

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 IPR2023-01236

Patent No. 10,815,118

**PATENT OWNER'S SUR-REPLY
TO PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE**

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Exhibit	Description
Ex. 2001	Dictionary definitions
Ex. 2002	WO 2007/087849 with translation
Ex. 2003	U.S. 2,769,572
Ex. 2004	Parent Application 15/290,304 File History
Ex. 2005	GB 2485832
Ex. 2006	Sister Application 15/673,730 File History
Ex. 2007	U.S. 3,826,275
Ex. 2008	Jayanti, "Bends Flow and Pressure Drop"
Ex. 2009	Keulegan et. al., "Pressure Losses For Fluid Flow In Curved Pipes"
Ex. 2010	Haile Parent Application
Ex. 2011	Expert Declaration of John Rodgers
Ex. 2012	Intelligencer article (digital print The Intelligencer, January 31, 2020)
Ex. 2013	US Patent 11,305,979
Ex. 2014	Waterman, "Better Safe Than Sorry"
Ex. 2015	Intentionally Omitted
Ex. 2016	Intentionally Omitted
Ex. 2017	Intentionally Omitted
Ex. 2018	Intentionally Omitted
Ex. 2019	Intentionally Omitted
Ex. 2020	Intentionally Omitted
Ex. 2021	Intentionally Omitted
Ex. 2022	Intentionally Omitted
Ex. 2023	Intentionally Omitted
Ex. 2024	ASTM D975 Standard Specification for Diesel Fuel Oils

Ex. 2025	CRC Report Diesel Fuel Storage and Handling Guide
Ex. 2026	AFLAS TM Reg Serial 73310396
Ex. 2027	Rubber Technology, “TFE/P (Aflas®)/FEPm rubber quality” (https://web.archive.org/web/20160404102358/http://rubbertechnology.info:80/en/-rubber-compounds/tfep-aflasr--fepm-rubber-quality/)
Ex. 2028	AFLAS technical brochure (http://web.archive.org/web/20161221181920/http://agcchem.com/component/jdownloads/finish/9-aflas-fluoroelastomers/7-aflas-fluoroelastomers-technical-brochure?Itemid=0)
Ex. 2029	Transcript of Deposition of Robert Durham
Ex. 2030	Energy and Power Engineering, 2023, “Analysis of Emissions Profiles of Hydraulic Fracturing Engine Technologies”
Ex. 2031	FAS Virtual Marking page (https://fluidautomationstation.com/patents/)
Ex. 2032	Rodger’s CV
Ex. 2033	Well Completion 101 Part 3 (https://www.enverus.com/blog/well-completion-well-stimulation/)
Ex. 2034	US Patent 2,425,848
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Ex. 2036	US Patent 3,196,982
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Ex. 2038	US Patent 3,430,730
Ex. 2039	US Patent 1,829,173
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Ex. 2041	Waterman, “Better Safe Than Sorry”
Ex. 2042	Atlas Oil’s Rick Shock Named “Industry Leader” At Texas Oil and Gas Awards
Ex. 2043	<i>FAS v. Comanche</i> Gas Solutions Complaint
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Ex. 2045	Ortoleva Declaration
Ex. 2046	Information Disclosure Statement
Ex. 2047	Transcript of Supplemental Deposition of Robert Durham

I. INTRODUCTION

Petitioner's Reply is a clear retreat from the Petition. The Reply is littered with new arguments. For instance, despite not asking for a claim construction, Petitioner now asserts that a flow passage "running through" the reel is met by a hose wrapping around the reel. Similarly, concerning Coxreels, Petitioner attempts to shift its grounds. For Shoap, the Reply still does not explain a reason a POSITA would have formed Shoap's conduit from two thinner concentric conduits. Likewise, with respect to claims 7 and 11, Petitioner provides no reason that a POSITA would be motivated to make the proposed modifications.

