

IPR2025-00805

U.S. Patent No. 10,393,034

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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HARBOR FREIGHT TOOLS USA, INC.,  
GENERAC POWER SYSTEMS, INC., and  
MWE INVESTMENTS, LLC,

Petitioners

v.

CHAMPION POWER EQUIPMENT, INC.,

Patent Owner.

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Patent No. 10,393,034

Issued: August 27, 2019

Title: FUEL SYSTEM FOR A MULTI-FUEL INTERNAL COMBUSTION  
ENGINE

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*Inter Partes* Review No. IPR2025-00805

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**PETITIONER'S PRELIMINARY REPLY TO THE PATENT OWNER  
PRELIMINARY RESPONSE**

As authorized by the Board (Ex. 3002), Petitioners file this Preliminary Reply to the Patent Owner Preliminary Response (“POPR”; Paper 12).

The ’034 Patent is directed to engines operable on a liquid fuel and a gaseous fuel. Patent Owner does not dispute that the Kubota Manual (“Kubota”; Ex. 1012) and Nakafushi (Ex. 1005) teach engines operable on gasoline liquid fuel and LPG gaseous fuel—indeed, the POPR is silent regarding Element [1.1]. Instead, Patent Owner attempts to construe the terms “gaseous fuel source” (Element [1.2]) and “gaseous fuel supplied from a pressurized fuel source” (Claims 11 and 18) to add limitations not found in the intrinsic evidence.

The specification teaches that, while LPG is commonly stored under pressure as a liquid, it is nonetheless a “gaseous fuel” because it exists as a gas at normal temperature and pressure<sup>1</sup> (and is delivered to the engine carburetor as a gas). Ex. 1001, 1:43-49, 5:39-61, 6:27-36. Thus, the “gaseous fuel source” is nothing more than the source of the LPG gaseous fuel, which is consistent with both the specification and the prior art. *See, e.g.*, Ex. 1009, 2:8-25 (referring to the tank where gaseous fuel is drawn off as a liquid as the “gaseous fuel supply”).

Patent Owner confirmed as much during prosecution of the parent ’398

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<sup>1</sup> EPA regulations (governing engines/generators) define “gaseous fuel” the same way: “a material that is in the gaseous state at standard temperature and pressure conditions and that is combusted to produce heat and/or energy.” 40 C.F.R. §98.6.

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Patent (*see* POPR, 2-3). There, the Examiner cited Sugimoto as teaching an

“engine operable on a gaseous fuel and a liquid fuel,” where the cited liquid fuel was butane stored under pressure as a liquid, which was subsequently vaporized between the tank and engine. Ex. 1038, 180 (citing Ex. 1041, ¶¶[0085]-[0086]).

However, Patent Owner disputed this position and clarified that the butane was still a “gaseous fuel” even though drawn from the tank in liquid form:

“[Sugimoto’s] fuel pressure regulator 62 functions as a vaporizer for vaporizing the first fuel gas supplied thereto in liquid phase.” Since the first fuel gas is vaporized by the fuel pressure regulator 62, the first fuel gas and the second fuel gas are provided in a gaseous form to the carburetor 18b. As such, the Examiner has not shown that Sugimoto discloses an engine operable on a gaseous fuel and a liquid fuel.

Ex. 1038, 218; *see also id.*, 217 (acknowledging that Sugimoto’s fuel bottle supplies the first “fuel gas” in liquid phase to the regulator for vaporization); 284 (refusing to acquiesce to the Examiner’s rejections). Notably, it was irrelevant to Patent Owner that Sugimoto’s fuel was stored under pressure in liquid form, left the storage tank as a liquid, and was vaporized en route to the engine. According to Patent Owner, fuel provided in this manner still constitutes a “**gaseous fuel.**”

However, even though configured just like Sugimoto regarding the supply of gaseous fuel, the POPR remarkably takes the opposite view and alleges that Kubota’s tank 14 “supplies liquid fuel, *not* gaseous fuel,” and says the same of

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Nakafushi's cylinder 16. POPR, 28, 31 (*italics in original*). The POPR thus contradicts the position taken during prosecution to distinguish Sugimoto.

