

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORPORATION,

Petitioner,

v.

BUNKER HILL TECHNOLOGIES, LLC

Patent Owner

IPR2026-00250

U.S. Patent No. 10,549,648

PETITIONER'S REPLY TO PATENT OWNER PRELIMINARY RESPONSE

Patent Owner (“PO”) wrongly argues that “bypasses the transmission device” means “a bypass-capable coupling arrangement” in all operating modes.

E.g., POPR at 6 (“Bypass is architectural (coupling-based), not modal”), 10 (“Bypass is defined by the coupling arrangement, not operating mode”). The intrinsic record does not support this narrow interpretation. “Bypasses” is not defined in the claims, specification, or prosecution history. Contrary to the limitation(s) PO seeks to import into the claims, the plain and ordinary meaning of “bypasses” is “does not pass through” or “without passing through” to reach the wheels. See Petition at 18, 61, 73. Thus, all that is required by “bypasses the transmission device” is that the output of the second motor does not pass through the transmission device to reach the wheels.

PO argues that Conlon does not disclose the claimed bypass because it describes a “single integrated EVT architecture” comprised of two planetary gear sets rather than a transmission device and a distinct gear assembly. POPR at 20-26. But given its proper meaning, the claimed bypass is disclosed in Conlon because the “gear assembly” limitation is satisfied by second planetary gear set 22. Petition at 17-19. PO’s argument to the contrary—that planetary gear set 22 is an “internal element *within* the transmission device itself” and not a separate gear assembly that provides a bypass—misunderstands and conflates “transmission device” with the ’648 patent’s and Conlon’s description of an EVT.

Conlon's Figure 1 shows a lever diagram in which "EVT 14 may be represented schematically using a pair of three-node levers 20 and 22" that correspond to first and second planetary gear sets 20 and 22 (EX1004, ¶ 0029), but this does not compel reading both planetary gear sets as part of a single transmission device. Under both side's plain and ordinary meaning of "transmission device" and "gear assembly," these terms are broad enough to encompass Conlon's planetary gear sets 20 and 22, respectively. Further, an EVT can—and frequently does—function with just one planetary gear set; Conlon's second planetary gear set 22 is not necessary for first planetary gear set 20 to function as a transmission device. A POSITA would understand that Conlon's EVT contains multiple components and can be divided into a separate transmission device and gear assembly. EX1003, ¶¶ 85-87.

PO wrongly argues that "coupled between . . . such that . . . bypasses" means the transmission device must remain "coupled" when it is "bypassed." POPR at 41 (distinguishing Ortmann mode 1 because "[t]he transmission device is not 'bypassed' *while remaining coupled in the manner required by the claims*"). The "such that" language refers to the gear assembly arrangement and simply means the second motor does not provide output to the wheels through the transmission device. Regardless, Ortmann satisfies the claims even under PO's interpretation.

PO argues the transmission device must remain coupled while it is bypassed, but does not specify what it must remain coupled *to*. If PO asserts the transmission device must remain coupled to the gear assembly (which the claims would at most require only for dual drive mode as set forth in limitations 1[g][i], 9[g][i], and 16[g][i], not for all modes), this is satisfied by at least Ortmann modes 2 and 5 because planetary gear set 14 and layshaft gearing 18 are coupled when clutch C2/72 is engaged. *See* Petition at 63-65; EX1008, ¶¶ 0026, 0030, 0034-0036, Figs. 4-5; EX1003, ¶¶ 310-317. To the extent PO asserts that “coupled” also requires the transmission of power, power from motor 22 is transmitted via clutch C2/72 through planetary gear set 14 in mode 2, and power from motor 22 and the engine is transmitted through ring gear 28 of planetary gear set 14 in mode 5. *Id.* In addition, planetary gear set 14 and layshaft gearing 18 are coupled through layshaft gear 37 when clutch C1/70 is engaged in modes 4 and 5. EX1008, ¶¶ 0020, 0032; Figs. 4-5.

PO is also incorrect that Ortmann mode 4 does not disclose “bypassing the transmission device” because motor 16’s output is “mechanically integrated” with planetary gear set 14. POPR at 42-43. Power from motor 16 and planetary gear set 14 may become “integrated” *downstream* at countershaft 34, but this does not mean motor 16’s output power passes “upstream” to mechanically influence planetary gear set 14. And to the extent some small amount of power from motor 16 does pass through planetary gear set 14, it does not reach the wheels.

Date: June 2, 2026

Respectfully submitted,

/s/ John F. Presper
John F. Presper
Counsel for Petitioner
Registration No. 53,483

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF SERVICE

The undersigned certifies, in accordance with 37 C.F.R. §§ 42.105 and 42.6, was made on the Patent Owner as detailed below.

Date of service June 2, 2026

Manner of service Electronic Mail

Documents served Petitioner's Reply to Patent Owner's
Preliminary Response

Served upon:

Tarek N. Fahmi Ascenda Law Group, PC 2150 N First Street, Suite 420 San Jose, CA 85131 tarek.fahmi@ascendalaw.com	
Patrick Conroy Nelson Bumgardner Conroy PC 2727 N. Harwood Street, Suite 250 Dallas, TX 75201 pat@nelbum.com	Courtesy copies served via Electronic Mail on Patent Owner's litigation counsel

/s/ John F. Presper
John F. Presper
Counsel for Petitioner
Registration No. 53,483
MERCHANT & GOULD, P.C.
1900 Duke Street, Suite 600
Alexandria, VA 22314
Telephone: 703-684-2500
E-Mail: jpresper@merchantgould.com