II. GROUND 1: VAN VLIET DOES NOT DISCLOSE FLOW PASSAGES RUNNING THROUGH THE REELS OR HOSES CONNECTED WITH THE FLOW PASSAGES VIA THE REELS

The Board already correctly agreed that Petitioner did not meet its burden establishing that Van Vliet alone discloses or otherwise suggests claim elements 1[e] and 1[f]. Inst. Sec. at 8-10; POR at 15. On reply, Petitioner attempts to backfill its ground with a new argument that should also be rejected.

Contrary to Petitioner's assertion, the parties' experts do not agree that Figure 1 of Van Vliet shows the relationships between components through which fluid flows. Reply at 3. In Dr. Rodgers' testimony on whether Figure 1 of Van Vliet shows fluid flow, his answer was "[t]o some extent." EX. 1049 55:5-14. Dr. Rodgers explained that extent in his Declaration. See Ex. 2011 ¶¶96, 98, 99, 101.

Petitioner next recycles its argument that the schematic Figure 1 of Van Vliet shows a single fluid stream, and then jumps to a conclusion that the fluid path runs through the reels 30. Reply at 3-4. The Board, however, has already correctly disagreed with this conclusion. Ins. Dec. at 8-10; POR at 15-16.

Petitioner did not ask for a construction on the flow passages “running through” the reels, yet it now advances the new argument that the limitation is met by the hose wrapping around the reel. Reply at 4-5. But the hose of Van Vliet cannot be connected to reel 30 because Van Vliet describes that the ends of the hose are connected to dry connections 60 and 62, which are not part of the reel. POR at 16. Thus, even if the hose wraps around the reel, Petitioner never explains how, when wrapped, Van Vliet’s hose is also part of the flow passage running through the reel, i.e., that both are true – that the hose is wrapped around the reel and that the ends of the hoses are connected to dry connections 60 and 62.

Petitioner wrongly asserts that “connected” does not require a fluid connection, and “via” simply indicates where the connection occurs. Reply, at 5-6. Petitioner points to an IPR of a related patent in support, but makes no legal argument that claim constructions from one IPR are binding in another.

Petitioner also interjects a hypothetical that the claim limitations would be met by a separate conduit connected to a manifold and passed through a portion of a hollow spindle, and posits that PO has not addressed this at all. Reply at 6. However,

Petitioner has not alleged that a separate conduit is found in Van Vliet, nor does Petitioner explain the relevance of the hypothetical. Petitioner's hypothetical is a mere self-serving exercise that has no basis in a claim construction.

Petitioner next wrongly alleges that Van Vliet's spill containment pans require a fluid path running through the reels. Reply at 6. PO addressed this (POR at 17), and Petitioner failed to substantively respond. Petitioner carries the burden to explain how leaking inherently requires that the reels include flow passages – which Petitioner has not done. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). In contrast, PO explained that fluid leaked at other locations in the system could leak onto the reels and then from the reels to the pan. POR at 17.

III. GROUNDS 1A AND 2A: A POSITA WOULD NOT MODIFY VAN VLIET WITH COXREELS

Petitioner unsuccessfully attempts on reply to shift its grounds. The grounds in the Petition explicitly assert incorporation of Coxreels' reel into Van Vliet. Petition at 35-36. Yet on reply, Petitioner asserts incorporation of the flow passage of Coxreels into Van Vliet's reels. Reply at 7-8. Petitioner's rationale and motivation (Petition at 35) is inconsistent with its reply. That section of the petition stated:

- it “would have been obvious to a POSITA to combine *Coxreels*' teaching of a **specific reel** with *Van Vliet*” (emphasis added),
- a “POSITA would have recognized the advantage of **using Coxreels' reel in Van Vliet's mobile fuel delivery system**” (emphasis added),

- “a POSITA would have needed only to select *Coxreels’* reel when choosing which reel to implement” (emphasis added),
- this “would have been an obvious choice because *Coxreels’* reel was a readily available alternative” (emphasis added), and
- “Incorporating *Coxreels’* reel into *Van Vliet*’s mobile fuel delivery system” (emphasis added).

