

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PERMIAN GLOBAL INC., AND
MANTICORE FUELS, LLC
Petitioners,

v.

FUEL AUTOMATION STATION, LLC,
Patent Owner.

Case IPR2023-01238

Patent No. 10,974,955

PATENT OWNER'S NOTICE OF APPEAL

Patent Owner Fuel Automation Station, LLC hereby gives notice to the Patent Trial and Appeal Board (“the Board”) and the Director of the U.S. Patent and Trademark Office, pursuant to 35 U.S.C. §§ 141, 142 and 37 C.F.R. §§ 90.2, 90.3, of Patent Owner’s appeal pursuant to 35 U.S.C. § 319 to the United States Court of Appeals for the Federal Circuit from the Final Written Decision entered on February 26, 2025 (Paper 42) (the “Final Written Decision”) (attached hereto as **Exhibit A**).

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Patent Owner further indicates that the issues on appeal include, but are not limited to, the Board’s decision to find unpatentable claims 1-20 of U.S. Patent No. 10,974,955; the Board’s consideration, or lack thereof, of the expert testimony, prior art, and other evidence of record; and the Board’s factual findings, conclusions of law, or other determinations supporting or related to those issues, as well as all other issues decided adversely to Patent Owner in any orders, decisions, rulings, and opinions.

This Notice of Appeal is timely filed as it is being filed not later than 63 days after the February 26, 2025 Final Written Decision. *See* 37 C.F.R. § 90.3(a)(1).

This Notice of Appeal is being filed with the Director by electronic mail to the email address indicated on the United States Patent and Trademark Office’s web page for the Office of the General Counsel, as required by 37 C.F.R. § 90.2(a).

In addition, a copy of this Notice of Appeal and a copy of the Final Written Decision, along with the required docketing fee, is being electronically filed with the

Clerk's Office for the United States Court of Appeals for the Federal Circuit as required by Fed. Cir. R. 15(a)(4) and Fed. Cir. R. 25(b)(1).

Respectfully Submitted,

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CERTIFICATE OF FILING

I certify that on April 30, 2025 this document (Patent Owner's Notice of Appeal and Exhibit A) has been filed as follows:

with the PTAB, electronically through Patent Trial and Appeal Case Tracking System (P-TACTS);

with the Director, by electronic mail to efileSO@uspto.gov, which is the email address indicated on the United States Patent and Trademark Office's web page for the Office of the General Counsel; and

with the Clerk's Office of the United States Court of Appeals for the Federal Circuit, using the Court's CM/ECF filing system, and with the filing fee being paid electronically via pay.gov.

Respectfully Submitted,

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on April 30, 2025, a true and correct copy of the foregoing document was served electronically via e-mail in its entirety on counsel identified below by Petitioner for service at DLPermianIPR@bakerbotts.com.

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EXHIBIT A

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PERMIAN GLOBAL INC., and MANTICORE FUELS, LLC,
Petitioner,

v.

FUEL AUTOMATION STATION, LLC,
Patent Owner.

IPR2023-01238
Patent 10,974,955 B2

Before CARL M. DEFRANCO, RICHARD H. MARSCHALL, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

DOUGAL, *Administrative Patent Judge*.

JUDGMENT
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. *Background and Summary*

Petitioner, Permian Global Inc., and Manticore Fuels, LLC, filed a Petition requesting *inter partes* review of claims 1–20 (the “challenged claims”) of U.S. Patent No. 10,974,955 B2 (Ex. 1001, “the ’955 patent”). Paper 3 (“Pet.”). Patent Owner, Fuel Automation Station, LLC, filed a Preliminary Response.¹ Paper 8 (“Prelim. Resp.”). Applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review of all challenged claims. Paper 11 (“Dec.”).

Patent Owner filed a Response (Paper 15, “PO Resp.”), Petitioner filed a Reply (Paper 27, “Reply”), and Patent Owner filed a Sur-reply (Paper 30, “Sur-reply”).

Patent Owner also filed a Motion to Exclude Evidence (Paper 33), which we address at the end of this Decision.

We have jurisdiction under 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of the challenged claims. Having reviewed the arguments and supporting evidence, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–20 are unpatentable.

B. *Related Matters*

The ’955 patent is involved in *Fuel Automation Station, LLC v. Permian Global, Inc.*, No. 1-22-cv-008001 (WDTX). Pet. 1; Paper 4, 1.

¹ Petitioner also filed a Preliminary Reply (Paper 9) and Patent Owner filed a Preliminary Sur-reply (Paper 10).

C. The '955 Patent

The '955 patent is directed to a mobile distribution station that “serve[s] in ‘hot-refueling’ capacity to distribute fuel to multiple pieces of equipment while the equipment is running, such as fracking equipment at a well site.” Ex. 1001, 2:13–17. The distribution station includes a mobile trailer equipped with pumps, manifolds, and hose reels, with flow passages connected to the manifolds and reels for delivering fuel to the fracking equipment. *Id.* at 2:13–3:28.

D. Illustrative Claim

Of the challenged claims, claims 1, 11, and 19 are independent.

Claim 1 is reproduced below:

1. A distribution station comprising:
 - a container including first and second opposed side walls that join first and second opposed end walls;
 - a pump in the container;
 - first and second manifolds in the container and fluidly connected with the pump;
 - a plurality of reels in the container;
 - a plurality of hoses, each said hose connected with a different one of the reels, wherein a portion of the reels are connected to be fed from the first manifold and another portion of the reels are connected to be fed from the second manifold;
 - a plurality of valves in the container, each said valve situated between one of the first or second manifolds and a respective different one of the reels;
 - a plurality of fluid level sensors, each said fluid level sensor being associated with a different one of the hoses; and
 - a controller configured to individually open and close the valves responsive to the fluid level sensors.

Ex. 1001, 10:12–31.

E. Evidence

Petitioner's grounds of unpatentability rely on the following evidence:

Name	Patent Document	Exhibit
Van Vliet	US 2011/0197988 A1 (Aug. 18, 2011)	1004
Cable	US 3,810,487 (May 14, 1974)	1005
DeFosse	US 8,360,152 B2 (Jan. 29, 2013)	1008

Name	Non-Patent Literature	Exhibit
LCR I	LectroCount LCR 600™ Electronic Register, www.lcmeter.com/en/Literature/Documents/Specifications/ES100-30%20(LCR%20600).pdf (May 21, 2014)	1006
LCR II	Liquid Controls Electronic Registers and Data Management Systems, www.lcmeter.com/en/Literature/Documents/Overviews/E100-10%20Electronics%20Overview.pdf (Oct. 10, 2015)	1007

F. Asserted Grounds

Petitioner asserts the following grounds of unpatentability (Pet. 5–6), supported by the declaration of Dr. Robert Durham (Ex. 1003):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–5, 11, 12	103	Van Vliet, Cable
6–10, 14–20	103	Van Vliet, Cable, LCR I
6–10, 14–20	103	Van Vliet, Cable, LCR II
6–10, 14–20	103	Van Vliet, Cable, LCR I, LCR II
13	103	Van Vliet, Cable, DeFosse
1, 11, 12	102	Van Vliet
1, 11, 12	103	Van Vliet
6–10, 14–20	103	Van Vliet, LCR I
6–10, 14–20	103	Van Vliet, LCR II
6–10, 14–20	103	Van Vliet, LCRI, LCR II
13	103	Van Vliet, DeFosse

II. ANALYSIS

A. Legal Standards

Petitioner bears the burden to demonstrate unpatentability. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A claim is unpatentable as obvious if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a)).² We resolve the question of obviousness based on underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the prior art and the claims; (3) the level of skill in the art; and (4) when in evidence, objective indicia of nonobviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

We apply these principles to the Petition’s challenges.

