v. Myco Indus.</i> , 24 F.4th 1391 (Fed. Cir. 2022)	5
<i>Net MoneyIN, Inc. v. VeriSign, Inc.</i> , 545 F.3d 1359 (Fed. Cir. 2008)	5

EXHIBIT LIST

Ex. 2001 – Declaration of Mark N. Horenstein Regarding Certain Claim Terms
Found in U.S. Patent No. 8,466,654 (filed February 22, 2024)

Ex. 2002 – Curriculum Vitae of Mark Horenstein

Ex. 2003 – Excerpts from Wiley Electrical and Electronics Engineering
Dictionary, IEEE Press, 2004 – Part 1

Ex. 2004 – 2004 McGraw-Hill Dictionary of Scientific and Technical Terms (5th
Ed., 1994) (selected pages)

Patent Owner respectfully submits this preliminary sur-reply to Petitioner's Preliminary Reply ("PPR"). Regarding Ground 1, Petitioner selectively quotes portions of the '654 Patent specification, out of context, in an effort to cure Petitioner's fundamental failure to understand the difference between an antenna and a transformer. These basic electrical elements are well-understood, and no amount of obfuscation can change the fact that Odachi discloses a transformer, not antennas. Regarding Ground 2, Petitioner continues to improperly combine disparate teachings of Ross to arrive at claims 8 and 13, violating the well-established rule that the prior art must disclose the claimed elements as they are arranged in the claim.

I. Ground 1: Odachi Discloses a Transformer—Not Antennas

Patent Owner's definition of "transmitting antenna" as "a primary coil that produces a near-field component of flux into free space that is intercepted by a secondary coil to effect resonant inductive coupling" is fully supported by the specification, and consistent with a POSA's understanding. Petitioner brazenly argues that the specification "only" states the transmitting antenna "provides a means for energy transmission." PPR at 2. But the *very portion* cited by Petitioner, after stating this general function, explains that the antennas transfer energy "by coupling a large portion of the energy *in the near-field* of the transmitting antenna to a receiving antenna rather than propagating most of the energy in an electromagnetic wave to the far field." Ex. 1001 at 2:31-35 (emphasis added).

Petitioner also misunderstands the concepts of “near-field” and “far-field,” arguing that the near-field component of flux cannot be produced “into free space.” PPR at 2. Both the near-field and far-field flux are in “free space” in the sense that the flux exists in the air both near the antenna (near-field), and further away from the antenna (far-field). *See* Ex. 2001, ¶¶21-24. In fact, the specification expressly states that “the near-field is an area around the antenna in which electromagnetic fields exist,” and FIG. 4 shows “free space” between the primary and secondary coils. Ex. 1001 at 3:45-46, Fig. 4. The specification also describes “propagating...energy...to the far field” (2:31-35) interchangeably, contrasting such propagation with near-field energy transfer. Contrary to Petitioner’s argument, this distinction between near and far field flux in no way suggests that near-field flux is not “into free space.”

Petitioner next argues that Patent Owner’s proposed definition of “antenna” is somehow inconsistent with dictionary definitions of a “device that radiates and/or receives radio waves,” and baldly asserts that Odachi discloses “antennas” under these definitions. PPR at 3. But the general definition of a device that radiates radio waves is entirely consistent with the definition of “antennas” as used in the ’654 Patent because radio waves are electromagnetic waves emitted into the near-field, just as Patent Owner’s definition states. *See* Ex. 2001, ¶¶24-26. More importantly, Odachi does not disclose an “antenna” that radiates radio waves or emits a near-field

component of flux into free space. Ex. 2001, ¶¶29-33. Odachi discloses a transformer having two coils wrapped around an E-shaped core. *Id.* Although there are gaps between the “legs” of the E-shaped core, the magnetic flux is contained within the core, and fundamentally is not emitted into the near-field like the claimed “antenna.” *Id.*

Petitioner's last argument attempting to equate antennas and transformers is equally flawed. Simply because an antenna may have a ferrite core does not make it equivalent to a transformer. Adding a ferrite core to the center of the transmitting and receiving coils prevents the magnetic field from generating eddy currents in metal near the antenna (Ex. 1001, 2:62-3:3), but the primary coil still produces a near-field component of flux into free space that is intercepted by the secondary coil. Despite Petitioner's efforts to cloud this straightforward issue, the transformer of Odachi simply is not an antenna, which is fatal to Petitioner's Ground 1.

II. Ground 2: Petitioner Improperly Combines Separate Teachings of Ross

Claims 8 and 13 of the '654 Patent recite measuring, at the receiving antenna, a degree of coupling between the transmitting and receiving antennas, and moving the receiving antenna (or transmitting antenna in claim 13) to improve antenna alignment. Ex. 1001, claims 8, 13. Ross discloses that, as the driver approaches a loading/unloading zone, an auto-positioning feature is engaged that uses vehicle sensors 60 to sense the position of the vehicle relative to the roadway power

transmitting module 24, and a microprocessor controller 56 steers the vehicle within a rough tolerance (5-10 cm) of the optimum lateral position. *See* Ex. 1007 (“Ross”), 12:40-47. Petitioner contends that this position within a “rough tolerance” of the optimum position in the loading/unloading zone corresponds to the claimed “first alignment position.” Pet. at 53-54. Ross further explains that once the vehicle is “stopped,” the coil 42 is moved to a second position that is more closely aligned (within 1-2 cm) with the optimal position using conventional hydraulic and/or electronic positioning devices. Ross, 12:52-57. But critically, Ross fails to disclose measuring the degree of coupling at the first alignment position (claim 8) or moving the transmitting/receiving antenna to the second position in response to the detected degree of coupling (claim 13).

Ross explains that after the RPEV is charged, and “before the RPEV can be *driven away from the passenger loading/unloading zone,*” the assembly 44 (which contains coil 42) is raised to its normal position. *Id.*, 12:63-13:4 (emphasis added). Once “the RPEV is traveling (being driven)” an approximate lateral position of the coil 42 may be determined by monitoring the change in amplitude of the inductively received power signal. *Id.*, 12:15-26. But monitoring the amplitude of the inductively received power signal does not occur in the “first alignment position” in the loading/unloading zone of Ross. Even if the amplitude of the signal may be monitored while the RPEV is temporarily stopped (13:20-21), e.g., at a stop light,

Ross fails to disclose measuring the amplitude of the inductively received power signal in the loading/unloading zone (*i.e.*, in the “first alignment position”) as required by claim 8, or moving the coil 42 from the first alignment position to the second alignment position based on the amplitude of the monitored signal, as required by claim 13. That is, Ross makes clear that the description of monitoring the amplitude of the inductively received power signal occurs *after* the RPEV is “driven away from the passenger loading/unloading zone.” *Id.*, 12:63-13:4.

Petitioner cannot cobble together disparate teachings of Ross in an attempt to argue that Ross teaches moving the transmitting/receiving antenna from the first alignment position to the second alignment position in response to the degree of coupling detected at the receiving antenna. *See, e.g., BlephEx, LLC v. Myco Indus.*, 24 F.4th 1391, 1400 (Fed. Cir. 2022) (“[I]t is not enough that the prior art reference . . . includes multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention”). Because Ross does not disclose this feature of claims 8 and 13 “arranged or combined in the same way as recited in the claim,” Ground 2 fails. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008).

III. Conclusion

For the reasons explained above, the Board should deny institution.

Dated: April 17, 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

It is certified that a copy of the *Patent Owner's Corrected Preliminary Sur-Reply* has been served on Petitioner as provided in 37 C.F.R. § 42.6(e) via electronic mail transmission addressed to the persons at the address of record as follows:

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