**A. Nakafushi and Kubota Disclose LPG “Gaseous Fuel,” with a Pressurized Tank as the “Source” of the LPG**

Nakafushi and Kubota indisputably disclose engines operating on gasoline as the liquid fuel and LPG as the gaseous fuel. Pet. 27, 69-70. Where the LPG gaseous fuel comes from is the *de facto* gaseous fuel “source.” Just like in Sugimoto, Bernhardsson, and the '034 Patent, the LPG in Nakafushi and Kubota is stored under pressure as a liquid and is vaporized into gaseous form **before** being delivered to the engine's carburetor. *Id.*, 34-35, 45 (Nakafushi); 70, 94-95 (Kubota). Thus, both Nakafushi and Kubota disclose “sources” for their LPG gaseous fuel as required for claim 1, and those sources are pressurized, as required for claims 11 and 18. The claims require nothing more.

**B. The POPR Manufactures Limitations Not Found in the Intrinsic Evidence**

Unable to contest the express teachings of Nakafushi and Kubota, Patent Owner now attempts to create a distinction regarding **where** the LPG gaseous fuel is vaporized, i.e. in the LPG tank or in a vaporizer just outside the tank. POPR, 26-31. While importing limitations from embodiments into the claims would be improper by itself (*Hill-Rom Servs. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014)), Patent Owner is even more brazen here in fabricating limitations that are not even disclosed in the specification, which nowhere indicates what form the

LPG leaves the pressurized tank. Furthermore, given that all of the claims rely on the transitional phrase “comprising,” none can be said to preclude the inclusion and use of a vaporizer outside the tank.

Given the lack of intrinsic evidence support, Patent Owner resorts to citing purely extrinsic evidence in attempting to narrow the claims to a distinct subset of LPG system operations.<sup>2</sup> POPR, 14-20. Unsurprisingly, the Federal Circuit has held that such extrinsic evidence cannot be used to impose unsupported limitations. *Weber, Inc. v. Provisur Techs., Inc.*, 92 F.4th 1059, 1070 (Fed. Cir. 2024) (“We need not consider the extrinsic evidence that limits the claim scope in a manner not contemplated by the intrinsic record.”), *cert. denied*, 145 S. Ct. 173 (2024).

Patent Owner also alleges that the Examiner “apparently” agreed with its interpretation by not citing Tsuda (which the POPR refers to as the “Kubota Patent”) during the ’034 prosecution (POPR, 31-33), but no evidence suggests such Examiner agreement. The NOA shows that the ’034 claims were allowed because the Examiner viewed an engine using “two or more fuels via a selective switch and liquid cutoff solenoid valve” as novel. Ex. 1002, 16. And the NOA for the parent

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<sup>2</sup> Patent Owner’s claim (POPR, 20) that vapor and liquid service are completely different and incompatible with each other is contradicted by the art. For example, Sugimoto teaches that propane vapor and butane liquid are provided to the same pressure regulator 62, and from there to the engine. Ex. 1041, ¶¶[0078]-[0079].

'398 Patent states that Tsuda failed to disclose “a liquid cut-off incorporated into the carburetor.” Ex. 1038, 511. Both conclusions are erroneous, as confirmed by Patent Owner’s own admission that Tsuda discloses a “gasoline solenoid in the carburetor, and a switching device to choose which fuel source is active” (POPR, 32, n.4).<sup>3</sup> And in fact, Tsuda directly contradicts Patent Owner’s position, since Tsuda withdraws liquid LPG from tank 31 and then converts it to gaseous form in vaporizer 32—just as in Nakafushi and Kubota—yet still refers to tank 31 as the **“gaseous fuel supply source.”** Ex. 1018, 3:20-27, Fig. 3.

In sum, the term “gaseous fuel” refers to a fuel that is in gaseous form at normal temperature and pressure, such as LPG. Just because LPG is pressurized and stored as a liquid for convenience does not convert it to a “liquid fuel.” Accordingly, Nakufushi’s and Kubota’s LPG tanks are “gaseous fuel sources” and “pressurized fuel sources” that provide gaseous fuel (LPG) regardless of where the LPG is vaporized en route to the engine’s carburetor. Patent Owner improperly attempts to create limitations that simply do not exist in the claims or specification, and are directly contradicted by the prosecution history of the parent patent where Patent Owner explicitly argued that a fuel stored as a liquid but delivered to the carburetor as a gas constitutes a “gaseous fuel.”

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<sup>3</sup> Patent Owner’s admissions further emphasize the Examiner’s error in failing to cite Tsuda during prosecution of the '034 Patent. *See* Paper 14, 28-38.

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**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that on September 15, 2025, a true and correct copy of the foregoing **PETITIONER'S PRELIMINARY REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE** was filed through the PTACTs system along with service to the email addresses listed below:

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