B. Level of Ordinary Skill in the Art

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of the invention. *Id.* at 13, 17. Petitioner asserts that a person of ordinary skill in the art (“POSA” or “POSITA”) would have had:

a degree in mechanical, electrical, petroleum, or civil engineering and with at least two years’ experience working in a field relating to energy production. This definition is

² Though Petitioner also sets forth a ground under anticipation (35 U.S.C. § 102), for the reasons discussed below, it is unnecessary to address this ground.

approximate, and more education may substitute for industry experience or vice versa.

Pet. 14 (citing Ex. 1003 ¶ 101). At the same time, Petitioner’s declarant asserts that a POSA would have had:

either (1) a Bachelor of Science in Mechanical Engineering, Electrical Engineering, Petroleum Engineering or an equivalent field as well as at least 2 years of academic or industry experience in the oil and gas industry, including well drilling, completion, or production, or (2) at least four years of industry experience in the oil and gas industry including well drilling, completion, or production. This definition is approximate, and more education may substitute for industry experience or vice versa.

Ex. 1003 ¶ 101.

Patent Owner notes the discrepancies between these two levels of skill and argues for that of Petitioner’s declarant. PO Resp. 10–13. Petitioner does not respond to Patent Owner’s arguments. *See generally*, Reply.

We are persuaded, on the present record, that Petitioner’s declarant’s proposal is consistent with the problems and solutions in the ’955 patent and prior art of record. We adopt this definition of the level of skill for the purposes of this Decision.

C. Claim Construction

In *inter partes* review, we construe claims using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b) (2023).

We construe “those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.” *Realtime Data, LLC v. Iancu*,

912 F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). Here, though the parties dispute the construction of certain claim terms (*see* PO Resp. 13–16; Reply 1–4; Sur-reply 1–3), resolution of these disputes is unnecessary to resolve the present controversy.

D. 35 U.S.C. § 103 – Van Vliet, Cable

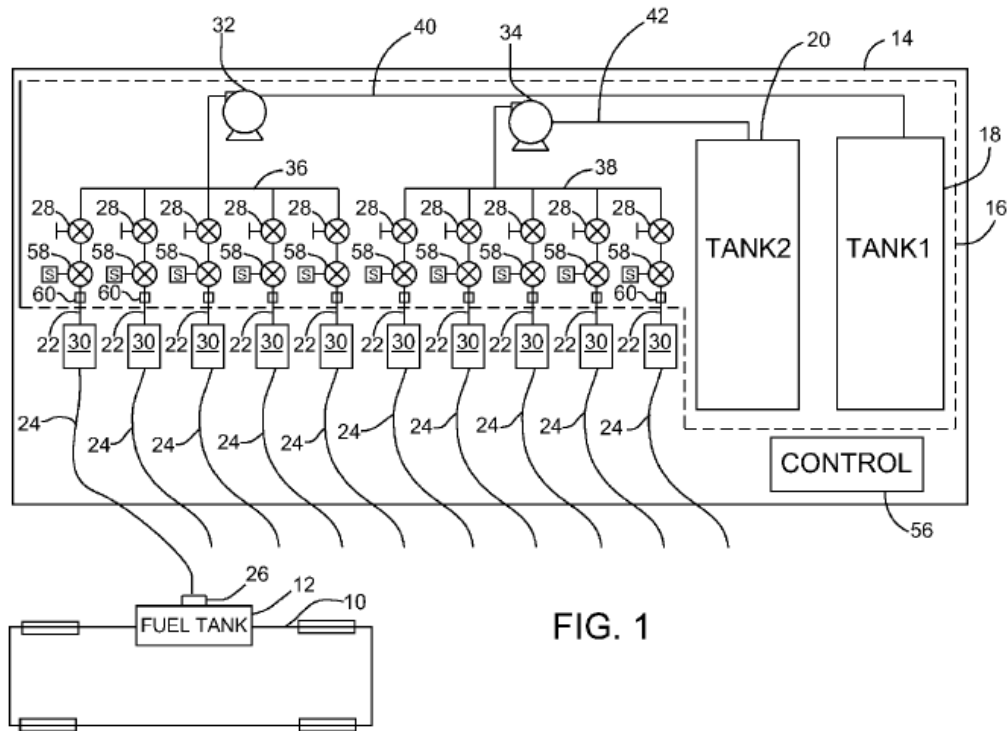
Petitioner challenges claims 1–5, 11, and 12 as obvious over Van Vliet and Cable. Pet. 33–45. Patent Owner’s disagreement primarily focuses on aspects of the combination of Van Vliet and Cable (PO Resp 22–41) and on secondary considerations of non-obviousness (*id.* at 50–55).

For the reasons expressed below, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–5, 11, and 12 are unpatentable.

After summarizing the prior art, we address the arguments specific to Van Vliet and Cable. We then address the evidence and arguments related to secondary considerations.

1. Van Vliet

Van Vliet is titled “Fuel Delivery System and Method,” and is directed to “[a] fuel delivery system” for equipment used in well fracturing operations “for reducing the likelihood that a fuel tank of [such] equipment . . . will run out of fuel.” Ex. 1004, code (54), Abs., ¶ 3. Van Vliet describes a fuel delivery system used to provide fuel to pieces of equipment at a well site, as depicted in Figure 1, reproduced below. *Id.* ¶ 14.



In Figure 1 above, the fuel delivery system (14) has two tanks (18, 20) connected to two pumps (32, 34), which connect to two manifolds (36, 38). *Id.* ¶ 15. The manifolds connect to valves (28, 58) in fluid communication with a plurality of hoses (24). *Id.* Each hose (24) is stored on a reel (30). *Id.*

2. Cable

Cable is titled “Mobile Lubrication Apparatus,” and is directed to a mobile system “which will allow for the quick and easy lubrication of another vehicle,” as well as, the “capability to use the oils stored within the system or provided by the customer.” Ex. 1005, code [54], 1:62–2:2.

Cable describes a rear compartment of the truck including “storage tanks mounted therein” for fluids such as oil, water, and anti-freeze, “pumps mounted atop the tanks,” and “rotatably mounted reels with a hose wrapped around each reel” to convey fluids in the tanks to a vehicle. *Id.* at Abstr. The hose assemblies that include reels reside near the rear of the truck, and an

aisle walkway extends down the length of the rear compartment between the hose assemblies. *Id.* at 2:48–62, Fig. 2.