These quotations confirm that the basis of the grounds is an incorporation of Coxreels’ reel into Van Vliet. Petitioner’s reply narrative - that PO argues an improper bodily incorporation - is inconsistent with the actual grounds it proposed. PO has responded to the grounds as originally articulated by Petitioner. Petitioner has overlooked the quotes above and has not explained how its grounds can be understood as anything other than an assertion of using of Coxreels’ reel in Van Vliet.

PO's arguments also do not argue bodily incorporation, as PO has not asserted that Coxreels cannot be physically combined into Van Vliet. Rather, PO's arguments are commensurate in scope with the grounds. A POSITA would not have utilized the Coxreels reel in Van Vliet for the numerous reasons PO provided.

Petitioner also attempts to distort the basis for its grounds. Petitioner states, “As explained in the Petition.” Reply at 7. Except that what follows is not explained in the Petition. For instance, Petitioner offers, “A POSITA would have recognized

advantages of the flow passage in *Coxreels*' reels (e.g., a non-crimping, flat smooth hose wrap)." (citing Petition at 36-38; Ex. 1003, ¶¶150-152). However, the citation does not say that, does not describe any particular advantages associated with flow passages, and does not even mention "non-crimping, flat smooth hose wrap." Petitioner next asserts that the petition explains that incorporating a flow passage into Van Vliet's reels would have been a "predictable variation." But this too is not in the petition, which instead states "[i]ncorporating *Coxreels*' reel into *Van Vliet*'s mobile fuel delivery system" would yield predictable results." Petition at 36.

Lastly, Petitioner now also contends that its combination "does *not* require a wholesale substitution of *Van Vliet*'s hose reels with *Coxreels*' reels." Reply at 8. Again, this is not the ground advanced in the Petition, let alone "explained" there.

The proposal of incorporating a flow passage into Van Vliet's reels materially differs from the original ground of incorporating *Coxreels*' reel into Van Vliet because it changes the scope of the proposed modification. For instance, although Van Vliet generally discloses reels, it describes no structure of the reels and thus no basis for incorporating a flow passage into that unknown structure. Therefore, if the ground is not based on incorporating the entire *Coxreels* reel, it is unclear, and the Petition fails to explain, what reel structure is even present in Van Vliet to modify. Thus, incorporating *Coxreels* flow passage into Van Vliet cannot be Petitioner's ground.

Furthermore, it would be prejudicial to PO to allow Petitioner to evaluate PO's arguments, and then permit Petitioner to move the goalposts to an incorporation of Coxreels flow passage. As PO is not permitted at this stage to submit new evidence, such a shift, if permitted, would be prejudicial because PO does not have the same ability to respond and develop arguments as it had earlier in this proceeding.

Dr. Durham's contradictions further cloud the ground. As shown in Table 1 below, in his supplemental deposition Dr. Durham contradicts his original testimony.

Table 1: Durham Contradictions

Durham Original Declaration (Ex. 1003, by paragraph)	Durham Deposition Testimony After Supplemental Declaration Ex. 1055 (Ex. 2047, by page and lines)
150. "It would have been obvious to a POSITA to use the specific reel described in <i>Coxreels</i> ' in the system of <i>Van Vliet</i> ."	Q. Okay, it's not your position that it would have been obvious for a POSITA to incorporate a specific Coxreels reel into Van Vliet's mobile fuel delivery system? A. Right. [35:19-23]
151. "Accordingly, a POSITA would have recognized the advantage of using <i>Coxreels</i> ' reel in <i>Van Vliet</i> 's mobile fuel delivery system. This would have predictably resulted in enabling <i>Van</i>	Q. Okay, so you're not proposing in this matter that a specific Coxreels reel would be incorporated into Van Vliet's mobile fuel delivery system? A. Correct. It's the teachings of Coxreels that are important.

