

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

CHAMPION POWER EQUIPMENT, INC.,
Patent Owner.

Case No. IPR2025-01121
U.S. Patent No. 11,143,120

**PATENT OWNER CHAMPION POWER EQUIPMENT, INC.'S
PRELIMINARY RESPONSE**

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GLOSSARY

Abbreviation	Term
'120 Patent	U.S. Patent No. 11,143,420
'398 Patent	U.S. Patent No. 10,697,398
'439 Application	U.S. Patent Application No. 16/946,439
'441 Application	U.S. Patent Application No. 14/925441
Board	Patent Trial and Appeal Board
Challenged Claims	Claims 12-17 of the '120 Patent
Generac	Generac Power Systems, Inc.
Harbor Freight	Harbor Freight Tools USA, Inc.
MWE	MWE Investments, LLC
Patent Owner	Champion Power Equipment, Inc.
Petition	Petition for Inter Partes Review of U.S. Patent No. 11,143,420 (Paper 4)
Petitioner	Harbor Freight, Generac, and MWE, collectively
POSITA	Person of Ordinary Skill in the Art
USPTO	United States Patent & Trademark Office

Pursuant to 37 C.F.R. § 42.107, Patent Owner Champion Power Equipment, Inc. hereby submits its Preliminary Response to the Petition filed by Harbor Freight Tools USA, Inc., Generac Power Systems, Inc., and MWE Investments, LLC (collectively, “Petitioner”), challenging Claims 1-19 of U.S. Patent No. 11,143,120.

On October 10, 2025, Patent Owner disclaimed Claims 1-11 and 18-19 of the ’120 Patent, pursuant to 35 U.S.C. § 235. EX2102. As such, Patent Owner refers to the remaining claims (Claims 12-17) as the “Challenged Claims.”

I. INTRODUCTION

Petitioner’s remaining Grounds (following Patent Owner’s disclaimer of Claims 1-11 and 18-19) are identified below:

Ground	Claims	Basis	Primary Reference	Secondary Reference(s)
5	12-15, 17	102	Kubota DF972 Workshop Manual	
6	16	103	Kubota Workshop Manual	Parlatore
7	12-17	103	Nakafushi	Jungmann; Parlatore

Discretionary denial pursuant to 35 U.S.C. § 314(a), 35 U.S.C. § 325(d), and the *Fintiv* and *Advanced Bionics* factors¹ is warranted for the reasons set forth in

¹ *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential); *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte*

Patent Owner’s Brief in Support of its Request for Discretionary Denial of Institution (Paper 11). Moreover, denial is appropriate because Petitioner’s invalidity arguments are fatally flawed for failing to disclose “a gaseous fuel supplied from a pressurized fuel source.” Alternatively, institution should be denied because (1) the Workshop Manual does not disclose either (a) the claimed “multi-fuel generator” or (b) the claimed “fuel regulator system,” and (2) Nakafushi alone does not disclose either (a) the claimed “multi-fuel generator” or (b) the claimed “fuel regulator system” and Petitioner’s proposed combination of Nakafushi, Jungmann, and Parlatore is deficient. Finally, both the art and arguments advanced by Petitioner have already been advanced (and discarded) by the USPTO. Each basis for denial is discussed in turn, below.

II. OVERVIEW OF THE ’120 PATENT

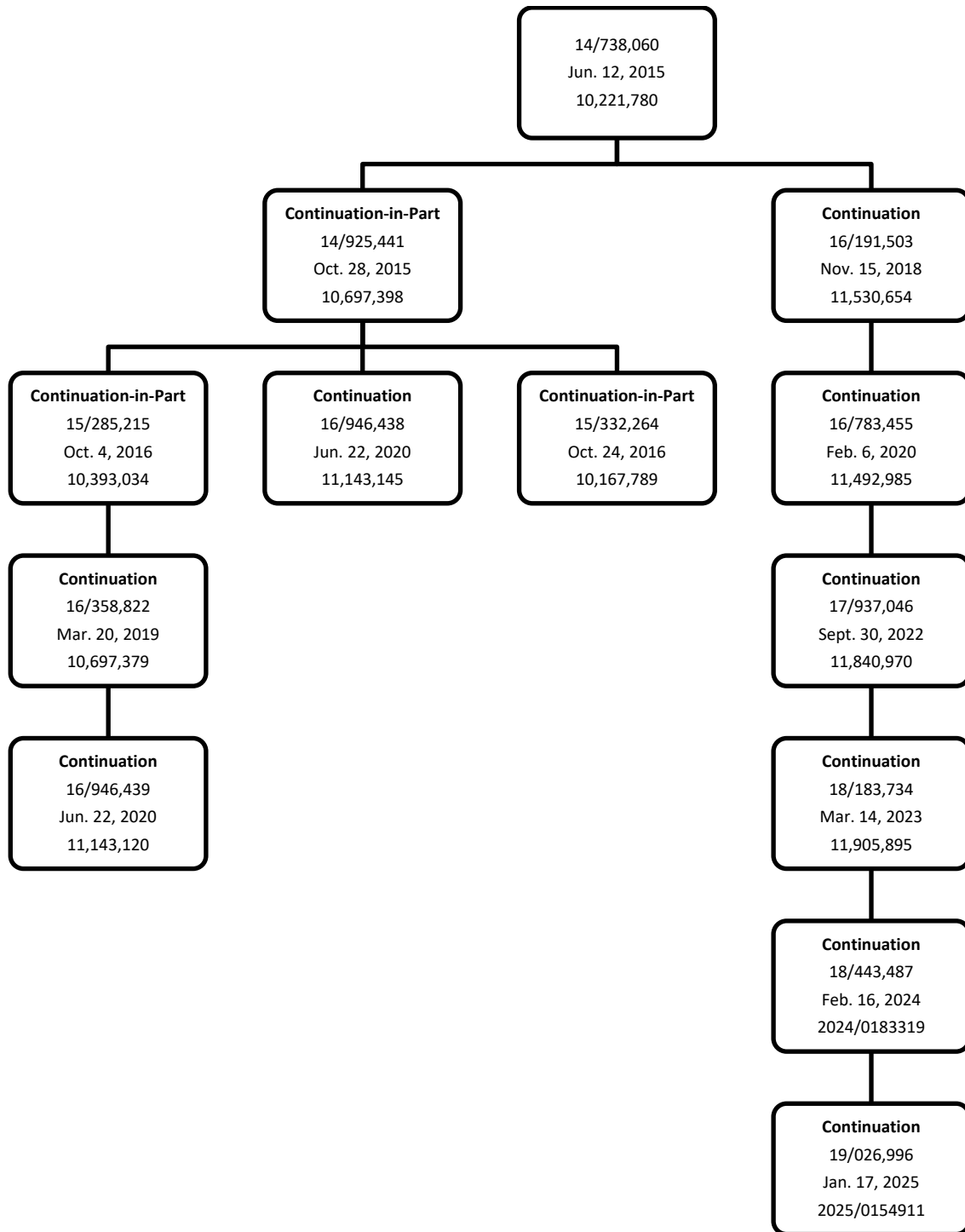
The ’120 Patent was filed as U.S. Patent App. No. 16/946,439 on June 22, 2020. EX1001, (21), (22). The priority claim for the ’120 Patent is reproduced below:

App. No.	Filing Date	Pat. / Pub. No.	Relationship
14/738,060	Jun. 12, 2015	10,221,780	
14/925,441	Oct. 28, 2015	10,697,398	CIP of ’780 Patent

GmbH, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential).

15/285,215	Oct. 4, 2016	10,393,034	CIP of '398 Patent
16/358,822	Mar. 20, 2019	10,697,379	Continuation of '034 Patent
16/946,439	Jun. 22, 2020	11,143,120	Continuation of '379 Patent

The '120 Patent is one of thirteen members of a patent family directed to multi-fuel engine technology, which are collectively referred to as the “2015 Family.” The 2015 Family is depicted below:



A. The Specification of the '120 Patent

The '120 Patent, titled “Fuel System for a Multi-Fuel Internal Combustion Engine,” is directed to a multi-fuel engine operable on both liquid fuel and gaseous

fuel. EX1001, Abstract. The '120 Patent explains that problems with such multi-fuel engines include overly rich air-fuel ratios, difficulties starting the engine, and unstable operating conditions when switching between liquid fuel and gaseous fuel:

[A] common problem with such configurations that couple two fuel sources to a single fuel inlet, such as a carburetor, of an engine is that during cross-over switching between the fuel sources the engine can experience overly rich air-fuel ratio. This is particularly problematic when switching from a liquid fuel to a gaseous fuel because carburetors have a fuel bowl containing fuel that is drawn into the engine even after the liquid fuel source is cut-off. Therefore, for a period of time, the engine is running on both liquid and gaseous fuels causing an overly rich fuel mixture. Further, such simultaneous delivery of fuel from the first fuel line and the second fuel line, even if for a brief time, may make the engine hard to start and lead to unstable operating conditions.

EX1001, 1:66-2:11; *see also* EX2078 (Singhose Decl.), ¶79.

To address these problems, the multi-fuel engine of the '120 Patent “includes a liquid cutoff solenoid coupled to open and close a liquid fuel path to the engine, and a gaseous cutoff solenoid coupled to open and close a gaseous fuel source to the engine.” *Id.* at 2:23-26. Further, “[a] switch coupl[es] a power source to the liquid cutoff solenoid and the gaseous cutoff solenoid to switch between fuel sources on-the-fly during engine operation.” *Id.* at 2:29-31; EX2078 (Singhose Decl.), ¶80.

As the '120 Patent explains, gaseous fuels include, for example, gaseous “liquified petroleum gas, compressed natural gas, hydrogen, or the like.” EX1001, 1:50-51. “Liquified petroleum gas (LPG), often referred to as propane, exists in a gaseous state at normal temperature and pressure but can be conveniently stored under pressure in a liquid state.” *Id.* at 1:51-54. With respect to the systems disclosed by the '120 Patent, when the valve at the top of the propane cylinder is opened propane vapor is released, which causes the pressure within the cylinder to drop. The drop in pressure then causes additional liquid LPG fuel within the tank to evaporate into a gas. The fuel exits the valve in a gaseous state, *not* as liquid propane. *See* Section V, *infra*; EX2078 (Singhose Decl.), ¶81.

Because the pressurized fuel source described by the '120 Patent supplies gaseous fuel to the system (as opposed to liquid fuel), it does not require a vaporizer, or a heat source necessary for operation of a vaporizer, to change the fuel from a liquid state to a gaseous state. Instead, the '120 Patent discloses two pressure regulators: (1) primary pressure regulator 64 to regulate the pressure of the gaseous fuel when it is drawn from the fuel source and (2) secondary pressure regulator 66 to regulate the pressure of the gaseous fuel received from primary pressure regulator 64. A POSITA would have understood that primary pressure regulator 64 and secondary pressure regulator 66 “reduce and control the pressure of the fuel from pressurized fuel container 50 and delivers fuel at a desired pressure for operation of

the engine.” EX1001, 3:66-4:3. However, the fuel flowing through pressure regulator 64 and secondary pressure regulator 66 is in a gaseous state, as drawn from the gaseous fuel source. EX2078 (Singhose Decl.), ¶¶82-83.