3. *Analysis of Claims 1 and 11*

Petitioner argues that the combination of Van Vliet and Cable renders obvious independent claim 1. Pet. 22–30. Petitioner relies on this same analysis for arguing that independent claim 11 is unpatentable. *Id.* at 30–33. Patent Owner addresses claims 1 and 11 together (PO Resp. 22–40), and we address claim 1 as representative.

Patent Owner does not address the specific teachings of the references with respect to claims 1 and 11, but attacks the reasoning to combine Van Vliet and Cable. We first address the relied upon teachings, before addressing the reasons to combine.

a) *Van Vliet Applied to Claim 1*

Petitioner relies on Van Vliet for teaching all of the claim limitations, except for the limitation regarding the hose-to-reel fluid connection. *See* Pet. 34–37, 43. Petitioner relies on Van Vliet, primarily as illustrated in Figure 1 (reproduced on the prior page), for teaching the below limitations of claim 1. *Id.* at 22–30.

Claim 1 requires, *inter alia*:

1. A distribution station comprising:
 - a container including first and second opposed side walls that join first and second opposed end walls;
 - a pump in the container;
 - first and second manifolds in the container and fluidly connected with the pump;
 - a plurality of reels in the container;
 - a plurality of hoses, . . . ;
 - a plurality of valves in the container, each said valve situated between one of the first or second manifolds and a respective different one of the reels;

a plurality of fluid level sensors, each said fluid level sensor being associated with a different one of the hoses; and
a controller configured to individually open and close the valves responsive to the fluid level sensors.

Ex. 1001, 10:12–31.

In particular, Petitioner argues that Van Vliet’s fuel delivery system on a trailer is the claimed distribution system with a container, a pump (32, 34), manifolds (36, 38), reels (30), hoses (24), valves (58), fluid level sensors (54), and a controller (56). Pet. 22–30 (citing e.g., Ex. 1004, Figs. 1–2, ¶¶ 3, 8, 14–17, 20, 24, 26; Ex. 1003 ¶¶ 122–152). Patent Owner does not contest these teachings of Van Vliet.

After our review of the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that Van Vliet teaches these claim limitations.³

b) Van Vliet and Cable Applied to Claim 1

Claim 1 also requires:

each said hose connected with a different one of the reels, wherein a portion of the reels are connected to be fed from the first manifold and another portion of the reels are connected to be fed from the second manifold.

Ex. 1001, 10:19–23.

Petitioner relies on Cable for teaching how the reels are connected to be fed from a manifold. Pet. 37–38.

Petitioner argues that Cable teaches a system where fluids are pumped out of a tank (27) through a “pump outlet tube 46’ to one or more of the

³ Organizationally, we address the various claim limitations and arguments separately. However, we note that the final determinations are made with consideration of the claim as a whole and in view of the evidence of secondary considerations of non-obviousness.

hoses (*e.g.*, hoses 64 and 65) that are stored on reels” and that “[t]ube 46 is connected by a conventional reel rotatable coupling to hose 65.” Pet. 37–38 (quoting Ex. 1005, 4:33–36) (Petitioner’s emphasis omitted). Petitioner, supported by its declarant, argues that “[a] POSITA would have understood that a conventional reel rotatable coupling (also known as a swivel joint) would be connected to a flow path in the reel to allow fluid to flow through the reels into the hose.” *Id.* at 38 (citing Ex. 1003 ¶¶ 64–74; Ex. 1016⁴). Petitioner further argues that “hose reels having fluid connections for connecting a hose to a fluid source were commercially-available and well known to POSITAs before the ‘955 Patent’s priority date.” *Id.* (citing Ex. 1003 ¶¶ 64–74; Ex. 1015⁵).

Petitioner argues that “[i]t would have been an obvious design choice for a POSITA to implement these kinds of reels and connections to connect the hoses of *Van Vliet* to be fed by the manifolds, in view of *Van Vliet* alone and/or in combination with *Cable*.” *Id.* (citing Ex. 1003 ¶¶ 178–79, 197).

Petitioner further argues that “[i]ncorporating *Cable*’s . . . reel configuration into *Van Vliet*’s mobile fuel delivery system would merely involve combining prior art elements according to known methods to yield predictable results.” Pet. 37 (citing Ex. 1003 ¶ 175⁶). Petitioner’s declarant testifies that

⁴ Ex. 1016 is a product page listing “Standard Swivels: For Standard Fueling Applications,” and shows a coupling with threading on both ends and a swivel joint in the middle.

⁵ Ex. 1015 (“Coxreels”) is a product page listing “1125 Series hand crank and motorized hose reels,” and shows a hose reel with one end of a coupling on the side of the reel and the other end within the reel for presumably attaching to a hose that would be wrapped around the reel.

⁶ The citation to Ex. 1003 ¶ 174 is a typographical error as the following paragraph is directed to this argument.

Van Vliet and *Cable* describe similar systems for delivering fluid from a mobile trailer via hoses to multiple destinations. Further, the elements incorporated into *Van Vliet* from *Cable* are either already present in *Van Vliet* (e.g., reels) or were simple elements well-known in the art at the time of the ‘955 Patent. Incorporating *Cable*’s . . . reel configuration into *Van Vliet*’s mobile fuel delivery system would merely involve combining prior art elements according to known methods to yield predictable results.

Ex. 1003 ¶ 175.

Patent Owner does not contest the teachings of *Cable* or the understanding of one of skill in the art of a conventional reel rotatable coupling. *See generally* PO Resp. 22–41.

Patent Owner does argue that Petitioner does not provide a reason to combine *Van Vliet* and *Cable* and that one of skill in the art would not combine the two. *Id.* at 22–24, 32–36.⁷ Patent Owner also provides extensive argument concerning Coxreels (Ex. 1015), which though not forming part of the ground, is used to support the combination. *Id.* at 24–32. We address each argument in turn.

(1) Cable and Van Vliet

Patent Owner acknowledges Petitioner’s design choice argument, but then argues that the reasons to combine are generic and “point to generalities.” PO Resp. 22–23. Patent Owner argues that “[b]eyond

⁷ Patent Owner also argues that “*Cable* is not informative of a practical arrangement for *Van Vliet*.” PO Resp. 36 (emphasis omitted). We address this argument in the discussion of dependent claim 2. *See id.* at 22 (explaining that this argument is addressed to claims 2–5). Although we view the argument as not applying to claim 1, for the reasons provided in our discussion of dependent claim 2 we find the argument unpersuasive, and our conclusion as to claim 1 would not change if we considered the argument as applicable to claim 1.

Petitioner’s assertion that such reels and connections are known, Petitioner’s challenge is missing any reasoned explanation of why a POSITA would be prompted to combine Cable’s reels and connections into Van Vliet.” *Id.* at 24.

In Patent Owner’s Preliminary Response, Patent Owner made a similar argument that no motivation to combine had been provided. Prelim. Resp. 34–35. In our Institution Decision, we directed Patent Owner specifically to “Petitioner’s argument that using Cable’s reel configuration in Van Vliet’s system is a simple substitution that ‘merely involve[s] combining prior art elements according to known methods to yield predictable results.’ Ex. 1003 ¶ 175; Pet. 37.” Dec. 14.