<i>Vliet</i> 's system to operate using a specified reel of a specified size. “	[35:14-18]
153. “To combine <i>Van Vliet</i> with <i>Coxreels</i> , a POSITA would have needed only to select <i>Coxreels</i> ' reel when choosing which reel to implement. Incorporating <i>Coxreels</i> ' reel into <i>Van Vliet</i> 's mobile fuel delivery system would merely involve combining a known prior art reel according to known methods, installing and using the reel in a conventional way. Therefore, a POSITA would have expected that the <i>Coxreels</i> reel would work successfully and according to its known functionality in combination with <i>Van Vliet</i> .”	Q. Now, in your testimony in these IPRs, you haven't identified a specific <i>Coxreels</i> reel that you are proposing would be combined with the <i>Van Vliet</i> reference; correct? A. Correct, it's the teachings of <i>Coxreels</i> that I'm relying on, not a particular model, just the overall teachings, particularly the teachings of a fluid flow path going through the spindle of the reel and then onto the hose. [35:5-13]

Additionally, insofar as Dr. Durham mentions a “non-crimping, flat smooth hose wrap,” it led him to conclude that a POSITA would have used *Coxreels*' reels with *Van Vliet*'s system, not merely the flow passage as Petitioner now suggests. Ex. 1003, ¶152.

There is no doubt that the modification proposed in the ground is an incorporation of *Coxreels*' reel into *Van Vliet*, not merely the flow passage as Petitioner urges on reply.

A. A POSITA would have recognized that the Coxreels 1125 Series reel would have been unsuited for an automated fueling station as in Van Vliet.

Petitioner believes that PO's "unsuitability" argument is an improper bodily incorporation, but PO's argument is completely proper. First, the ground requires incorporation of Coxreels' reel into Van Vliet. Second, Petitioner's characterization of PO's argument is misplaced, as PO did not argue that Coxreels reel cannot be physically combined into Van Vliet. PO's argument is based upon what the teachings would have suggested to a POSITA.

Additionally, the premise of Petitioner's reply to the "suitability" argument is false. Petitioner asserts PO's argument "is irrelevant to whether a POSITA would have combined *Coxreels'* **teachings** of a flow passage running through a reel with Van Vliet." Reply at 9 (emphasis original). Petitioner's reliance on *In re Etter* is misplaced. Reply at 9. The court in *In Re Etter* held, "Etter's assertions that Azure cannot be incorporated in Ambrosio are basically irrelevant." *In Re Etter* at 859. Unlike in *In Re Etter*, PO has not argued that that Coxreels reel cannot be incorporated into Van Vliet. *In Re Etter* is inapposite.

Petitioner's assertion that even if Ground 1A required physically incorporating *Coxreels'* reel into Van Vliet's system, that combination would have been obvious because Coxreels' reel was a cost-effective and readily available option fails for several reasons. Reply at 11. First, the assertion is based on a single

sentence in the Petition devoid of any underlying support or explanation of how it ties to combining the prior art elements in the way claimed. Dr. Durham may parrot the statement (Ex. 1003 at ¶150), but he too does not provide any underlying support or explanation.

Second, Petitioner failed to explain how “cost-effective and readily available” would allegedly motivate a POSITA to make the proposed combination. For instance, Petitioner does not tie a “cost-effective and readily available option” to a particular teaching in Coxreels. Moreover, although Petitioner asserts it is “compared to a custom made reel,” Petitioner provided no evidence of comparative costs or availability of Coxreels’ reel, let alone a “custom made” reel. The assertion of a “custom made reel” is arbitrary and self-serving, as it lacks identification of features this hypothetical custom reel would have or not have. It is a hollow exercise lacking any meaningful analysis.

Petitioner’s assertion that the ‘118 Patent claims do not require incorporating a brass inlet or an AFLAS seal and that PO’s argument is “basically irrelevant” is also misplaced for several reasons. Reply at 11.

First, Petitioner’s contention is contrary to its own ground requiring incorporation of Coxreels’ reel into Van Vliet’s system. As the Coxreels reels include a brass inlets and AFLAS seals, consideration of those features, and the teachings those features suggest to a POSITA, is very relevant. Thus, even if

Petitioner could now change its grounds, the flow passages would still include the problematic brass inlet and AFLAS seal.