B. The Independent Claim of the '120 Patent

Claim 12 of the '120 Patent is reproduced below:

12. A multi-fuel generator and fuel delivery system comprising:
- a multi-fuel internal combustion engine configured to operate on a liquid fuel supplied from a liquid fuel source through a liquid fuel line and a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line;
 - an alternator driven by the multi-fuel internal combustion engine;
 - and
 - a fuel regulator system comprising:
 - a primary pressure regulator coupled to a service valve of the pressurized fuel source to regulate fuel supplied from the pressurized fuel source to a reduced pressure, and
 - a secondary pressure regulator coupled to the primary pressure regulator to regulate fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the engine.

C. The Prosecution History of the '120 Patent

1. The Grandparent '441 Application

U.S. Patent Application No. 14/925,441 (the grandparent to the '120 Patent), was filed on October 28, 2015. EX1001, (63). On October 11, 2018, the Examiner

(“Long T Tran”) rejected then-pending claims 1-63 of the ’441 Application. EX2053, 1-2. Of particular relevance, the Examiner rejected pending Claim 1 “under 35 U.S.C. 103 as being unpatentable over Poehlman (US 4,489,699) and in view of Tsuda et al. (US 5,809,979)” (assigned to Kubota Corporation and hereinafter referred to as “Kubota Patent”). EX2053, 4. Regarding Claim 1, the Examiner explained that “Poehlman [sic] teaches . . . a carburetor (15) attached to an intake (105) of the engine to mix air and fuel and connect to a gaseous fuel source (27) and a liquid fuel source (21)” and “Tsuda et al. teaches to the liquid fuel cut-off (14) is incorporated into the carburetor.” EX2053, 4-5.

After several rounds of back and forth with the Examiner, Patent Owner amended Claim 1 on May 28, 2019 to add additional limitations directed towards liquid and gaseous fuel valves:

1. (Currently Amended) A dual fuel engine comprising:
 - an engine operable on a gaseous fuel and a liquid fuel;
 - a switch to change operation of the engine between gaseous fuel and liquid fuel;
 - a carburetor attached to an intake of the engine to mix air and fuel and connect to a gaseous fuel source and a liquid fuel source;
 - a liquid fuel valve positioned along a liquid fuel line coupling the liquid fuel source to the carburetor;
 - a gaseous fuel valve positioned along a gaseous fuel line coupling the gaseous fuel source to the carburetor; and
 - a liquid fuel cut-off incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

EX2082, 119.

However, the Examiner issued a final rejection on July 22, 2019. EX2082, 81. The Examiner found that “Poehlman [sic] teaches . . . a liquid fuel valve (43) positioned along a liquid fuel line (19) coupling the liquid fuel source to the carburetor; [and] a gaseous fuel valve (45) positioned along a gaseous fuel line (25) coupling the gaseous fuel source to the carburetor.” EX2082, 84

In response to the final rejection, Patent Owner filed an appeal brief on January 22, 2020, arguing that the claims were patentable over the *combination* of Poehlman and Tsuda. Specifically, Patent Owner argued that a POSITA “would recognize that it would not be a mere ‘rearrangement of parts’ to modify the system of Poehlman to incorporate [features from Tsuda], as alleged by the Examiner.” *Id.*, 24, 37. A Notice of Allowance issued on March 6, 2020, where the Examiner conceded that “[i]t would not have been obvious to *further modify* the combination of Poehlman and Tsuda et al.” *Id.*, 13.

2. The ’439 Application

The ’439 Application was filed on June 22, 2020. EX1001, (21), (22). A notice of allowance was issued on May 21, 2021. EX1002, 102. Patent Owner filed a request for continued examination on July 1, 2021. *Id.*, 128. A second notice of allowance was issued on July 12, 2021. *Id.*, 244. The ’120 Patent was granted on October 12, 2021. EX1001.

On October 10, 2025, Patent Owner disclaimed Claims 1-11 and 18-19 of the '120 Patent, pursuant to 35 U.S.C. § 235. EX2102.

III. LEVEL OF ORDINARY SKILL IN THE ART

A POSITA pertinent to the Challenged Claims would have a four-year degree in mechanical engineering or a closely related field and at least one year of experience designing, developing, servicing, or operating fuel-powered machinery. Additional education could substitute for professional experience and significant work experience—such as working with, servicing, or operating such machinery in the field—could substitute for formal education. EX2078 (Singhose Decl.), ¶¶23-29.

Petitioner alleged that a POSITA:

[W]ould have a degree in mechanical engineering, physics, materials science, or related fields, and three years of work experience in combustion engines. Additional higher graduate education could substitute for work experience, and additional work experience/training could substitute for formal education.

Petition, 9 (citing EX1003, ¶¶30-33). Petitioner's proposed definition is deficient. Specifically, Petitioner has failed to support its contention that an undergraduate physics degree is pertinent to the Challenged Claims, or that three years of work experience in combustion engines is necessary. Moreover, Petition has not articulated a reason for applying a different definition of a POSITA in this

proceeding as compared to IPR2025-00805 (regarding the related '034 Patent), despite the fact that the '120 Patent and '034 Patent have a nearly identical specification. Regardless, the arguments advanced herein are not impacted based on which definition is applied. EX2078 (Singhose Decl.), ¶¶30-34.

IV. CLAIM CONSTRUCTION

Claim terms are to be construed in accordance with the standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*). But “[o]nly terms which are in controversy need to be construed, and then only to the extent necessary to resolve the controversy and material to the decision.” *Facebook, Inc. v. Sound View Innovations, LLC*, IPR2017-01005, Paper No. 13 at 6 (PTAB Sept. 1, 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). For purposes of the arguments set forth in this Preliminary Response, Patent Owner applies the plain and ordinary meaning of each claim limitation which is addressed.

Petitioner alleges it has “not identified any claim terms that need construction in order to address the issues raised by this petition.” Pet., 9. Generac, however, previously argued that the term “desired pressure” was indefinite in the co-pending parallel litigation.

Although Patent Owner disputes that the identified term is indefinite, Petitioner did not address this discrepancy in the Petition. Pet., 9. Specifically,

Petitioner failed to explain how the term “desired pressure” when “read in light of the specification delineating the patent, and the prosecution history” is both (1) sufficiently definite so as to inform Petitioner’s invalidity challenges raised in the Petition and (2) “fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901, 134 S. Ct. 2120, 2124 (2014).

The Petition should be denied on this basis alone. *See, e.g., Cambridge Mobile Telematics, Inc. v. Sfara, Inc.*, IPR2024-00952, Paper 12 (PTAB Dec. 13, 2024) (informative) (declining to institute where Petitioner (1) alleged certain terms were indefinite in parallel district court litigation, and (2) failed to “explain[] why the plain and ordinary meaning of the [challenged] terms should apply in this proceeding (why the inconsistent positions are warranted) or set forth an alternative claim construction”) (citing Consolidated Trial Practice Guide at 45).

V. LIQUIFIED PETROLEUM GAS

Liquified petroleum gas is commonly referred to as “LPG” or “propane.” EX1001, 1:51-54. Propane “is derived from the refining of oil and gas and is compressible to a liquid form for storage.” *Id.*, *see also* EX2080 (U.S. Patent Pub. No. 2012/0104008), ¶[0003]. The terms “liquid propane” and “liquid LPG” are commonly used to describe LPG when present in a liquid state. EX2078 (Singhose

Decl.), ¶¶55-56. Conversely, the terms “propane vapor” and “gaseous LPG” are commonly used to describe LPG in a gaseous state. *Id.*, ¶57.

Prior to the earliest priority date of the ’120 Patent, the distinctions between gaseous and liquid LPG were well known in the art. For example, the “Propane 101” website pre-dates the ’120 Patent. EX2081.A (“Designed by propane dealers so that current and potential users of propane gas may better understand[] what propane is and what it does. Through our experience and knowledge, we aspire to improve the relationship between LP Gas marketers and consumers by expanding awareness of not only propane as a fuel but also the activities of gas marketers in the propane gas industry.”); *see also* EX2078 (Singhose Decl.), ¶¶58-59.

“Both liquid propane and vapor are usable but cannot be used interchangeably. *In other words, a propane system designed to use vapor can’t utilize propane in its liquid form and vice-versa.* Additionally, the characteristics of propane liquid and propane vapor are so different that the primary properties [a POSITA is] concerned with are as different as night and day.” EX2081.B (emphasis added); *see also* EX2078 (Singhose Decl.), ¶60.

LPG “exists in a gaseous state at normal temperature and pressure but can be conveniently stored under pressure in a liquid state.” EX1001, 1:51-54. The propane storage disclosed by the ’120 Patent can be accomplished in large on-site tanks, or in portable cylinders. EX2081.C-D; *see also* EX2078 (Singhose Decl.), ¶61.

In a related proceeding, Petitioner’s expert categorically stated that “A POSA would understand that . . . LPG is a gaseous fuel (LPG is most typically stored in a tank under pressure as a liquid, but is decompressed/vaporized and sent into the engine as a gas).” EX2101, ¶90; *see also* EX1003, ¶48 (referring to “LPG” and “propane” as “a hydrocarbon fuel that is stored under pressure as a liquid, but ultimately fed to the generator engine as a gas comprising mostly propane”); *see also id.*, ¶254 (“Nakafushi’s ‘pressurized fuel source’ is LPG cylinder 16, which supplies gaseous fuel through supply passage 13 to the carburetor 1, and from there to the engine E through intake I.”). While Dr. Morse correctly stated that LPG is typically stored as a liquid and enters the engine as a gas, his categorical assertion that a POSITA would have understood any reference to LPG refers to a gaseous fuel is incorrect, as indicated by the very same references that Petitioner cites in its grounds. *See, e.g.*, Ex. 1012, 65 (separately identifying both a “Liquid Propane Line” and a “Gaseous Propane Line”); EX2078 (Singhose Decl.), ¶¶62-63.

First, Dr. Morse’s assertion that LPG is “sent into the engine as a gas” or “fed to the generator engine as a gas” is irrelevant. All fuel sources (including liquid gasoline, which both Petitioner and Patent Owner agree is a *liquid* fuel) are sent into carbureted engines in a gaseous state. EX2078 (Singhose Decl.), ¶64. Thus, the phase of matter at the time the fuel enters the engine does not indicate “a gaseous fuel supplied from a pressurized fuel source.” *Id.*

Second, as explained herein, numerous LPG applications are optimized to separately run on either liquid or gaseous LPG. As such, categorically referring to LPG as a gaseous fuel source completely discounts numerous liquid LPG applications, and incorrectly characterizes the knowledge of a POSITA. EX2078 (Singhose Decl.), ¶65.