Patent Owner again does not directly address this rationale with respect to claim 1.

Rather, Patent Owner argues that “[a] POSITA would not have looked to Cable to modify Van Vliet.” PO Resp. 32 (emphasis omitted).

Patent Owner argues that “[a] POSITA would have understood that the equipment in Cable’s truck is configured for fast service in a roadside environment.” *Id.* at 32. This is essentially why, Patent Owner argues, “the reels and hoses of Cable are situated at the rear of the truck.” *Id.* at 33. Because “the system of Van Vliet is not a drivable road vehicle . . . used to service road vehicles in a roadside environment,” it “does not share the same safety concerns of a roadside environment as in Cable.” *Id.* at 35 (citing Ex. 2011 ¶ 164).

Patent Owner concludes that “Van Vliet and Cable . . . are sufficiently different such that a mere presence of reels and hoses in both would not have motivated their combination” and that because of the difference in focus “a POSITA would have been discouraged from looking to Cable for a physical

arrangement in Van Vliet, which is not a drivable vehicle and is not concerned with rapid servicing in a roadside environment.” *Id.* at 36 (citing Ex. 2011 ¶¶ 169–170).

Supported by case law, and declarant testimony, Petitioner responds that

Differences in [Cable and Van Vliet’s] exemplary applications would not have discouraged a POSITA from combining their teachings.

Reply 8. And:

a POSITA is “a person of ordinary creativity, not an automaton,” and would consider *Cable*’s arrangement of equipment and reel components potentially useful in *Vliet*. See EX1003, ¶¶ 172-175; *KSR*, 550 U.S. at 421 (cannot assume “that a [POSITA] attempting to solve a problem will be led only to those elements of prior art designed to solve the same problem”).

Id. at 9. We agree.

Though the inventors of Cable and Van Vliet may have had different concerns and focuses, this does not negate Petitioner’s argument that the combination is a simple substitution with predictable results. In fact, it is expected that different references would have different concerns and focuses. But, this fact does not of itself render the combination non-obvious. The Supreme Court’s guidance in *KSR* is instructive as to why Petitioner has the better argument.

When a work is available in one field, design incentives and other market forces can prompt variations of it, either in the same field or in another. If a person of ordinary skill in the art can implement a predictable variation, and would see the benefit of doing so, § 103 likely bars its patentability. Moreover, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond that person's skill. A court

must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR Int'l Co., 550 U.S. at 401.

The Supreme Court's explanation applies to cases that are even more extreme than what Patent Owner is arguing. There is no argument here that we are dealing with completely different fields, but rather different focuses and applications between the prior art references. Further, Petitioner's declarant provides evidence that one of skill in the art would consider that "[i]ncorporating *Cable*'s . . . reel configuration into *Van Vliet*'s mobile fuel delivery system would merely involve combining prior art elements according to known methods to yield predictable results." Ex. 1003 ¶ 175.

(2) *Coxreels*

At the same time, Patent Owner does attack Coxreels, possibly to show that it is not a simple substitution to combine Cable's reel into Van Vliet. PO Resp. 24–32, 39. However, Patent Owner's arguments are not addressed to how the Petition relies on Coxreels. *See* Reply 15–16.

As noted above, the Petition argues that Cable teaches reels connected to be fed from a manifold as required by claim 1. Pet. 37–38. The Petition identifies that Cable specifically teaches that "[t]ube 46 [from the manifold] is connected by a conventional reel rotatable coupling to hose 65." Pet. 38 (quoting Ex. 1005, 4:33–36) (Petitioner's emphasis omitted). This is not contested by Patent Owner.

Petitioner further provides evidence that "[a] POSITA would have understood that a conventional reel rotatable coupling (also known as a swivel joint) would be connected to a flow path in the reel to allow fluid to flow through the reels into the hose." *Id.* (citing Ex. 1003 ¶¶ 64–74; Ex. 1016). The swivel joint in Ex. 1016 "[f]or [s]tandard [f]ueling

[a]pplications” shows how a rotatable connection (“full 360° spherical rotation”) can be made between a source of fluid (such as a manifold) and a reel. This is also not contested by Patent Owner.

However, though Cable says it uses “a conventional reel rotatable coupling,” Cable does not include a figure which shows such a coupling in a reel, and Petitioner relies on Coxreels as further evidence to illustrate an example of such an arrangement. *See* Reply 16 (Coxreels is evidence of the background knowledge of one of skill in the art).

Patent Owner argues that the reel in Coxreels is not for fracking, that the materials in the reel are not suitable for fueling stations, and that the reel is not capable of performing at the necessary pressures. PO Resp. 24–32. Patent Owner also argues about the specific dimensions of a particular reel in Coxreels. *Id.* at 39. None of these concerns are relevant here. This is because Petitioner is not arguing that the reel of Coxreels would be combined into Van Vliet’s system. Petitioner is merely arguing that one of skill in the art would have understood the reel of Cable, including its conventional reel rotatable coupling, to be configured in a manner similar to that of Coxreels. *See* Pet. 37–38; Reply 15–16.

We determine that Coxreels provides further support for Petitioner’s position, but at the same time, it is not required for us to rely on Coxreels to support the combination. This is because Cable expressly teaches that it includes “a conventional reel rotatable coupling.” Ex. 1005, 4:33–36. Further, it is uncontroverted that one of skill in the art would understand the coupling to be a swivel joint, like that shown in Exhibit 1016. Ex. 1003 ¶¶ 64–74. Thus, those teachings show that Cable’s disclosure includes each hose connected with a reel, where the reel is connected to be fed from a source of fluid.

(3) *Conclusion as to “Hose Connected to Reel” Limitation*

After our review of the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Van Vliet and Cable teaches or suggests the noted claim limitation.

c) *Secondary Considerations of Non-Obviousness*

When presented, secondary considerations “must always . . . be considered in the overall obviousness analysis.” *Adapt Pharma Operations Ltd. v. Teva Pharms. USA, Inc.*, 25 F.4th 1354, 1372 (Fed. Cir. 2022). However, “a strong showing of obviousness may stand even in the face of considerable evidence of [secondary considerations].” *Id.*

Based on the evidence of record and findings discussed above, we determine that any evidence of secondary considerations would need to be given substantial weight in order to determine that claim 1 has not been shown to be unpatentable by a preponderance of the evidence.

In order for secondary considerations to be awarded “substantial weight” “in an obviousness analysis,” the Federal Circuit has advised that the “secondary considerations must have a nexus to the claims.” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (internal quotations omitted). The Federal Circuit has further instructed that “[t]he patentee bears the burden of showing that a nexus exists.” *Id.* (quoting *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999)). Finally, the Federal Circuit instructs that “[t]o determine whether the patentee has met that burden, we consider the correspondence between the objective evidence and the claim scope.” *Id.* (quoting *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019)).

We first analyze Patent Owner's evidence of secondary considerations of nonobvious, before addressing nexus.