Second, Petitioner's position is contrary to law. In *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019), the Federal Circuit held that the benefits, both lost and gained, should be weighed against one another, and the prior art must be considered for all its teachings, not selectively. Like *Henny Penny*, Coxreels must be considered for all its teachings, advantageous and disadvantageous, not selectively. See also *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1550 (Fed. Cir. 1983) ("prior [art] must be considered in its entirety, i.e. as a whole."). See also *In re Enhanced Security Research, LLC*, 739 F.3d 1347, 1360 (Fed. Cir. 2014) (one cannot "stitch together an obviousness finding from discrete portions of prior art references without considering the references as a whole.").

Third, also contrary to law, Petitioner urges the Board to ignore Coxreels' disadvantages that PO raises. As *Henny Penny* requires, the prior art must be considered for all its teachings, not selectively.

Insofar as Petitioner asserts interchanging or swapping features between different models in Coxreels and seals or that are not in Coxreels, such assertions are immaterial because the basis of the grounds is incorporation of Coxreels' reel, not some previously unidentified amalgamation of features that Petitioner has now

chosen in hindsight. Indeed, although Dr. Durham suggests other seals could be used, such as nitrile seals, he provides no support for any examples or properties of nitrile seals or any other type of seal. Ex. 2047 at 30:13-32:10.

Indeed, the drawbacks of the brass inlet or AFLAS seal outweigh whatever (unidentified) benefits there are.¹ Brass can lead to fuel degradation and promote formation of gels and deposits that can plug lines, orifices, filter screens, and the like, causing injector malfunction or seizures. POR at 20. Thus, the brass inlet in Coxreels risks malfunction of downstream equipment. Even Dr. Durham acknowledges that such equipment is in the “red zone” and operates at high pressure and temperature, that safety is a “chief concern” on a well site, and that safety incidents can result in life-threatening injuries. Ex. 2047 at 20:17-23; 66:13-67:25. (“A red zone's an area around the high pressure pumping equipment and well heads, frac iron, things that contain high pressure” and “close proximity to the engines, the temperatures can be higher than the ambient temperature...[b]ecause the engines release heat.”). A POSITA would therefore conclude that use of brass in a refueling system risks serious malfunctions and possible injury. In view of such serious

¹ Petitioner asserted a POSITA “would have recognized the advantage” of Coxreels’ reel, but neither Petitioner nor its expert identify or explain what “the advantage” is. POR at 36. Petitioner is thus relegated to arguing, in hindsight, that features that were buried in its expert’s report are “the advantages” even though it never identified or relied on those as the advantages.

consequences, a POSITA would understand a brass fitting to be a substantial disadvantage.

Dr. Durham's disagreement about brass lacks merit. First, his premise is false. He attests that there is no evidence that the application of a fueling system meets the criteria of PO's Ex. 2024. Ex. 1055 at ¶11. Dr. Durham's interpretation of Ex. 2024, however, is misplaced. He asserts that Ex. 2024 deals with long term storage and high temperature and severe duty applications of diesel. Ex. 1055 at ¶11. However, Dr. Durham later acknowledged that his assertion misstates the explicit text of Ex. 2024, which states those conditions as alternatives. Ex. 2047 at 59:17-60:12; 62:8-63:13. Dr. Durham also acknowledged that the application of the refueling system involves high pressure and elevated temperatures in the "red zone" where the frac pumps are located. *supra* Ex. 2047. Thus, contrary to his own conclusion, the application of a fueling system does in fact involve high pressure and temperature, placing it squarely within the concerns in Ex. 2024.

Second, Dr. Durham's testimony concerning residual fuel is also to no avail. See Ex. 1055 at ¶12. It is immaterial what happens when there is no fuel in the system, because the concern occurs when there is fuel in the system, which Dr. Durham does not deny.

Third, Dr. Durham's additional assertion that there would be no substantial volume of fuel exposed to the brass for any extended period of time also lacks

relevance. Ex. 1055 at ¶12. As Dr. Durham acknowledged *supra*, Ex. 2024 is not directed to, and does not require, long term storage of fuel, as that was just one alternative condition of concern. Moreover, Ex. 2024 is not limited to any particular fuel volume, nor does Dr. Durham point to any such volumetric limitations. Given the risk of serious consequences discussed above, a POSITA would not risk using a brass fitting.