A. Gaseous LPG Systems

LPG cylinders have a wide variety of possible configurations. For example, consumer-focused cylinders are designed to supply propane vapor (gaseous LPG) and are used to fuel consumer products such as gas grills, fire pits, and generators. EX2081.D; *see also* EX2078 (Singhose Decl.), ¶66.

Petitioner’s Parlatore reference provides an example of a system configured to operate using gaseous LPG. EX1010, ¶[0014] (“In one exemplary embodiment and as shown in the exemplary diagram in FIG. 1, a gas, such [as] liquefied petroleum gas or propane, may be supplied to an engine as fuel. The gas may be stored in a bottle or tank, such as LPG tank 102. . . . An exemplary fuel system may use liquefied petroleum gas (LPG or propane) which may be stored in a vapor gaseous state in LPG tank 102. . . .”). EX2078 (Singhose Decl.), ¶67.

Parlatore explicitly recognizes the benefits of propane (as a gaseous vapor), stating that the LPG applications described therein “may be accomplished through the use of *vapor fuel delivery rather than the delivery of liquid propane gas.*”

EX1010, ¶[0025] (emphasis added). Moreover, using propane vapor supplied directly from the source, rather than converting liquid propane to propane vapor, allows the system to avoid “issues pertaining to cooling and freezing, such as those known to affect the conversion of propane from liquid to gas.” *Id.*, ¶[0025]; EX2078 (Singhose Decl.), ¶68.

B. Liquid LPG Systems

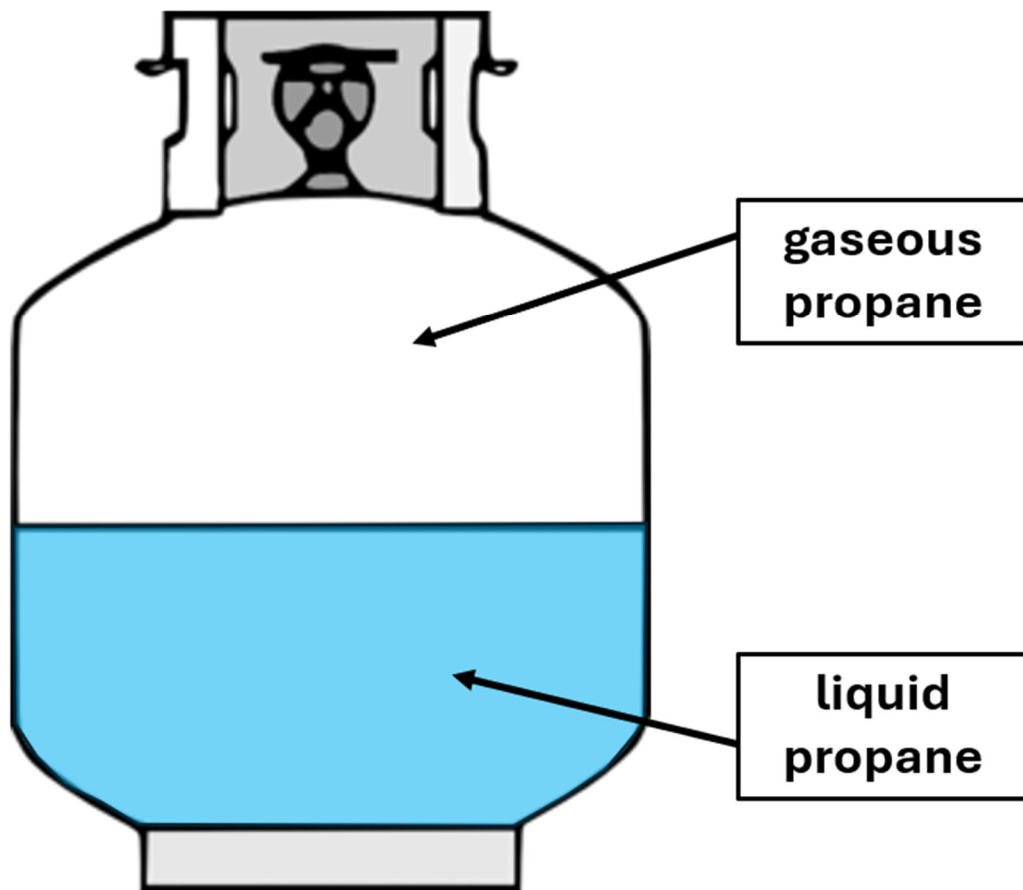
Conversely, commercial or industrial cylinders are optimized to supply liquid LPG to motorized commercial equipment such as forklifts. EX2081.D; *see also* EX2078 (Singhose Decl.), ¶69. For example, “[p]ropane powered forklifts primarily use 33 pound [sic] cylinders as their fuel source and are equipped for liquid service. Because the cylinders are designed for liquid service, they have to be placed properly on the lift truck to operate correctly. Improper cylinder installation can result in loss of power and eventually complete loss of engine functionality.” EX2081.E; *see also* EX2078 (Singhose Decl.), ¶70.

Petitioner’s Bernhardsson reference, which was cited in a related proceeding, provides an example of a system configured to operate using liquid LPG. EX2100, 2:58-68 (“The system 4 for supplying a gaseous fuel, e.g. LPG (Liquefied Petroleum Gas) or natural gas, includes a container 40 in which the gas assumes liquid form under pressure. . . . The container 40 is connected to a vaporizer 43 via a solenoid valve 42 and a pipe 41 . . . and *gas supplied in liquid form to the vaporizer 43 is*

successively transformed into gas.”) (emphasis added). Notably, Bernhardsson *does not* teach that its system is operable on gaseous LPG, and using gaseous LPG in the system disclosed by Bernhardsson would render Bernhardsson’s vaporizer 43 superfluous. EX2078 (Singhose Decl.), ¶71.

C. LPG Storage and Distribution

Regardless of whether a LPG tank or cylinder is designed to supply liquid or gaseous LPG, the storage device contains LPG in both a liquid and gaseous state. EX2078 (Singhose Decl.), ¶73. Liquid propane is more dense than gaseous propane, and therefore sinks to the bottom of the tank, as depicted below:



Schematic Representation of an LPG Tank with Both Gaseous and Liquid Propane.

When the valve at the top of the LPG cylinder is opened, it releases the gaseous propane located near the valve, which (1) causes the pressure within the cylinder to drop, and (2) causes the liquid LPG to boil and evaporate into a gas. EX2078 (Singhose Decl.), ¶74.

“The proper use of a propane cylinder [depends on] the appliance(s) being serviced. Propane appliances and equipment that utilize cylinders . . . are not to be used as a replacement for an empty bulk propane tank. . . . Also, bottles that are used

in vapor service such as a barbeque grill or fish fryer cannot be replaced by a forklift propane cylinder, as LP Gas forklift cylinders use liquid propane for their specific engine fuel applications. . . LP Gas cylinders are not interchangeable with ASME bulk propane tanks or with other types of cylinders that are approved for specific LP Gas applications.” EX2081.F; *see also* EX2078 (Singhose Decl.), ¶75.

Ultimately, “[p]ropane vapor service and propane liquid service are completely different from one another.” EX2081.B; *see also* EX2078 (Singhose Decl.), ¶76. The vast majority of propane applications—such as water heaters, furnaces, gas grills, and the generators at issue in the co-pending disputes between Patent Owner and Petitioner—utilize propane vapor as a gaseous fuel source. EX2081.B; *see also* EX2078 (Singhose Decl.), ¶76. These applications are not configured to operate on liquid LPG. If liquid propane were injected into these systems it could result in fire or similar danger, which is why consumer propane cylinders should always be positioned upright. EX2081.B; *see also* EX2078 (Singhose Decl.), ¶76.

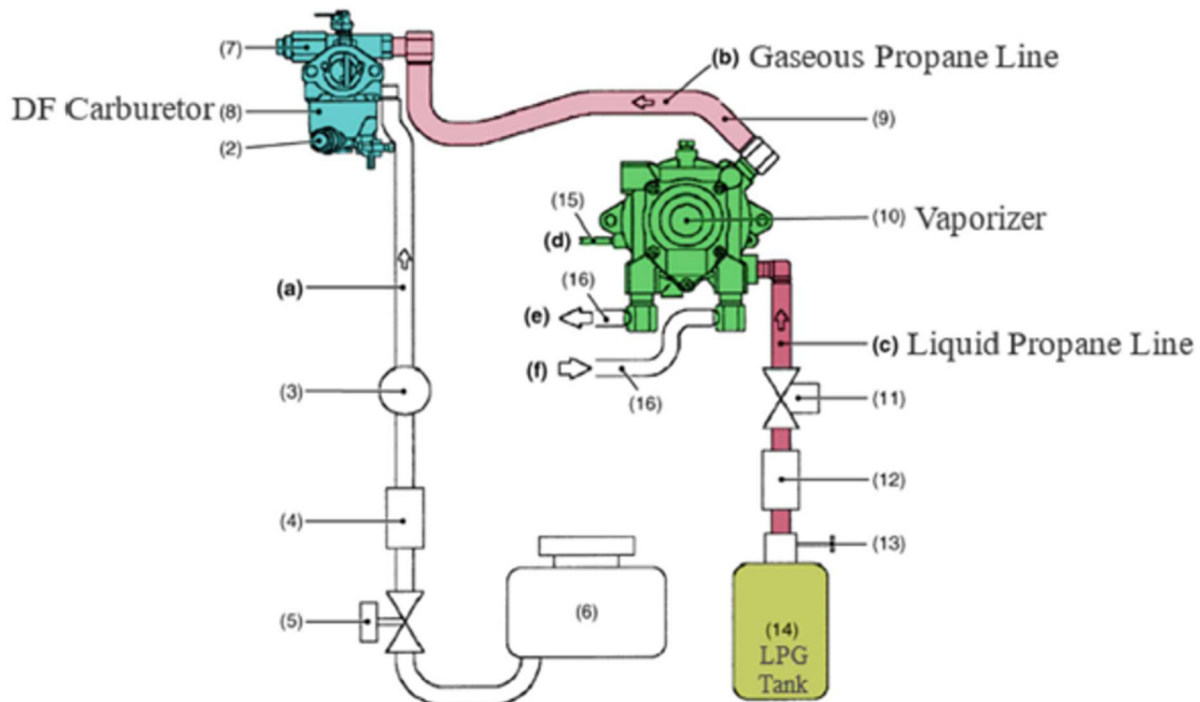
VI. THE PRIOR ART

The Petition asserted invalidity over eight different grounds which include ten combinations of eight different prior art references. Following Patent Owner’s disclaimer of Claims 1-11 and 18-19, only Grounds 5-7 remain. As explained in Section VII, the Petition can be summarily denied in light of deficiencies in

Petitioner's two primary references: Nakafushi and Kubota DF972 Workshop Manual. Additional arguments against institution relate to Petitioner's proposed combination of Nakafushi and Parlatore. Each reference is discussed, in turn, below:

A. Kubota DF972-E2 Workshop Manual ("Workshop Manual")

According to Petitioner, "[t]he Workshop Manual describes the Kubota DF972-E2 engine—a dual-fuel engine with an alternator to function as a generator that runs alternatively off of gasoline or LPG." Pet., 11 (citing Ex. 1012, 65). Without conceding their accuracy, Petitioner's annotations to the Workshop Manual's "Fuel System" diagram are reproduced in part below:



Pet., 12 (citing EX1012, 65); EX2078 (Singhose Decl.), ¶93.