(1) Commercial Success

Patent Owner states that it has achieved commercial success because over 60 FAS units⁸ have been used to deliver over 800,000,000 gallons of fuel. PO Resp. 54–55 (citing Ex. 2043⁹ (Declaration with an identical statement)). Patent Owner does not provide further evidence of these activities, such as invoices or bills of sale. Patent Owner does not provide further discussion.

With only this minimal information we have no reference point to compare this noted use to the market in general. We have essentially no information about the relevant market, or the major market players. From the evidence provided we cannot determine the size of the market, the major players, or the market share of the major players. *See, e.g., In re Applied Materials, Inc.*, 692 F.3d 1289, 1300 (Fed. Cir. 2012) (“An important component of the commercial success inquiry in the present case is determining whether [Patent Owner] had a significant market share relative to *all* competing [products] based on the merits of the claimed invention.”); *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996) (noting that “evidence related solely to the number of units sold provides a very weak showing of commercial success, if any”).

⁸ Patent Owner argues that the FAS units are covered by the claims of the '955 patent. PO Resp. 55.

⁹ Exhibit 2043 is a declaration from Mr. John Ortoleva who oversees the legal affairs of Patent Owner. Ex. 2043 ¶ 1.

Because of the constraints on how we can characterize these numbers in view of the market generally, we cannot give this evidence any significant weight.

(2) Praise By Others

Concerning industry praise, Patent Owner argues that the inventor of the '955 patent (and the FAS unit), “Ricky Dean Shock, was named an Industry Leader at the Texas Oil & Gas Awards for the FAS Unit’s improvements in safety.” PO Resp. 50 (citing Ex. 2043).

Concerning the award, a press release from Atlas Oil Company, a real-party-in-interest of Patent Owner states:

Atlas Oil Company’s Vice President of FAS and Fleet Services Rick Shock was named the Industry Leader at the Texas Oil and Gas Awards Wednesday night in Houston, Texas.

Ex. 2043, 5.

In a later paragraph, the press release states that “FAS units drastically improve the safety of frac site workers by taking them out of the ‘hot zone’.” *Id.* Presumably, Patent Owner is relying on this statement to support its position that the award was “for the FAS Unit’s improvements in safety.” At most, the press release implies that this is a reason for the award, though no information from the Texas Oil & Gas Awards is provided, such as the specifics of the award, or why it was awarded.

Similar to our discussion concerning commercial success, we are again constrained by the limited information and evidence provided by Patent Owner in the amount of weight we can give to this evidence. We recognize that Mr. Shock was named an Industry Leader at the Texas Oil & Gas Awards in 2018, and we do not seek to take that honor away from him. At the same time, Patent Owner has made minimal to no effort to tie that

award to the claims of the patent. Mr. Shock is the named inventor of the '955 patent but we have insufficient evidence to determine that the award was given because of the claimed features of the '955 patent or even because of the FAS units.

(3) Copying By Others

Next, Patent Owner asserts that Petitioner and Comanche Gas Solutions, LLC copied the patented product. PO Resp. 51–54. As evidence, Patent Owner states that it asserted patent infringement of the '955 patent against Petitioner and Comanche Gas Solutions, LLC and Patent Owner provides pictures of the accused products. *Id.* (citing Exs. 2041–2042 (Complaints of the noted litigations)). Patent Owner also notes that Petitioner was aware of a related patent, presumably owned by Patent Owner. *Id.* at 51.

This is insufficient to establish copying.

As correctly noted by Petitioner, “[e]ven if they were found to infringe—. . . infringement is not the same as copying.” Reply 26 (citing *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004)). The Federal Circuit explains that “[n]ot every competing product that arguably fails within the scope of a patent is evidence of copying. Otherwise, every infringement suit would automatically confirm the nonobviousness of the patent. Rather, copying requires the replication of a specific product.” *Iron Grip Barbell Co.*, 392 F.3d at 1325.

Patent Owner’s arguments do not include express assertions or evidence that Petitioner or Comanche Gas Solutions, LLC copied a specific product. Further, though Patent Owner asserts that Petitioner was aware of a related patent, Patent Owner does not discuss how that patent relates to a particular product or the '955 patent, or how that is evidence showing that

Petitioner copied a product or even the '955 patent. Therefore, there is insufficient evidence of copying.

(4) Licensing

Patent Owner states that it “has granted licenses under the ‘118, ‘805, and ‘955 patents to Comanche Gas Services LLC, in which Comanche pays Patent Owner a royalty for the use of automated fracking fuel delivery systems.” PO Resp. 54 (citing Ex. 2043). In Exhibit 2043, Mr. Ortoleva testifies that he “was personally involved with the negotiation of that settlement agreement” and that “Comanche took a license of [the noted patents].” Ex. 2043 ¶ 3.

The record does not appear to include a copy of the settlement agreement (or if it does Patent Owner does not rely on it for support). Thus, we are unable to verify the terms of the agreement. This constrains the amount of weight we can give to this evidence. *See, e.g., In re Cree, Inc.*, 818 F.3d 694, 703 (Fed. Cir. 2016) (unknown “if the licensing program was successful either because of the merits of the claimed invention or because they were entered into as business decisions to avoid litigation, because of prior business relationships, or for other economic reasons”); Reply 26–27.

(5) Nexus and Conclusion

Concerning nexus, Patent Owner asserts that “[t]he FAS Unit is covered by the challenged claims.” PO Resp. 51. Rather than provide evidence that the claims of '955 patent cover an FAS unit, Patent Owner states that “Dr. Rodgers has testified that the FAS Unit meets each and every limitation of at least the challenged claims¹⁰.” *Id.* (citing Ex. 2011 ¶ 219).

¹⁰ Patent Owner overstates Dr. Rodgers’ position, which is limited to “the independent claims.” Ex. 2011 ¶ 219.

This is insufficient, as there is no way for the Board to determine whether nexus exists.

Further, after our review of the evidence of secondary considerations relied on by Patent Owner, even if nexus existed, this evidence is insufficient to overcome the strong case of obviousness in view of Van Vliet and Cable. As discussed above, Patent Owner has provided limited evidence of commercial success, industry praise, copying, and licensing largely without context and without many of the underlying documents necessary to provide the support they are seeking.

d) Conclusion as to Claims 1 & 11

After reviewing the record, we determine that Petitioner has shown by a preponderance of the evidence that claims 1 and 11 are unpatentable as obvious over the combined teachings of Van Vliet and Cable.

4. Analysis of Claim 2

Dependent claim 2 requires “the reels are arranged on first and second opposed sides in the container.” Ex. 1001, 10:32–34. The Petition argues, and it is not contested, that Cable teaches such an arrangement. Pet. 39–40 (citing Ex. 1005, 2:63–3:5, Figs. 1, 4).

Patent Owner does argue that “Cable is not informative of a practical arrangement for Van Vliet.” PO Resp. 36 (emphasis omitted).

Applicable to the reasons to combine, the Petition argues that

A POSITA would have been motivated to apply *Cable*’s teaching of a walkable reel deployment compartment with a central aisle walkway, and reels deployed on opposing sides of the walkway adjacent to the sidewalls, to the trailer of *Van Vliet* to allow *Van Vliet*’s system to be more easily traversable by operators for the purpose of repairs, maintenance, and/or physical inspection.