Dr. Durham also charges that Van Vliet and the challenged claims are not limited to diesel. Ex. 1055 at ¶13. However, as discussed above, prior art must be considered for all its teachings, not selectively. It is undisputed that Van Vliet is directed to fuel, which Dr. Durham does not deny diesel is. Van Vliet explicitly indicates its technical field is “Fuel delivery systems and methods,” which Petitioner also concedes in the Petition. Petition at 17; Ex. 1004 at [0001]. Dr. Durham also refers to diesel in numerous instances in his declaration. Reply at 10, FN 6; Ex. 1003 at 36, 59. Petitioner therefore considered diesel, and a POSITA would do the same.

Regarding the AFLAS seal, Petitioner’s reply does not defeat PO’s arguments. First, Dr. Durham’s assertion that neither the claims nor the art require or exclude operation at any temperature range is immaterial. Ex. 1055 at ¶14. Again, prior art must be considered for all its teachings, not selectively. The AFLAS seal of Coxreels is therefore fairly subject to consideration.

Second, Petitioner suggests that concerns with the AFLAS seal would not have discouraged a POSITA because there is no evidence that the interior of the refueling system would reach the outdoor temperature that PO asserted and that a POSITA would design the system for only warmer temperatures. This too is to no avail, as there is no evidence that a POSITA would disregard temperature. Additionally, Dr. Durham posits that most of the year many fracturing operations are not conducted in regions that experience the temperature PO asserted (negative 3 °C). However, this opinion lacks support. Dr. Durham points to South Texas, but he provides no evidence that South Texas, or any other region for that matter, remains above -3 °C. He does, however, acknowledge that temperatures in the regions he was referring to fall below zero. Ex. 2047, 28:22-25. Thus, it is plausible that a refueling unit, even in South Texas, would see the low temperature PO asserts, and a POSITA would therefore consider temperature in weighing disadvantages.

Dr. Durham speculates, “many service companies would focus their operations in particular [warmer] regions of the country in order to control their business costs.” However, he was unable to name even one fuel delivery service company that focuses operations in a particular “warm” region of the country, let alone “many service companies.” Ex. 2047, 25:21-27:25. Additionally, Dr. Durham indicated companies would lower business costs due to “fewer pieces of equipment, fewer pieces of redundant equipment you have to invest capitally and maintain, you

have lower personnel costs, you have easier oversight and management, lower administrative costs more likely than not.” Ex. 2047, 23:22-24:3. However, none of these examples tie to or require only regional operation or operation in only “warm” climates. A company need not operate only regionally to implement those measures.

Petitioner asserts brass inlets might not be optimal, but that does not refute obviousness. Reply at 12. PO disagrees. Dr. Durham acknowledges that safety is a “chief concern” on a well site, and safety incidents can result in life-threatening injuries. Ex. 2047 at 20:17-23; 66:13-67: 25. Given the potential for life-threatening injuries, there is no reason a POSITA would choose to use brass and increase a risk of equipment malfunction or seizure, which of course could pose a safety concern.

Petitioner attacks *Dr. Rodgers’ model* on the basis that none of the Petition, the prior art, or the ‘118 Patent claims require any particular hose size or length, model of Coxreels’ reel, or volume of fuel. However, incorporation of the reel necessarily implicates the hose on the reel, and thus also the size, length, and performance of the hose.

To perform flow calculations as in *Dr. Rodgers’ model*, there must be assumptions about how much fuel and the time period over which it is delivered. Dr. Rogers set forth expected fuel volumes for different “sizes” of jobs, with additional reference to underlying supporting documentation. Ex. 2011, ¶137; Ex. 2030. On the other hand, Dr. Durham advocates a narrow, limiting amount of fuel, asserting that

“fracturing jobs requiring even less fuel were routinely performed before the priority dates were [sic] Challenged Patents, and I have witnessed such smaller fracturing jobs in my experience in the field.” Ex. 1055 at ¶41. However, the job Dr. Durham witnessed did not even require refueling. Ex. 2047 at 86:5-87:9.