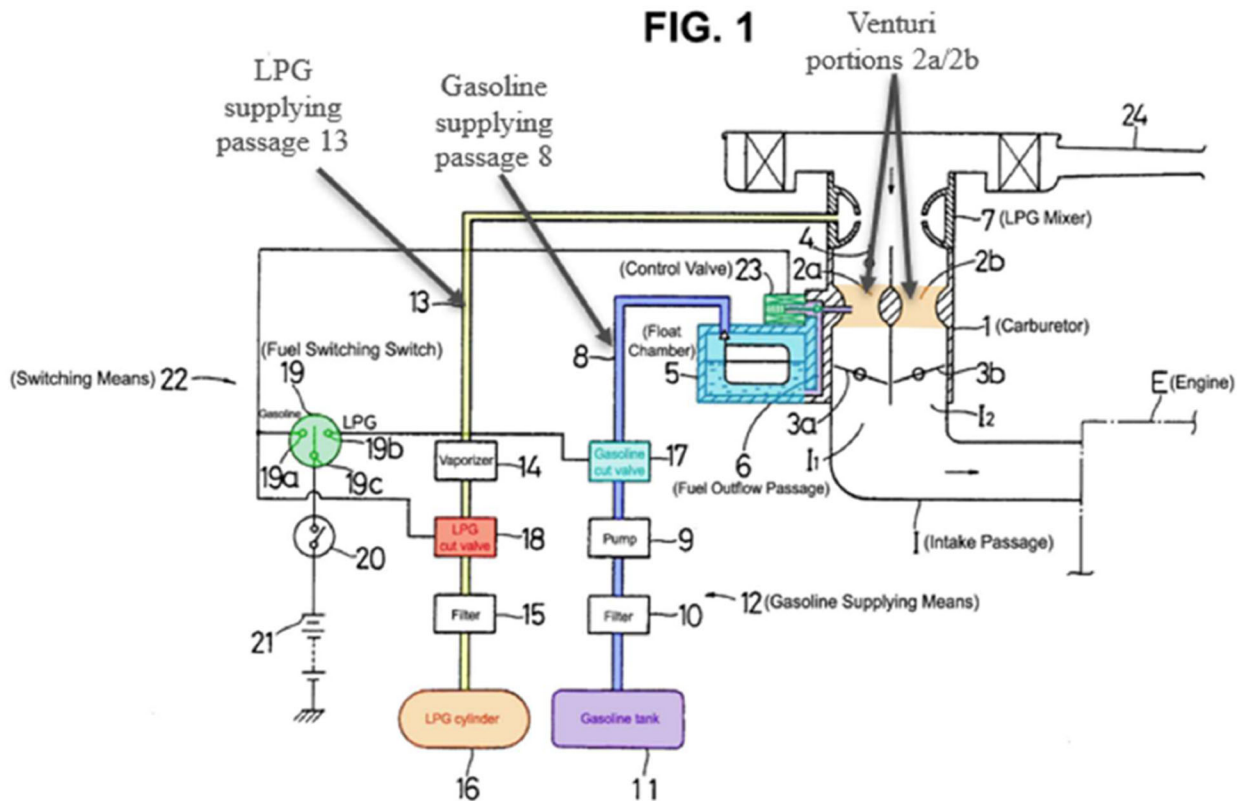
Petitioner identifies the Workshop Manual's "LPG Tank (14)" as the claimed "pressurized fuel source." Petition, 52-53 ("the LPG tank is pressurized") (citing EX1012, 65).

However, the Workshop Manual teaches that "[f]or LPG fuel, the liquid fuel stored in the LPG tank (14) is sent to vaporizer (10) by pressure in the gaseous phase in the tank" and "[t]he liquid fuel is evaporated in vaporizer." EX1012, 65. Specifically, the Workshop Manual explains that a "[v]aporizer is a device which converts the liquid fuel into the gaseous fuel" (*id.*, 69) and that, "[w]hen evaporating by primary chamber of vaporizer[,] liquid LPG needs the evaporation heat." *Id.*, 64. "The coolant of the engine is made to circulate as a heat source to evaporate the LPG." *Id.*, 69. The above-referenced figure shows that liquid propane is transported to the vaporizer (10) via a liquid propane line (c), and also shows that coolant flows to and from the vaporizer (10) via a "Hot Coolant In Line" (f) and a "Hot Coolant Out Line" (e). *Id.*, 65. The Workshop Manual summarizes the purpose of the vaporizer: "This vaporizer installs the water jacket, throws the coolant of engine, heats primary chamber, promotes evaporation, and prevents valves being frozen." EX1012, 64. A POSITA would have understood that the Workshop Manual describes liquid LPG being supplied by LPG tank (14). EX2078 (Singhose Decl.), ¶94.

B. JPS61283734A (“Nakafushi”) (Ex. 1004/1005)

Nakafushi operates on the same principle as the Workshop Manual. Petitioner asserts that “Nakafushi is directed to an engine configured to selectively use gasoline or liquid petroleum gas (“LPG”) as fuel.” Pet., 15 (citing EX1005, ¶[0001]). The system disclosed by Nakafushi implements an “LPG bomb 16” which would have been understood by a POSITA to comprise an on-site LPG tank, rather than a portable LPG cylinder. EX1005, ¶[0012]; *see also* EX2078 (Singhose Decl.), ¶95.² Without conceding their accuracy, Patent Owner reproduces Petitioner’s annotations to Nakafushi’s Figure 1, below:

² Nakafushi refers to numeral 16 as both an “LPG cylinder” and an “LPG bomb.” EX1005, ¶[0012] (“LPG bomb 16 as an LPG supplying means by an LPG supplying passage 13 via a vaporizer 14 for vaporizing LPG”); ¶[0013] (“LPG supplying means (LPG bomb) 16 is operated to switch so as to supply LPG”); *see also* ¶¶[0016], [0021].



Pet., 16 (citing EX1005, Fig. 1).

Of particular relevance, Petitioner identifies Nakafushi’s LPG bomb 16 (or LPG cylinder 16) as the claimed “pressurized fuel source”. Pet., 78 (“Nakafushi’s ‘pressurized fuel source’ is LPG cylinder 16, which supplies gaseous fuel”) (citing EX1005, ¶[0012], Fig. 1; EX1003, ¶254).

However, a POSITA would have understood that LPG bomb 16 supplies *liquid* LPG to vaporizer 14, which then converts the LPG into a gaseous state. Ex. 1005, ¶[0012] (“LPG bomb 16 as an LPG supplying means by an LPG supplying passage 13 via a vaporizer 14 for vaporizing LPG”); *see also* EX2078 (Singhose

Decl.), ¶96. The function of the vaporizer is to convert the liquid LPG into a gaseous state so it may be properly combusted by the engine. The vaporizer 14 is designed to receive the liquid LPG and raise its temperature (heat the liquid) to the boiling point at the delivery pressure. EX2078 (Singhose Decl.), ¶96.

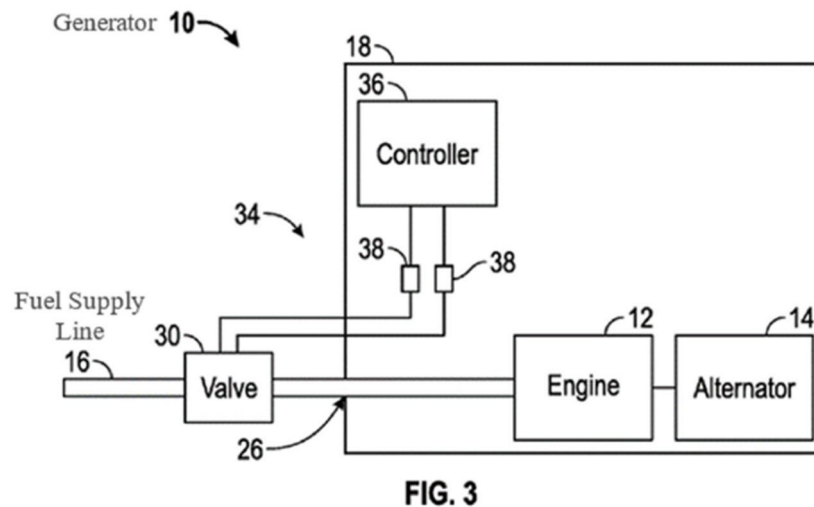
C. U.S. Patent Pub. No. 2011/0100335A1 (“Parlatore”)

Parlatore discloses a fuel delivery system that operates on a gaseous LPG fuel source. Ex. 1010, ¶[0014] (“An exemplary fuel system may use liquified petroleum gas (LPG or Propane) which may be stored in a vapor gaseous state in LPG tank 102”), ¶[0016] (“The primary regulator 106 may step down the pressure of any stored propane vapor energy in the tank 102”), ¶[0025] (“the LPG applications...may further operate independently of the engine’s cooling circuit. This may be accomplished through the use of vapor fuel delivery rather than the delivery of liquid propane gas.”). EX2078 (Singhose Decl.), ¶99.

The primary regulators disclosed in Parlatore are designed to operate in conjunction with, and regulate the pressure of, gaseous LPG. For example, Parlatore teaches that the “primary regulator 106 may step down the pressure of any stored propane vapor energy in tank 102, and may further output this lowered pressure to a secondary regulator 110.” Ex. 1010, ¶[0016]. EX2078 (Singhose Decl.), ¶100.

D. U.S. Patent Pub. No. 2014/0239645 (“Jungmann”)

Petitioner asserts that “Jungmann discloses a generator comprising an alternator driven by an internal combustion engine, with the engine operable on gaseous fuels (propane, natural gas) or liquid fuels (gasoline, diesel), shown in Figure 3.” Pet., 20. Without conceding its accuracy, Petitioner’s annotated Figure 3 is reproduced below:



Jungmann also discloses that:

According to one exemplary embodiment, the engine 12 is an internal combustion engine that consumes a fuel such as propane or natural gas from a fuel supply line 16.

...

In other embodiments, the engine 12 may consume other types of fuel, such as gasoline or diesel fuel.

EX1011, ¶[0015]. Importantly, a POSITA would have understood that Jungmann discloses a generator that operates on a single type of fuel, although the specific type of fuel used by Jungmann's generator can vary from one embodiment to the next. EX2078 (Singhose Decl.), ¶¶101-103.