Pet. 34 (citing Ex. 1003 ¶ 172).

The Petition then discusses these reasons in more detail, including identifying that “[b]oth references describe the combination of these individual elements in a similar manner to deliver fluids to equipment not located on the truck/trailer,” and that “[a]lthough *Vliet* does not detail the physical arrangement of all components in its trailer, *Cable* does.” *Id.* at 35 (citing Ex. 1004 ¶ 14; Ex. 1005, Abstr., 1:62–65); *see also id.* at 34–37.

Petitioner also argues that Van Vliet provides reasons to combine the references. *Id.* at 35–36. Petitioner argues that Van Vliet teaches 1) that different manifolds can be used to supply fluid to different sides of a well (*id.* at 35 (citing Ex. 1004 ¶ 24)); 2) that “[t]he manual valves 28 should be readily accessible to an operator on the trailer 14” (*id.* at 36 (quoting Ex. 1004 ¶ 26) and 3) “that the spatial orientation of the reels 30, manifolds 36 and 38, tanks 18 and 20, and other equipment shown ‘is a matter of design choice for the manufacturer and will depend on space requirements’” (*id.* at 36 (quoting Ex. 1004 ¶ 27)).

In response, Patent Owner argues that “Cable is not informative of a practical arrangement for Van Vliet.” PO Resp. 36 (emphasis omitted). Patent Owner argues that this is because Cable includes additional equipment and because there would be drawbacks to using Cable’s arrangement. *Id.* at 36–40. We address each argument in turn.

Patent Owner identifies that Van Vliet and Cable do not include identical sets of equipment. *Id.* at 36–37 (citing Ex. 2011 ¶¶ 171–173). Patent Owner then argues that without identical equipment, Van Vliet’s equipment cannot be organized in the same way as Cable and “the combination would not have yielded predictable results.” *Id.* at 37 (citing Ex. 1004, Fig. 1; Ex. 1005 Fig 2; Ex. 2011 ¶¶ 174–175).

We first note that Patent Owner’s statement, parroted by their declarant, that “the combination would not have yielded predictable results,” is not further explained. *Id.* at 37; Ex. 2011 ¶ 174–175. It is unclear why this would be the case. For claim 2, the Petition argues that Cable’s teaching of reels arranged on opposite sides of the vehicle would yield predictable results when applied to Van Vliet. *See* Pet. 34–37, 39–40. Even with other equipment present, the reels when arranged as taught by Cable, in Van Vliet’s system, would be on opposite sides of the container.

Further, there is no requirement that identical sets of equipment be included in the references in order to apply the teachings of one reference to another. *See Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (The question is whether “a skilled artisan would have been motivated to combine the ***teachings of the prior art references to achieve the claimed invention***”) (quoting *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007)) (emphasis added); *see also* Reply 9–10.

Patent Owner then presents several drawbacks to using Cable’s arrangement in Van Vliet. PO Resp. 37–40. Although tradeoffs may be required in balancing the benefits and drawbacks of the different arrangements of equipment, such tradeoffs do not necessarily prevent the proposed combination or negate the obviousness of the claimed subject matter. *See Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (“a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine”).

Patent Owner first contrasts Petitioner’s benefit of “reels deployed on opposing sides of an aisle walkway [to be] . . . more easily traversable for

maintenance and repairs” with the issue that “only one side of the reels facing the aisle would be accessible.” PO Resp. 37. Depending on the installation, this could definitely be the case, with easy access to one side and difficult access on the side furthest from the aisle. Cable itself has these types of benefits and drawbacks. For example, certain reels are positioned with easy access to two sides, where others appear to only be accessible from one side. *See* Ex. 1005, Figs. 1–2, 4–5. This is evidence that this type of tradeoff is acceptable in the art.

Patent Owner also argues that “arranging the reels of Van Vliet as in Cable would put undue wear and stress on the hoses and reels.” PO Resp. 40. This is because Patent Owner argues that the axis of the reels would be perpendicular to the sidewalls of Van Vliet’s container, requiring the hoses to be withdrawn at a “steep angle” of 90° from the reels. *Id.*

The claims do not specify the orientation of the reels with respect to the sidewall of the container and Petition makes no argument that the hoses and reels in Van Vliet would be rotated in this manner. *See generally*, Pet. 34–37, 39–40. In fact, Van Vliet illustrates the hoses being perpendicular with the sidewalls without any steep angles between the hoses and reels. Thus, this argument does not appear to address the ground as presented in the Petition.

After reviewing the record, we determine that Petitioner has shown by a preponderance of the evidence that claim 2 is unpatentable as obvious over the combined teachings of Van Vliet and Cable.

5. *Analysis of Claim 3*

Dependent claim 3 requires “an aisle walkway down the middle of the container between the reels on the first and second opposed sides in the container.” Ex. 1001, 10:35–38. The Petition argues, and it is not contested,

that Cable teaches such an arrangement. Pet. 40–41 (citing Ex. 1005, 2:55–63, Fig. 2). The Petition argues that claim 3 is obvious over the combination of Van Vliet and Cable for the reasons discussed above with respect to claim 2. *See* Pet. 33–37, 41.

Patent Owner argues that Cable “teach[es] that the walkway is also a storage area.” PO Resp. 40; *see e.g.*, Ex. 1005 2:66–68 (“the storage area and walkway extending between the hose assemblies”). Patent Owner argues storing items in the walkway is a safety hazard “which would discourage a POSITA from modifying Van Vliet according to Cable.” *Id.* at 41 (citing Ex. 2011 ¶¶ 187–189).

We agree with Patent Owner that a walkway in a truck or trailer could be used for storage and that it may not be safe to access the walkway when used for storage. However, this is not a reason why one of skill in the art would be dissuaded from employing a walkway. It is a reason why the walkway wouldn’t be used for storage, or at least certain types of storage. We also agree with Petitioner that it is equally plausible that the walkway in Cable is sufficiently wide that it can be safely used as a storage area and a walkway. Reply 17. Further, Petitioner persuasively argues that the walkway could be used for storage during transport, but cleared out before use. *Id.*

Ultimately, we do not agree that Cable’s teaching that the walkway can be used for storage would discourage a POSITA from modifying Van Vliet according to Cable to incorporate a walkway, as there is no requirement that the walkway be used for storage.

After reviewing the record, we determine that Petitioner has shown by a preponderance of the evidence that claim 3 is unpatentable as obvious over the combined teachings of Van Vliet and Cable.

6. Analysis of Claims 4–5

Claims 4–5 depend from claim 1. Ex. 1001, 10:39–43. Petitioner argues that claims 4–5 are obvious over the combination of Van Vliet and Cable. Pet. 33–37, 41–43. Patent Owner relies on the arguments addressed above for the patentability of these claims. PO Resp. 22.

After reviewing the record, we determine that Petitioner has shown by a preponderance of the evidence that claims 4–5 are unpatentable as obvious over the combined teachings of Van Vliet and Cable.