Petitioner’s assertion that Dr. Rodgers’ model is irrelevant to whether a POSITA would combine the prior art (Reply at 14) is misplaced for several reasons. First, the prior art must be considered for all its teachings. *Henny Penny, supra*. Second, Petitioner’s ground requires incorporating Coxreels’ reel into the system of Van Vliet (Petition at 35).

Petitioner’s assertion that Dr. Rodgers’ model rests on numerous unsupported assumptions about parameters is also misplaced. Reply at 15. Petitioner complains that Dr. Durham never said 700 ft hoses were required. This highlights that Petitioner is attempting to consider only selective teachings that support its narrative. As the ground requires incorporating Coxreels reel into Van Vliet, a hose that would be used with the reel is surely a pertinent teaching.

Petitioner also contends that Dr. Rodgers’ model ignores evidence of other refueling systems that have different length of hose, citing Ex. 1048. But this too, is to no avail, as the ground is not based on Ex. 1048 (AFD).

Moreover, the context of the prior art matters to a POSITA. In order to avoid aspects of the prior art that do not fit its conclusions, such as the brass inlet, AFLAS

seal, temperatures, and pressures, Petitioner argues that the ‘118 Patent claims do not recite such features. But this is of no moment. The ‘118 Patent claims led Petitioners to attempt to combine Van Vliet and Coxreels. To support this combination, the entire disclosure of the prior art must support the combination. *Panduit Corp. v. Dennison MFG., Co.*, 810 F.2d 1561, 1577-78 (Fed. Cir. 1987) (“The district court ... treated no claim, nor the entire prior art, nor any prior patent ‘as a whole,’ but selected bits and pieces from prior patents that might be modified to fit its legally incorrect interpretation.”).

Petitioner absurdly contends that Dr. Rodgers’ assumptions on the number of hoses that are open and the operating pressure are entitled to no weight. Reply at 16. Dr. Rodgers is at least a POSITA under Petitioner’s definition, which is uncontroverted. Ex. 2011 at ¶¶7-13, 66. His testimony is thus entitled to full weight. As Dr. Rodgers explained, the number of hoses open at one time is a safety concern and the more hoses that are open at once, the greater the safety risk. Ex. 2011 ¶142. Thus, the number of hoses open at once is a relevant consideration.

Petitioner’s understanding of Dr. Rodgers’ model is also fundamentally flawed as it is based on a different understanding of duty cycle and number of hoses open at once. Dr. Durham asserts that Dr. Rodgers’ 50% “max duty cycle” means that only 3 hoses were available, and that those 3 hoses are only available for 50%

of the time. This is demonstrably incorrect, as POR at 23 explicitly defines “duty cycle” and POR at 24 explains what a limit on the number of open hoses means.

Petitioner fails to appreciate that operation of a refueling system as in Van Vliet would inevitably require operating parameters and limitations, because operation at a “redline” configuration would be a safety risk. Ex. 2011 ¶146. Even Dr. Durham concedes that a designer would account for a safety factor or margin. Ex. 2047 at 21:6-23:3. Thus, while a system might be operated with more than 3 hoses open simultaneously, doing so would increase safety risk. Ex. 2011 ¶142.

Similarly, pump pressure should be limited to limit the rate at which fuel would leak or spray if a hose or hoses is/are damaged. While Van Vliet might have shut-off valves or containment pans, Van Vliet does not teach that these features mitigate the type or severity of a spill or leak, such as fuel spraying into the air onto an operator or a hot surface. Dr. Durham agrees that the higher the hose pressure, the more fuel that would leak, all else being equal. Ex. 2047 at 90:7-18. In that case, shutting off the pump or closing a shut-off valve could not address fuel spray in the way that limiting system pressure would because shutting off the pump or closing a shut-off valve would only occur after the leak sprung (assuming the system or operators even timely detect it). In contrast, limiting the pressure in the system to begin with would limit leaking when the leak occurs.