VII. ARGUMENT

Denial is proper because Petitioner's invalidity arguments are fatally flawed. Neither the Kubota Workshop Manual nor Nakafushi disclose "a gaseous fuel supplied from a pressurized fuel source." Alternatively, institution should be denied because (1) the Workshop Manual does not disclose either (a) the claimed "multi-fuel generator" or (b) the claimed "fuel regulator system," and (2) Nakafushi alone does not disclose either (a) the claimed "multi-fuel generator" or (b) the claimed "fuel regulator system" and Petitioner's proposed combination of Nakafushi, Jungmann, and Parlatore is deficient. Finally, both the art and arguments advanced by Petitioner have already been advanced (and discarded) by the USPTO. Each argument is discussed in turn, below.

A. The Petition does not demonstrate a reasonable likelihood that at least one challenged claim is unpatentable.

Of relevance to Patent Owner's Preliminary Response, the *only* Grounds which address Independent Claim 12 are Ground 5 (alleging anticipation in view of the Kubota Workshop Manual) and Ground 7 (alleging obviousness over Nakafushi

in view of Jungmann and Parlatore).³ The Petition alleges the following grounds of invalidity:

- Ground 5 alleges that Independent Claim 12 is anticipated by the Kubota Workshop Manual; and
- Ground 7 alleges that Independent Claim 12 is obvious over Nakafushi in view of Jungmann and Parlatore.

As such, if Petitioner is unable to show that one or both Grounds 5 and 7 present a reasonable likelihood that Petitioner would prevail with respect to Claim 12, institution should be denied. *See, e.g., Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1576 (Fed. Cir. 1987) (“Because [independent] claim 1 is not invalid, the presence of all its limitations in [dependent] claim 6 preserves the latter’s validity.”).

³ As previously explained, on October 10, 2025, Patent Owner disclaimed Claims 1-11 and 18-19 of the ’120 Patent, pursuant to 35 U.S.C. § 235. EX2102. As such, Grounds 1-4, the portion of Ground 5 addressing Claims 18-19, and Ground 8 are moot.

1. Neither the Workshop Manual nor Nakafushi disclose “a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line.”

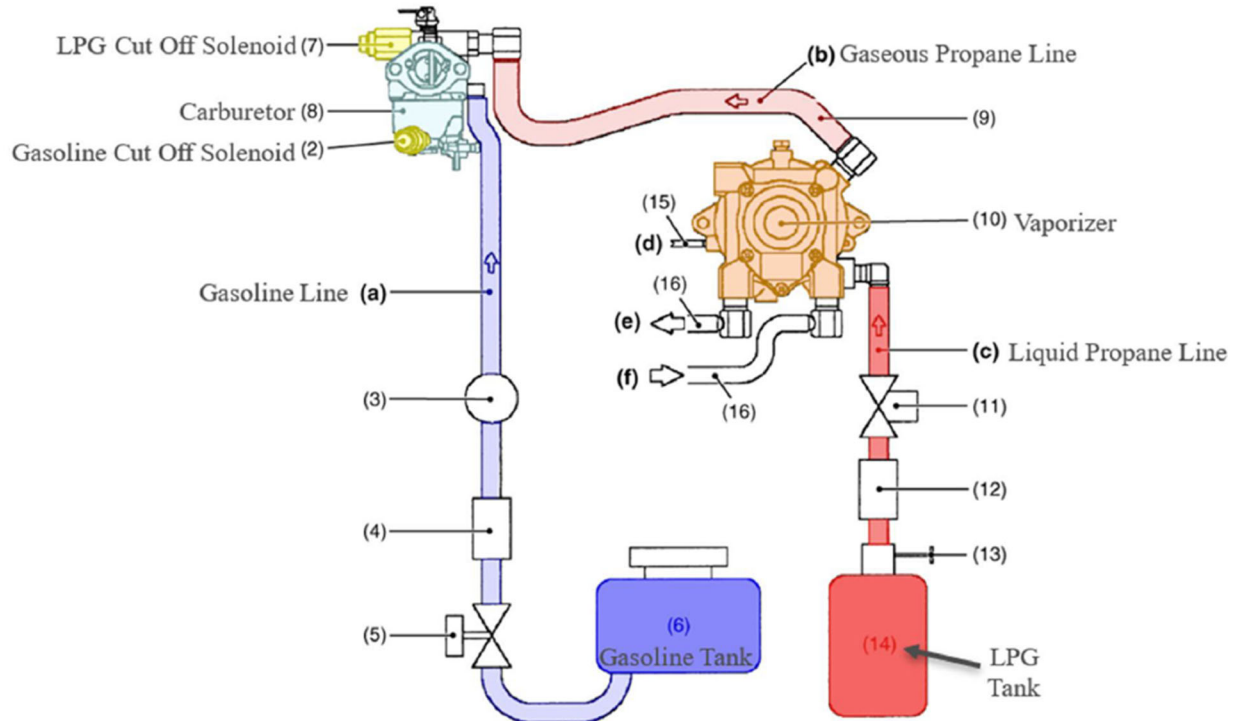
(a) The Workshop Manual does not disclose “a gaseous fuel supplied from” LPG Tank (14) as alleged by the Petition.

Claim 12 of the '120 Patent recites: “a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line.” Importantly, Claim 12 requires gaseous fuel supplied from a pressurized fuel source. The Petition identifies the Workshop Manual’s LPG Tank (14) as the alleged “pressurized fuel source.” Pet., 52-53. EX2078 (Singhose Decl.), ¶¶106-107.

However, it is indisputable that LPG Tank (14) supplies *liquid* LPG, not gaseous LPG. Ex. 1012, 64-65, 69 (“[f]or LPG fuel, ***the liquid fuel stored in the LPG tank (14) is sent to vaporizer (10)*** by pressure in the gaseous phase in the tank” and “[t]he liquid fuel is evaporated in vaporizer”); *see also* Section V, *supra*. As such, the Workshop Manual does not disclose a gaseous fuel *supplied from* a pressurized fuel source because LPG Tank (14) supplies liquid fuel, *not* gaseous fuel. EX2078 (Singhose Decl.), ¶108.

Moreover, the Petition *does not even attempt* to allege that the Workshop Manual discloses “a gaseous fuel supplied from a pressurized fuel source *through a gaseous fuel line*.” Rather, the Petition merely states that “[t]he gasoline and LPG are supplied from tanks through fuel lines.” Pet., 52. But, it is indisputable that the “line” which supplies fuel from LPG Tank (14) is described as “Liquid Propane

Line.” EX1012, 65; EX2078 (Singhose Decl.), ¶¶109-110. Petitioner’s annotations depicting the same are reproduced below:



Pet., 52-53 (citing EX1012, 65; EX1003, ¶310). As such, the Workshop Manual does not disclose a gaseous fuel supplied from a pressurized fuel source *through a gaseous fuel line* because LPG Tank (14) supplies fuel through a “Liquid Propane Line.” EX2078 (Singhose Decl.), ¶112.

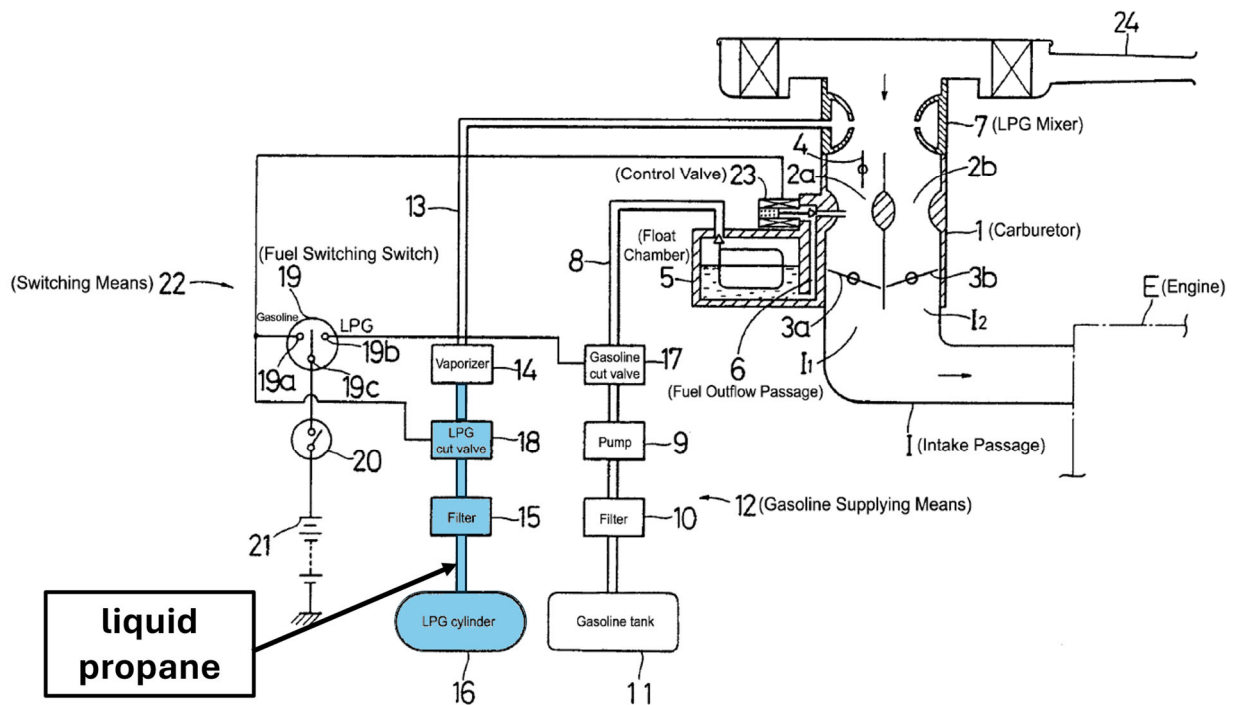
(b) Nakafushi does not disclose “a gaseous fuel supplied from” LPG bomb 16 as alleged by the Petition.

Claim 12 of the ’120 Patent recites: “a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line.” Importantly, Claim 12 requires gaseous fuel *supplied from* a pressurized fuel source. The Petition identifies

Nakafushi's LPG bomb 16 (or LPG cylinder 16) as the claimed "pressurized fuel source." Pet., 78 ("Nakafushi's 'pressurized fuel source' is LPG cylinder 16, which supplies gaseous fuel") (citing Ex. 1005, ¶[0012], Fig. 1; Ex. 1003, ¶254); *see also* EX2078 (Singhose Decl.), ¶¶113-114.