7. Analysis of Claim 12

Petitioner argues that claim 12 is obvious over the combination of Van Vliet and Cable. Pet. 33, 43–45. Claim 12 depends from claim 11 and requires “the at least one pump includes two pumps.” Ex. 1001, 11:9–10. Petitioner correctly notes that Van Vliet teaches two pumps 32, 34. Pet. 33 (citing Ex. 1004 ¶ 15, Fig. 1). This is uncontested by Patent Owner.

After reviewing the record, we determine that Petitioner has shown by a preponderance of the evidence that claim 12 is unpatentable as obvious over the combined teachings of Van Vliet and Cable.

E. 35 U.S.C. § 103 – Van Vliet, Cable, LCR I, LCR II

1. Claims 6–10, 14–18

Petitioner challenges claims 6–10 and 14–18 as obvious over Van Vliet and Cable with LCR I and/or II. Pet. 45–53. Among other things, Petitioner argues that one of skill in the art “would have recognized the advantage of using LCR I and II’s electronic register in Van Vliet’s mobile fuel delivery system to display the flow data of Van Vliet’s sensors and controllers.” *Id.* at 46.

Patent Owner does not separately address these claims. PO Resp. 44.

After reviewing the record, we determine that Petitioner has shown by a preponderance of the evidence that claims 6–10 and 14–18 are unpatentable as obvious over the combined teachings of Van Vliet and Cable with LCR I and/or II.

2. *Claims 19 and 20*

Claim 19 is an independent claim, similar to claims 1 and 11, but also includes: “a register between the at least one pump and the at least one manifold.” Ex. 1001, 12:7–8.

Claim 20 depends from claim 19 and requires that the register “generate measurement data representative of an amount of fluid provided from the at least one pump, and the register is in communication with the controller to send the measurement data to the controller.” *Id.* at 12:21–25.

Petitioner argues that claims 19 and 20 are obvious over Van Vliet and Cable with LCR I and/or II. Pet. 45–47, 53–57. Among other things, Petitioner argues that one of skill in the art “would have recognized the advantage of using LCR I and II’s electronic register in Van Vliet’s mobile fuel delivery system to display the flow data of Van Vliet’s sensors and controllers.” *Id.* at 46.

Looking first to claim 20, it is uncontested that LCR I and II both teach electric registers designed to meter liquid, including fuel, and that they teach all of the limitations added by claim 20. *See* Pet. 47–48, 57 (citing e.g., Ex. 1006, 2; Ex. 1007, 4; Ex. 1003 ¶¶ 203–205); *see generally*, PO Resp. 42–44.

However, turning to claim 19, Patent Owner argues that the Petition does not sufficiently explain why the LCR I or II register would be located “between the at least one pump and the at least one manifold” as required by claim 19. PO Resp 42–44.

Concerning this limitation, the Petition argues that “LCR 600 of LCR I and II is an electronic register designed to be used with a pump.” Pet. 54 (citing Ex. 1006, 2; Ex. 1007, 4). The Petition continues, “[a] POSITA would have understood that a register installed to be used with a pump 32 should be installed *directly* downstream of [Van Vliet’s] pump 32 in order to obtain the most accurate flow rate measurements possible.” *Id.* at 55 (citing Ex. 1003 ¶¶ 224–26; Ex. 1006, 2). Petitioner’s declarant expands on this by arguing that “[a] POSITA would have understood that a register installed downstream of a pump 32 would be installed between pump 32 and manifold 36 in order to capture all of the fluid that was flowing out of pump 32.” Ex. 1003 ¶ 225.

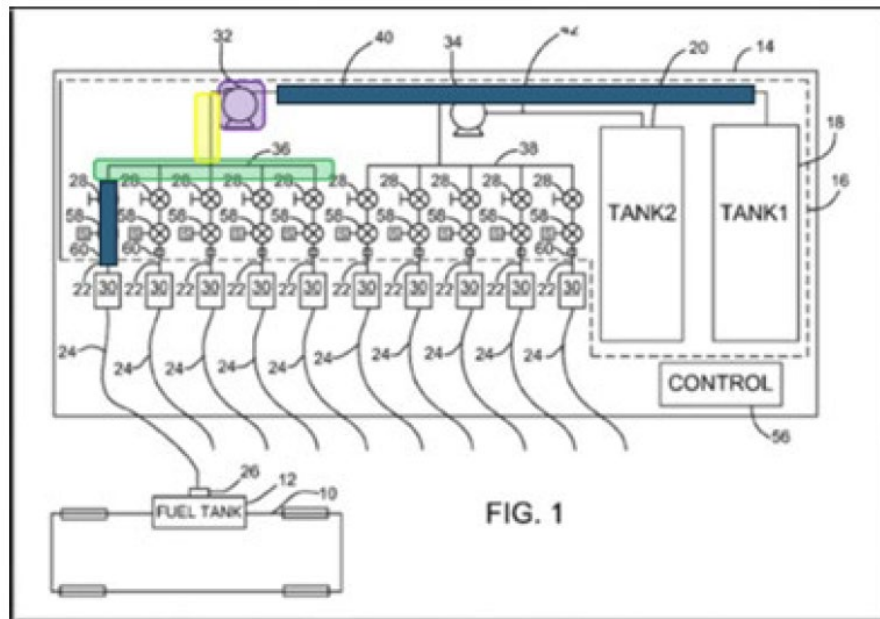
The Petition also argues that “installing a register that is designed to be used with a pump directly downstream of the pump is an obvious design choice.” Pet. 55. Here Petitioner’s declarant further explains that

such a configuration would be appropriate in order to capture the total amount of fuel delivered, such as for invoicing purposes. There are a limited number of locations in the system of *Van Vliet* where installing the LCR 600 flowmeter / register would be feasible. The line between the pump and the manifold would at least be obvious to try.

Ex. 1003 ¶ 226.

In response, Patent Owner argues that Petitioner and its expert do “not provide any support for why a register should be installed *directly* downstream of the pump in order to obtain the most accurate flow rate measurements possible.” PO Resp. 42. Patent Owner correctly notes that Petitioner does not point to any evidence concerning a relationship between a register and a pump, other than its declarant’s testimony. *Id.*

Patent Owner then argues that “a register could beneficially be located elsewhere in Van Vliet besides directly downstream of the pump.” *Id.* at 43. In fact, Patent Owner’s declarant testifies that, “[o]nce the system is loaded with fuel so that there are no air pockets, the flow would be equivalent anywhere it is measured along the entire flow path from a fuel source inlet up to the hoses.” Ex. 2011 ¶ 198. Patent Owner’s declarant further testifies that a register could be placed before or after the pump as shown in the below modified Figure 1 of Van Vliet. *Id.*



Van Vliet Figure 1 shows a fuel delivery system used to provide fuel to pieces of equipment at a well site. Ex. 1004 ¶ 14. Patent Owner’s declarant has modified the figure to add purple to highlight a pump. Patent Owner’s declarant has added yellow, green, and two blue section to identify areas where “a register could be placed.” Ex. 2011 ¶ 198. He notes that “a location downstream of the manifold would require an additional register for each outlet from the manifold, but this arrangement would be beneficial

because it would allow flow measurement to each individual hose, such as for separate tracking of fuel provided to different customers.” *Id.*

Though Patent Owner identifies issues with Petitioner’s argument that the register should be placed next to a pump, Patent Owner’s argument also supports other parts of Petitioner’s argument. For example, Petitioner’s declarant testified that “[t]here are a limited number of locations in the system of *Van Vliet* where installing the LCR 600 flowmeter / register would be feasible” (Ex. 1003 ¶ 226), which is supported by Patent Owner’s declarant when he testifies that there are only 4 general areas where the register can be placed (Ex. 2011 ¶ 198). Petitioner argues that these limited choices make the location an obvious design choice / obvious to try. Pet. 55; Ex. 1003 ¶ 226; Reply 19–21.