However, just like the Workshop Manual, the system disclosed by Nakafushi supplies *liquid* LPG from LPG cylinder 16 to vaporizer 14. EX1005, ¶[0012] ("LPG bomb 16 as an LPG supplying means by an LPG supplying passage 13 via a vaporizer 14 for vaporizing LPG"); *see also* Section V, *supra*. The function of the vaporizer is to convert the liquid LPG into a gaseous state so it may be properly combusted by the engine. As is depicted below, vaporizer 14 receives liquid LPG and boils it to create gaseous LPG. EX2078 (Singhose Decl.), ¶115.

FIG. 1



As such, Nakafushi does not disclose a gaseous fuel *supplied from* a pressurized fuel source because LPG cylinder 16 supplies liquid fuel, *not* gaseous fuel. EX2078 (Singhose Decl.), ¶115.

2. Patent Owner’s additional arguments preclude institution.

Even if the Board determines that the Kubota Workshop Manual or Nakafushi disclose “a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line,” institution should still be denied. *First*, Ground 5 is deficient because the Workshop Manual does not disclose either (a) the claimed “multi-fuel generator” or (b) the claimed “fuel regulator system.” *Second*, Ground 7 is deficient because Nakafushi alone does not disclose either (a) the claimed “multi-fuel generator” or

(b) the claimed “fuel regulator system” and Petitioner’s proposed combination of Nakafushi, Jungmann, and Parlatore is deficient. Each argument is discussed in turn.

(a) Ground 5 is deficient.

In addition to failing to disclose “a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line,” Petitioner’s Ground 5 is deficient for two reasons. First, the Workshop Manual does not disclose the claimed “multi-fuel generator.” Second, the Workshop Manual does not disclose the claimed “fuel regulator system.” Either argument (standing alone) is fatal to Petitioner’s Ground 5.

(1) The Workshop Manual does not disclose the claimed “multi-fuel generator.”

Claim 12 of the ’120 Patent recites: “A multi-fuel generator and fuel delivery system comprising...” Ground 5 is deficient at least because the Kubota Workshop Manual does not disclose the “multi-fuel generator” recited in the preamble of Claim 12.

As an initial matter, the preamble of Claim 12 is limiting, at least with respect to the “multi-fuel generator” element. “[T]he preamble constitutes a limitation when the claim(s) depend on it for antecedent basis.” *In re Fought*, 941 F.3d 1175, 1178 (Fed. Cir. 2019) (citing *C.W. Zumbiel Co., Inc. v. Kappos*, 702 F.3d 1371, 1385 (Fed. Cir. 2012); *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002)); *see also Bell Commc’ns Research, Inc. v. Vitalink Commc’ns*

Corp., 55 F.3d 615, 620-21 (Fed. Cir. 1995); *Electro Sci. Indus., Inc. v. Dynamic Details, Inc.*, 307 F.3d 1343, 1348 (Fed. Cir. 2002); *Pacing Techs., LLC v. Garmin Int’l, Inc.*, 778 F.3d 1021, 1024 (Fed. Cir. 2015). Specifically, the preamble of Claim 12 provides antecedent basis support for the term “generator” in Claims 14 and 16. *See, e.g.*, EX1001, Cl. 14 (“wherein the electro-mechanical valve system is configured to switch operation of *the generator* from multiple fuel sources while the generator is running”); Cl. 16 (“wherein the pressurized fuel source comprises a pressurized fuel container located off-board *the generator* having a regulator mounting device to secure at least the secondary pressure regulator thereto”).

The ’120 Patent provides additional guidance regarding the claimed multi-fuel generator: “Dual fuel generator 30 includes *a dual fuel internal combustion engine 34* within housing 36 at one end 38, operatively connected to *an alternator 40* also enclosed in housing 36 at another end 42 by conventional means.” EX1001, 3:27-31 (emphasis added). “In addition, embodiments of the invention contemplate tri-fuel, quad-fuel, and other multi-fuel arrangements.” *Id.*, 3:46-48; *see also id.* at Claim 12 (“A multi-fuel generator ... comprising: a multi-fuel internal combustion engine ... [and] an alternator.”).

As disclosed and claimed by the ’120 Patent, a POSITA would have understood that Claim 12 recites and distinctly claims (1) a multi-fuel generator, (2) an internal combustion engine, and (3) an alternator. Accordingly, the Petition

alleges that the “Workshop Manual discloses a multi-fuel internal combustion engine” (Pet., 51), and “an alternator driven by the engine.” Pet., 53. The Petition does not, however, even attempt to allege that Kubota discloses a distinct multi-fuel generator. Instead, the Petition points to the *exact same alternator* that it identifies for Claim Element 12.2, and also argues that it is the claimed “multi-fuel generator.”

But, “where a claim lists elements separately, the clear implication of the claim language is that those elements are distinct components of the patented invention.” *Regeneron Pharm., Inc. v. Mylan Pharm. Inc.*, 130 F.4th 1372, 1379 (Fed. Cir. 2025) (citing *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010)); *see also Kyocera Senco Indus. Tools Inc. v. Int’l Trade Comm’n*, 22 F.4th 1369, 1382 (Fed. Cir. 2022) (“The asserted claims list those elements separately” and “there is, therefore, a presumption that those components are distinct.”); *Schindler Elevator Corp. v. Otis Elevator Co.*, 593 F.3d 1275, 1282 (Fed. Cir. 2010) (explaining that “the term ‘information transmitter’ itself suggests that the transmitter is a thing, separate and apart from an ‘elevator user’”).⁴

⁴ Although “that presumption may always be rebutted in the context of a particular patent,” Petitioner has made no attempt to allege or otherwise explain that it should not apply here. *Regeneron Pharm., Inc. v. Mylan Pharm. Inc.*, 130 F.4th 1372, 1379

Thus, even accepting Petitioner’s interpretation of the Workshop Manual is correct, the Workshop Manual at most discloses an engine and an alternator, but *does not* disclose the claimed generator. By interpreting the claimed “generator” and “alternator” as identical structures, Petitioners inherently concede that the Workshop Manual does not disclose a distinct generator, as claimed by the ’120 Patent.

Moreover, the ’120 Patent describes generators as devices that may operate on multiple fuels and “are frequently used when power outages in the utility grid result from severe weather.” EX1001, 1:26-41. As described with respect to the embodiment shown in Figure 1, a dual fuel generator 30 includes a dual fuel internal combustion engine 34 operatively connected to an alternator 40, which is what produces the power for a user. *Id.*, 3:25:32, Fig. 1. A POSITA reading Claim 12 would have recognized that it is the alternator that makes the claimed multi-fuel generator a generator of electricity.

The Workshop Manual does not disclose such an alternator. In contrast, the alternator described in the Workshop Manual is merely for charging its 12V starting battery during engine operation. EX1012, 51. A POSITA would have readily

n.5 (Fed. Cir. 2025) (citing *Google LLC v. Ecofactor, Inc.*, 92 F.4th 1049, 1058 (Fed. Cir. 2024)). As such, that argument is waived. *Intelligent Bio-Systems, Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016).

recognized that an alternator configured to charge a 12V battery is not a generator alternator that provides power to a consumer to, for example, compensate for a lack of power from the utility grid during a severe weather outage. Thus, a POSITA would not have considered the alternator disclosed by the Workshop Manual to be the "multi-fuel generator" claimed by Claim 12 of the '120 Patent.

(2) The Workshop Manual does not disclose the claimed "fuel regulator system."

Claim 12 of the '120 Patent requires, among other things, a "fuel regulator system" comprising both (1) "a primary pressure regulator ... to regulate fuel supplied from the pressurized fuel source to a reduced pressure," and (2) "a secondary pressure regulator ... to regulate fuel supplied from the primary pressure regulator to a desired pressure." The '120 Patent provides further guidance regarding a POSITA's understanding of what it means to "regulate" pressure, stating: "Fuel regulator system 56 includes one or more pressure regulators that *reduce and control* the pressure of the fuel from pressurized fuel container 50 and delivers fuel at a desired pressure for operation of the engine." EX1001, 3:66-4:3; *see also* EX2078 (Singhose Decl.), ¶83.

The Petition asserts that a dual fuel engine disclosed by the Workshop Manual—the DF972-E2 engine—allegedly anticipates Claim 12 of the '120 Patent. Pet., 11 ("The Workshop Manual describes the Kubota DF972-E2 engine"); *id.*, 11-

13 (depicting the DF972 liquid fuel supply mechanism and the DF972 gaseous fuel supply mechanism); *id.*, 51 (alleging that the “Workshop Manual discloses a generator, powered by operation of the DF-972 engine”).

According to Petitioner, the Workshop Manual’s “vaporizer *aligns* with the ‘dual stage regulator’ disclosed in the ’120 Patent as an exemplary ‘fuel regulator system.’” Pet., 54 (citing EX1001, 4:40-61). Specifically, Petitioner alleges that the Workshop Manual “discloses a primary pressure regulator (i.e. the ‘Primary Chamber’ within the vaporizer 10)” and “a secondary pressure regulator (i.e. the ‘Secondary Chamber’ of the vaporizer).” Pet., 56-57. Petitioner’s unsupported attempt to implicitly construe the term “regulator” to encompass a vaporizer—an entirely different structure—fails for several reasons.

First, the Workshop Manual actually discloses a “regulator” in a different embodiment. The DG972-E2 engine is a natural gas engine designed to run on a gaseous fuel source, and thus includes a regulator, which—consistent with the ’120 Patent—“is equipment that regulates the fuel pressure supplied to the gas mixer to be constant.” EX1012, 72.⁵ Thus, if the Workshop Manual had intended to convey

⁵ Petitioner does not rely on the DG972-E2 natural gas engine (or its regulator) as part of its anticipation challenge. EX1012, 9; *BlephEx, LLC v. Myco Indus.*, 24 F.4th

that the DF972-E2 dual-fuel engine included a regulator (as opposed to a vaporizer), it would have explicitly done so.

Second, a POSITA would have understood that the “Primary Chamber” and “Secondary Chamber” of the Workshop Manual’s vaporizer are not regulators for the simple reason that they *do not regulate pressure*. Specifically, the Workshop Manual describes the primary and secondary chambers as follows:

Primary Chamber: The liquid fuel is decompressed (the first decompression) and it is evaporated.

Secondary Chamber: The fuel which flows in is decompressed from the primary chamber to the vicinity of the atmospheric pressure further (the secondary decompression).

EX1012, 69.

At most, the Workshop Manual discloses that the primary and secondary chambers “decompress” (or reduce the pressure) of the fuel. Under Petitioner’s apparent construction of the term “regulator,” it appears that any structure which

1391, 1400 (Fed. Cir. 2022) (“It is not enough that the prior art reference includes multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention to show anticipation.”) (cleaned up).

reduces the pressure of a fuel source is a “regulator.”⁶ However, as explained above, a POSITA would have understood that a regulator both reduces *and controls* the pressure of the fuel. EX1001, 3:66-4:3; *see also* EX2078 (Singhose Decl.), ¶83. Because the primary and secondary chambers of the Workshop Manual’s vaporizer do not include mechanisms for *controlling* the pressure of the fuel, a POSITA would not have understood them to comprise the claimed “regulator.” *Compare* EX1012, 72 (“The regulator is equipment that regulates the fuel pressure supplied to the gas mixer to be constant.”) *with id.*, 69 (“Vaporizer is a device which converts the liquid fuel into the gaseous fuel.”).

Third, a POSITA would have understood that the Workshop Manual’s “Secondary Chamber” is not the claimed “secondary pressure regulator” because the “Secondary Chamber” merely decompresses gaseous fuel “to the vicinity of the atmospheric pressure,” while Claim 12 specifically requires that the secondary pressure regulator “regulate fuel supplied from the primary pressure regulator to a

⁶ Petitioner’s approach cannot be correct. Opening or puncturing a pressurized fuel source would necessarily “decompress” and reduce the pressure within. And yet, no reasonable person would consider a punctured fuel tank to comprise a “regulator.”

desired pressure.” EX1012, 69; *see also* EX1001, Cl. 12.⁷ A POSITA would not have understood decompression “to the vicinity of the atmospheric pressure” to be the same as “regulat[ing] fuel ... to a desired pressure” at least because (1) “the *vicinity* of the atmospheric pressure” does not suggest a specific, desired pressure is achieved, (2) Kubota Workshop’s “Secondary Chamber” is limited to atmospheric pressure, and cannot achieve any other desired pressure, and (3) atmospheric pressure is variable (for example by elevation or temperature) leading to inconsistent results depending on the location of the generator in question.

For each of the reasons explained above, the Workshop Manual does not disclose the claimed “fuel regulator system.”

(b) Ground 7 is deficient.

In addition to failing to disclose “a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line,” Petitioner’s Ground 7 is deficient for two reasons. First, Nakafushi alone does not disclose the claimed “multi-fuel generator,” and Petitioner’s proposed combination of Nakafushi and Jungmann is deficient.

⁷ Perhaps unsurprisingly, Petitioner glosses over the “desired pressure” requirement, given its contradictory assertion in district court litigation that this term is indefinite. *See* § IV, *supra*. Petitioner fails to explain how this requirement is disclosed by the Workshop Manual.

Second, Nakafushi alone does not disclose the claimed “fuel regulator system,” and Petitioner’s proposed combination of Nakafushi and Parlatore is deficient. Either argument (standing alone) is fatal to Petitioner’s Ground 7.

(1) Petitioner’s reliance on Jungmann is deficient.

Claim 12 of the ’120 Patent recites: “A multi-fuel generator and fuel delivery system comprising...” As discussed above, the preamble of Claim 12 is limiting, at least with respect to the “multi-fuel generator” element. *See* § VII.A.2(a)(1), *supra*. The Petition does not allege that Nakafushi discloses a generator. Rather, Petitioner alleges that a POSITA “would have found it obvious to use Nakafushi’s engine in a generator” based on the teachings of Jungmann. Pet., 77 (citing EX1003, ¶¶236-251).

(a) The Petition does not articulate sufficient motivation to “use Nakafushi’s engine in a generator.”

The Petition does not, however, identify any characteristics of Nakafushi’s engine which would have rendered it suitable for use in a generator, nor does it point to any teachings of Jungmann which suggest that such a combination is appropriate. Pet., 77. Rather, the Petition’s alleged “motivation to combine” consists solely of the conclusory sentence that a POSITA “would have found it obvious to use Nakafushi’s engine in a generator.” Pet., 77. But, “conclusory statements alone are insufficient

and, instead, the finding must be supported by a reasoned explanation.” *In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (cleaned up).

Petitioner’s conclusory motivation to combine rests on two bases, both of which are legally improper. *First*, Petitioner improperly incorporates *sixteen paragraphs* of an expert declaration (covering five pages) by reference. Pet., 77 (citing EX1003, ¶¶236-251). “Arguments must not be incorporated by reference from one document into another document.” 37 C.F.R. § 42.6(a)(3); *see also* Consolidated Trial Practice Guide at 35-36 (“parties that incorporate expert testimony by reference in their petitions, motions, or replies without providing explanation of such testimony risk having the testimony not considered by the Board”) (citing *Cisco Systems, Inc. v. C-Cation Techs., LLC*, Case IPR2014-00454 (PTAB Aug. 29, 2014) (Paper 12) (informative)); *see also Gen. Access Sols., Ltd. v. Sprint Spectrum L.P.*, 811 F. App’x 654, 657 (Fed. Cir. 2020) (“Otherwise, the Board would be forced to ‘play archeologist with the record’ and search for arguments that might have [been] made outside of the parties’ briefing.”).⁸

⁸ As further evidence that Petitioner is asking the Board “to play archeologist with the record,” it is unclear whether the cited portions of Dr. Morse’s declaration are intended to support Petitioner’s conclusion that (1) it would have been “obvious to

Second, Petitioner asserts the proposed motivation is supported by “the same reasons explained above with respect to using Imamura’s engine in a generator.” Pet., 77 (citing *id.*, §VII.D.1.a (pp. 42-44)). Here, Petitioner attempts to incorporate motivation to combine arguments related to *a different reference*, which is also improper. *Google LLC v. Sonos, Inc.*, No. 2023-1259, 2024 U.S. App. LEXIS 12394, at *5 (Fed. Cir. May 23, 2024) (“generic or conclusory analysis is insufficient when it bears no relation to any specific combination of prior art elements *from specific references* and doesn’t explain why a skilled artisan would have combined them in the way the claimed invention does.”) (cleaned up) (emphasis added).⁹

Moreover, even if the Board considers Petitioner’s alleged “motivation” to install the Nakafushi engine—which requires liquid propane fed through a _____ use Nakafushi’s engine in a generator” or (2) there is sufficient motivation to combine and a reasonable expectation of success. However, it is indisputable that the arguments contained within Dr. Morse’s declaration *are not found in the Petition*. Pet., 77.

⁹ Petitioner’s improper incorporation by reference and reliance on arguments regarding *different references* is particularly egregious where proper explanation of Petitioner’s alleged positions would result in violation of Petitioner’s word count. 37 C.F.R. § 42.24(a); *see also* Pet., 108.

vaporizer—into a generator, Petitioner’s alleged “motivation” is replete with technical deficiencies. For example, Petitioner’s expert (Dr. Morse) alleges that a POSITA “would understand that using an internal combustion engine, such as that disclosed by Nakafushi, to power a generator (as shown in Jungmann offers various advantages,” including that “internal combustion engines are comparatively compact and lightweight for the power they are able to deliver, making them especially ideal for portable applications, such as portable generators.” EX1003, ¶¶242-43. Importantly, Dr. Morse’s declaration asserts that “internal combustion engines” generally are “compact and lightweight” but does not provide any analysis of the specific engine disclosed by Nakafushi. *Id.*

In fact, the engine disclosed by Nakafushi is not “compact and lightweight,” but rather large and complex. EX2078 (Singhose Decl.), ¶98. For example, it contains multiple additional components, including a vaporizer, various cut valves, and an LPG mixer which—when incorporated into a generator as disclosed by Jungmann—result in a less compact and heavier system. EX1005, Fig. 1; ¶¶[0011]-[0013]; *see also* EX2078 (Singhose Decl.), ¶98. Incorporation of Nakafushi into a generator, such as the generator disclosed and claimed by the ’120 Patent, is contrary to Dr. Morse’s suggested motivation.

As another example, Dr. Morse argues that “internal combustion engines are easy to use; starting an internal combustion engine is straightforward, often requiring

just a pull-start or a key ignition” and that because a POSITA “would have been aware of all of these benefits at the time of the invention, it would have been obvious to a [POSITA] to use the internal combustion engine disclosed in Nakafushi to power a generator, as shown in Jungmann.” EX1003, ¶¶247-48. But again, Dr. Morse does not allege that the engine disclosed by Nakafushi is “easy to use” or that starting the engine disclosed by Nakafushi “is straightforward” and “requir[es] just a pull-start or key ignition.” Instead, his comments are directed toward internal combustion engines generally, without any allegation that those same features are equally applicable to Nakafushi. *See also* EX1003, ¶¶244-46 (referring to “internal combustion engines” generally). In fact, Nakafushi’s complex, dual-fuel engine would have made the Jungmann generator more difficult to use. EX1005, Fig. 1; ¶¶[0011]-[0013]; *see also* EX2078 (Singhose Decl.), ¶98. Again, incorporation of the liquid-fuel sourced Nakafushi engine into a generator is contrary to Dr. Morse’s suggested motivation.

Simply put, the Petition fails to articulate a motivation to use Nakafushi’s engine in a generator (such as the one disclosed by Jungmann) because (1) the Petition contains no analysis, but instead improperly incorporates large swathes of Dr. Morse’s declaration, (2) the only argument in the Petition relates to a different reference (Imamura), (3) Dr. Morse’s alleged motivation relates to “internal

combustion engines” generally, not the specific engine disclosed by Nakafushi, and
(4) Dr. Morse’s alleged motivation is factually incorrect.

(b) The Petition does not articulate a reasonable expectation of success to “use Nakafushi’s engine in a generator.”

Petitioner’s allegation that a POSITA would have “had a reasonable expectation of success” “to use Nakafushi’s engine in a generator” fails for similar reasons. Again, Petitioner improperly incorporates large swathes of Dr. Morse’s declaration by reference. Pet., 77 citing (EX1003, ¶¶236-251); *see also* § VII.A.2(b)(1)(a), *supra*. And again, Petitioner improperly relies on evidence related to *different references*. Pet., 77 (referring “to using Imamura’s engine in a generator”); *see also* § VII.A.2(b)(1)(a), *supra*.

Moreover, Dr. Morse’s allegation that a POSITA “would have had a reasonable expectation of success in using Nakafushi’s multi-fuel engine in a generator” is also deficient on the merits. EX1003, ¶¶250-51. According to Dr. Morse, “[u]sing Nakafushi’s engine in a generator would be implemented in the same way as the engine is used in a generator as disclosed in Jungmann.” *Id.* This is false. Specifically, the implementation of a dual-fuel engine is *not* demonstrated by Jungmann because Jungmann’s generator does not have the ability to switch between different fuel types. EX1011, ¶[0015]; *see also* EX2078 (Singhose Decl.), ¶¶102-103. Rather, Jungmann’s generator discloses using one type of fuel at a time,

but includes the option to change fuel type from one setup to the next. EX1011, ¶[0015]; *see also* EX2078 (Singhose Decl.), ¶¶102-103. Simply put, Petitioner does not cite *anything* from Nakafushi, Jungmann, or Dr. Morse which discloses how a POSITA would implement a dual-fuel engine operable on liquid LPG (as disclosed by Nakafushi) into a generator (as disclosed by Jungmann).

Again, the Petition fails to articulate a reasonable expectation of success to use Nakafushi's engine in a generator (such as the one disclosed by Jungmann) because (1) the Petition contains no analysis, but instead improperly incorporates large swathes of Dr. Morse's declaration, (2) the only argument in the Petition relates to a different reference (Imamura), and (3) Dr. Morse's arguments regarding a reasonable expectation of success are factually incorrect.