This is consistent with the Supreme Court’s guidance in *KSR*:

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

KSR Int’l Co., 550 U.S. at 421

Here the problem is the need to record the amount of fuel being supplied, and the evidence shows that are four general locations to place a register(s) to perform this function. Ex. 2011 ¶ 198. Patent Owner admits that any of these four locations will work. PO Resp. 43.

Patent Owner does argue that if the fuel is supplied to multiple customers there would be a need for registers associated with each hose and thus not all of the identified locations would be ideal. *Id.* at 44. However,

implicit in this argument is that if the fuel is delivered to one customer, any of the four locations for a register(s) would work just as well as any other.

After reviewing the record¹¹, we determine that Petitioner has shown by a preponderance of the evidence that claims 19 and 20 are unpatentable as obvious over the combined teachings of Van Vliet and Cable with LCR I and/or II.

F. 35 U.S.C. §§ 102/103 – Van Vliet, Cable, DeFosse

Petitioner challenges claim 13 as rendered obvious by Van Vliet, Cable, and DeFosse. Pet. 58–63. Claim 13 requires two pumps “arranged in fluid series” (Ex. 1001, 11:11–12), for which Petitioner relies on DeFosse (Pet. 61). Among other things, Petitioner, supported by declarant testimony (Ex. 1003 ¶¶ 244–251), argues that one of skill in the art

would have been motivated to use two pumps in series in order to produce sufficient pumping capacity using two or more smaller pumps that would individually fall below the necessary pumping capacity and/or to take advantage of the fast startup and protection from cavitation that such a system would provide.

Id. at 58–59 (citing Ex. 1003 ¶ 251).

Patent Owner and its declarant note that Petitioner’s declarant does “not provide[] an underlying factual basis to support [these] findings.” PO Resp. 47–48; Ex. 2011 ¶ 210. However, at the same time Patent Owner’s declarant does not provide testimony that the findings are incorrect. After considering the testimony of both parties’ declarants, we find Petitioner’s declarant more persuasive. In particular, Petitioner provides testimony from one of ordinary skill in the art that the known benefits of two pumps in series include:

¹¹ This includes considerations of claim 19 as a whole and in view of the evidence of secondary considerations of non-obviousness.

- a series pumping system helps prevent cavitation of the pumps (Ex. 1003 ¶ 244);
- the ability to discharge at increased pressures (*id.* ¶ 247);
- allows for higher pressures, and associated flowrates, to be available using smaller diameter pumps, which would be valuable in a mobile distribution system (*id.* ¶ 248); and
- faster response of the system as a whole (*id.* ¶ 249).

We determine that these are all sufficient reasons why one of skill in the art would be motivated to combine DeFosse’s teaching of two pumps “arranged in fluid series” with Van Vliet’s system as argued by Petitioner.

Patent Owner argues that “given DeFosse’s pumps function for mixing of hydraulic frac fluid and that Van Vliet’s pumps handle fuel and have no need for mixing, a POSITA would not have looked to DeFosse’s pumps to modify Van Vliet.” Sur-reply 19 (citing PO Resp. 49–50). However, Petitioner is not relying on the teachings of DeFosse for mixing fluids, only for the more general teaching of two pumps in series used for pumping generally. As noted above, this general teaching, combined with the uncontested known benefits of using two pumps in series is sufficient to meet Petitioner’s burden.

After reviewing the record, we determine that Petitioner has shown by a preponderance of the evidence that claim 13 is unpatentable as obvious over the combined teachings of Van Vliet, Cable, and DeFosse.

G. 35 U.S.C. §§ 102/103 – Without Cable

The Petition also presents grounds similar to the above without Cable. Petitioner challenges claims 1, 11, and 12 as anticipated and/or rendered obvious by Van Vliet. Pet. 22–33. Petitioner challenges claims 6–10 and 14–20 as rendered obvious by Van Vliet with LCR I and/or II. *Id.* at 45–57.

Petitioner challenges claim 13 as rendered obvious by Van Vliet and DeFosse. *Id.* at 58–63.

Having already determined that a preponderance of the evidence shows that the challenged claims are unpatentable, it is unnecessary to address these additional grounds.

III. MOTION TO EXCLUDE

Patent Owner filed a Motion to Exclude portions of Exhibits 2028 and 2045. Paper 33 (“Mot.”). We do not rely herein on either of these Exhibits, or on the testimony of Dr. Durham as recited at the noted portions (*See* Mot. 1 fn.1. (citing Ex. 2028, 128:13–134:20; Ex. 2045 90:25–96:20). Thus, Patent Owner’s Motion to Exclude is moot.

IV. CONCLUSION¹²

For the foregoing reasons, we determine that Petitioner has proven under the preponderance of the evidence that the challenged claims are unpatentable, as summarized below:

Claims	35 U.S.C. §	Reference(s) /Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–5, 11, 12	103	Van Vliet, Cable	1–5, 11, 12	
6–10, 14–20	103	Van Vliet, Cable, LCR I	6–10, 14–20	

¹² Should Patent Owner wish to pursue amendment of the claims in a reissue or reexamination, we note the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If a reissue or reexamination is pursued, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

Claims	35 U.S.C. §	Reference(s) /Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
6–10, 14–20	103	Van Vliet, Cable, LCR II	6–10, 14–20	
6–10, 14–20	103	Van Vliet, Cable, LCR I, LCR II	6–10, 14–20	
13	103	Van Vliet, Cable, DeFosse	13	
1, 11, 12	102	Van Vliet ¹³		
1, 11, 12	103	Van Vliet		
6–10, 14–20	103	Van Vliet, LCR I		
6–10, 14–20	103	Van Vliet, LCR II		
6–10, 14–20	103	Van Vliet, LCRI, LCR II		
13	103	Van Vliet, DeFosse		
Overall Outcome			1–20	

V. ORDER

In consideration of the foregoing, it is ORDERED that:

Claims 1–20 of U.S. Patent 10,974,955 B2 have been shown to be unpatentable;

Because this is a Final Written Decision, parties to the proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2; and

The Motion to Exclude is denied as moot.

¹³ As explained above, because we determine that the challenged claims are unpatentable under other grounds, we decline to address the remaining grounds.

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