(2) Petitioner's reliance on Parlatore is deficient.

Petitioner asserts that "Nakafushi's vaporizer 14 constitutes the claimed 'fuel regulator system'" but relies entirely on Parlatore for disclosure of the claimed "primary pressure regulator" and "secondary pressure regulator." *Compare* Pet., 79-83 *with id.*, 83 ("Parlatore discloses a primary regulator 304") *and id.*, 85 ("Parlatore discloses secondary pressure regulator 308").

(a) The Petition does not articulate sufficient motivation to "utilize Parlatore's regulator system with Nakafushi's engine."

Petitioner's alleged motivation to "utilize Parlatore's regulator system with Nakafushi's engine" is clearly and improperly grounded in hindsight. Pet., 82-83. In fact, Petitioner's entire motivation is grounded in a hypothetical that Petitioner concedes it does not know the answer to. The *only* reasonable explanation for Petitioner's manufactured "motivation to combine" is to improperly reconstruct the challenged claims using the '120 Patent "as a roadmap to reconstruct the claimed invention using disparate elements from the prior art," which the Federal Circuit has repeatedly warned is "the impermissible *ex post* reasoning and hindsight bias that *KSR* warned against." *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1361 (Fed. Cir. 2019).

According to Petitioner, "Nakafushi discloses vaporizer 14 along the LPG supply line." Pet., 82. And, Petitioner asserts that "if Nakafushi's vaporizer had only a single stage," then a POSITA "would have been motivated to utilize Parlatore's regulator system to avoid regulator freezing and/or the need for a heat source." *Id.*, 82-83. But, Petitioner concedes that the structure of Nakafushi's vaporizer *is not known*. *Id.*, 80 ("even though Nakafushi's vaporizer is not expressly described"); *see also* EX2078 (Singhose Decl.), ¶¶72, 97, 116-118.

Simply put, Petitioner's alleged motivation to combine Nakafushi and Parlatore is entirely based on a Petitioner's guess as to how Nakafushi's *could* be implemented, with no evidence that the vaporizer is *actually implemented* that way.

If the Nakafushi vaporizer is a dual stage vaporizer (as opposed to the hypothetical single stage vaporizer), Petitioner’s entire motivation to combine analysis falls apart. Given that Petitioner *does not know* how Nakafushi’s vaporizer is constructed, it cannot possibly articulate a rationale for replacing said vaporizer. EX2078 (Singhose Decl.), ¶119.

(b) The Petition does not articulate a reasonable expectation of success to “replac[e] Nakafushi’s vaporizer 14 with Parlatore’s first and second regulators, or its dual-stage regulator, to achieve the same function of vaporizing the LPG and providing it to the engine at the desired pressure.”

Petitioner’s argument regarding a reasonable expectation of success is deficient for the same reasons. According to Petitioner, the proposed combination “would have involved nothing more than replacing Nakafushi’s vaporizer 14 with Parlatore’s first and second regulators, or its dual-stage regulator, to achieve the same function of vaporizing the LPG and providing it to the engine at the desired pressure.” Pet., 83 (citing EX1003, ¶273).¹⁰

Petitioner, however, concedes that it *does not know* how Nakafushi’s vaporizer is structured, including “if Nakafushi’s vaporizer had only a single stage.”

¹⁰ Dr. Morse’s declaration repeats Petitioner’s conclusory allegations nearly verbatim and does not provide any additional evidence or argument. EX1003, ¶273.

Pet., 82; *see also id.*, 80 (“even though Nakafushi’s vaporizer is not expressly described”); EX2078 (Singhose Decl.), ¶¶72, 97, 116-118. As such, Petitioner’s allegation that Parlature’s regulators will “achieve the same function” as Nakafushi’s is impossible, given that Petitioner *does not know* the precise bounds of what that function is. EX2078 (Singhose Decl.), ¶120.

Moreover, the example embodiments that are actually described in Parlature require the use of a gaseous fuel source, not a liquid fuel source. For instance, one exemplary embodiment teaches the use of supplying the engine with “a gas, such as liquified petroleum gas or propane.” EX 1010, ¶[10014]. Another exemplary embodiment explicitly instructs the use of “the gaseous form of liquified propane...as a fuel.” *Id.* In still another embodiment, Parlature describes the exemplary fuel system as using “liquified petroleum gas (LPG or propane) which may be stored in a vapor gaseous state in LPG tank 102.” *Id.* In yet another embodiment, Parlature discloses that “[t]he primary regulator 106 may step down the pressure of any stored propane vapor energy in tank 102, and may further output this lowered pressure to a secondary regulator 110.” *Id.*, ¶[0016]. In fact, each and every embodiment expressly described in Parlature teaches the use of a gaseous or vapor form of LPG fuel.

In contrast, Parlatore explicitly states in the Background section that the conversion of liquid propane to a gas requires a significant amount of heat, and is undesirable:

Other attempted solutions, for example the use of liquid propane delivery systems, have not proved successful. In such uses of propane, the vaporization of propane from its liquid state causes a significant amount of heat to be absorbed, ultimately freezing the regulator through which the propane flows from a tank to the engine and rendering the engine inoperable.”

EX1010, ¶[0004].

As discussed above, Claim 12 of the '120 Patent indisputably requires “a gaseous fuel supplied from a pressurized fuel source.” And, “[t]he reasonable-expectation-of-success analysis must be tied to the scope of the claimed invention.” *Teva Pharms. USA, Inc. v. Corcept Therapeutics, Inc.*, 18 F.4th 1377, 1381 (Fed. Cir. 2021). Combining Parlatore, which emphasizes *gaseous* LPG, with Nakafushi would not be successful because Nakafushi requires a *liquid* LPG supply. By failing to account for this distinction, Petitioner’s purported analysis is impermissibly divorced from the scope of the claimed invention.

B. Petitioner’s arguments were previously considered by the Board.

As explained in Patent Owner’s Brief in Support of its Request for Discretionary Denial of Institution (Paper 11), the Workshop Manual describes the

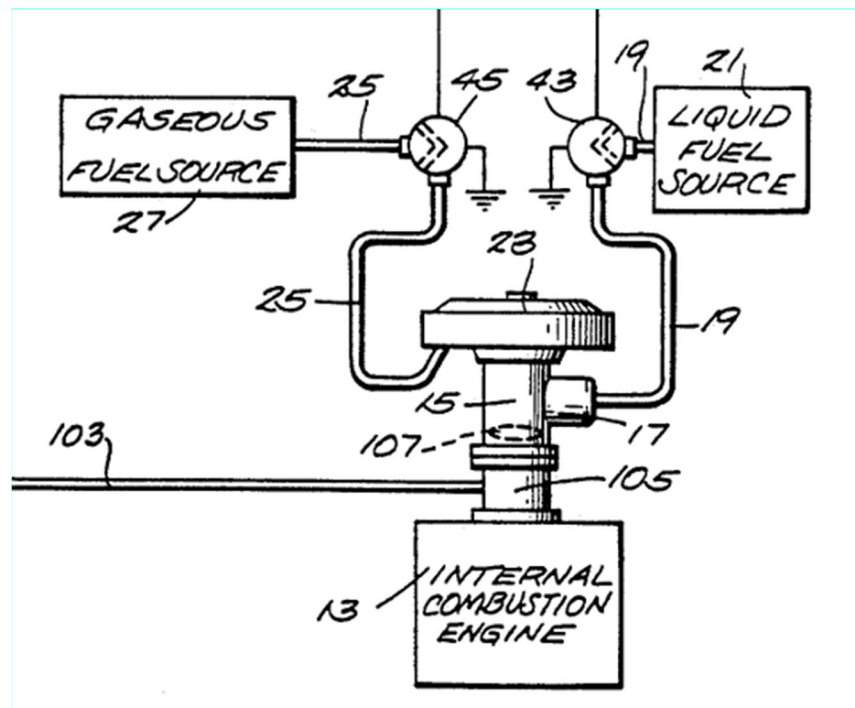
same dual-fuel engine taught by the Kubota Patent (*see* Section II.C.1, *supra*), and Nakafushi is simply cumulative of the Kubota Patent. *See* Paper 11 at § III.A.¹¹

Specifically, during prosecution of the '398 Patent (the grandparent of the '120 Patent at issue in this proceeding), the Examiner rejected Claims 1, 3-4, 12-13, and 35-36 of the pending application as being obvious over the combination of Poehlman (U.S. Patent No. 4,489,699) and the Kubota Patent. EX2053, 4. Notably, the claims at issue explicitly included limitations related to a “gaseous fuel source.” *Id.*, 4-5. However, it is apparent that the Examiner realized the fundamental differences in these technologies and did not assert that the Kubota Patent was an anticipatory reference, as Petitioner attempts to do, or even as a primary reference

¹¹ The Kubota Patent teaches the same system as the Kubota Workshop Manual—the manual simply describes the commercial embodiment of the Kubota Patent (Kubota engine model DF972). Both include a liquid LPG source, an LPG solenoid, an LPG vaporizer, a gasoline source, a gasoline solenoid in the carburetor, and a switching device to choose which fuel source is active. *Compare* EX1012, p. 65 with EX1018, 2:39-3:40. Indeed, that the Kubota Patent and Kubota Workshop Manual describe the same dual-fuel engine is further proven by Kubota’s patent marking. Kubota has marked literature for the Kubota engine model DF972 with that very same Kubota Patent number. EX2044, p. 2.

for any rejection. Instead, the Examiner cited Poehlman as allegedly disclosing the claimed gaseous fuel source and referred to the Kubota Patent merely as a secondary reference. *Id.* Importantly, the Examiner apparently recognized the Kubota Patent did not have a gaseous fuel source.

Unlike the Kubota Patent, the Workshop Manual, and Nakafushi, Poehlman explicitly discloses a gaseous fuel source. *See, e.g.,* Poehlman at Fig. 1 (reproduced below).



The Examiner’s decision to rely on Poehlman for the claimed “gaseous fuel source” constitutes an implicit admission that the Kubota Patent (and therefore the Workshop Manual), does not disclose a gaseous fuel source. For this reason, institution should be denied.

VIII. CONCLUSION

For at least the reasons discussed above, the Petition fails to establish that the Challenged Claims are invalid.

Dated: October 10, 2025

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CERTIFICATE OF SERVICE

In accordance with 37 C.F.R. § 42.6(e), the undersigned certifies that on October 10, 2025, a complete and entire copy of the foregoing Patent Owner's Preliminary Response, including the exhibits relied upon, was served on counsel of record for Petitioner, as follows:

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that the foregoing Patent Owner's Preliminary Response, excluding the portions exempted under 37 C.F.R. § 42.24(b), contains 10,123 words according to Microsoft Word's word count feature.

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