IV. GROUNDS 2, 2A, AND 3: SHOAP DOES NOT TEACH A HOSE HAVING A TUBE AND A SLEEVE CIRCUMSCRIBING THE TUBE

Petitioner's contention that PO does not dispute that a POSITA could have formed the wired hoses of *Shoap* using a separate tube and sleeve circumscribing it is misplaced. Reply at 18. PO explicitly addressed this. POR at 28.

Additionally, whether a POSITA *could have* done that does not establish obviousness. A reason for combining must exist.” *Virtek Vision Int'l v. Assembly Guidance Sys.*, 97 F.4th 882, 888 (Fed. Cir. 2024). Petitioner fails to provide a reason why a POSITA would have modified Shoap's conduit to be two thinner concentric conduits. Contrary to Petitioner's position now that the Petition noted that separate protection sleeves for hoses were well-known and commercially available at the relevant time, the ground does not rely on that. See Petition at 48-49. Nowhere in the petition does Petitioner explain with any particularity that separate protection sleeves for hoses were well-known and commercially available at the time of the '118 Patent or explain how this would prompt a POSITA to make the modification. Rather, Petitioner advanced the argument that the “arrangement would be merely an obvious matter of design choice².” Petitioner cited to Dr. Durham's expert report,

² PO notes that the Petition contains no explanation or reasoning given in support of this assertion either.

but arguments must not be incorporated by reference from one document into another document. 37 CFR § 42.6(a)(3).

Petitioner also again wrongly contends that Haile supports its position. Reply at 18. As PO has pointed out, the features Petitioner relies upon in Haile do not predate the '118 Patent. POPR at 40-41.

V. GROUNDS 2 AND 2A SHOULD BE SEPARATELY DISMISSED AS TO CLAIM 7.

Petitioner states, “neither the Petition nor Dr. Durham relies on *Shoap*’s ‘slip ring assembly 1372’ for any element of the ‘118 Patent claims.” Reply at 19. This begs the question, upon what connector does Petitioner’s ground rely? Petitioner’s connector is *ex nihilo*. Petitioner has improperly used “design choice” as a surrogate for this claim feature. *Fanduel, Inc. v. Interactive Games LLC*, 966 F.3d 1334, 1343-1344 (Fed. Cir. 2020). See also MPEP § 2144 (“Simply stating the principle (e.g., ‘art recognized equivalent,’ ‘structural similarity’) without providing an explanation of its applicability to the facts of the case at hand is generally not sufficient to establish a prima facie case of obviousness.”).

Moreover, “a reason for combining must exist.” *Virtek Vision, supra*. Petitioner fails to explain any reason that would prompt a POSITA to mount connectors on the reels as claimed. The Petition only states that it would be design choice. Petition at 65. Neither the Petition nor Reply provide any reason that would prompt a POSITA to use a connector in Van Vliet and to do so in the claimed

location. As this is not taught, Petitioner has obviously resorted to impermissible hindsight.

VI. GROUND 2 SHOULD BE SEPARATELY DISMISSED AS TO CLAIM 11

Apparently unable to address the substance of PO's argument, PO again resorts to accusations of bodily incorporation, alleging that many fabric covered hoses, or fabric protected hose sleeves were commercially available at the time of the '118 Patent, and were part of a finite set of known options for protecting hoses from damage³. Reply at 21. Notably, Petitioner's ground does not list any of the prior art upon which Petitioner now alleges.

Petitioner fails to provide even a single citation to its Petition at which it relied on either of the Desihose website or the Rhino Sleeve website for Ground 2. Nor is Desihose or Rhino Sleeve listed as a prior art reference for Ground 2. This is likely because Desihose is designated as a fuel injection hose, and Rhino Sleeve does not even qualify as prior art. POR at 33. "It does not suffice to simply be known. A reason for combining must exist." *Virtek Vision, supra*.

VII. SECONDARY CONSIDERATIONS

³ Petitioner asserts that "PO does not dispute" this. This is false. Among other arguments, PO explicitly stated "Petitioner does not explain what those finite options are." PO Response at 32.

Concerning nexus, Dr. Durham conducted an in-person inspection of a representative one of PO Fuel Automation Station's refueling units on July 25, 2024, including taking pictures and observing operation of the unit, which was prior to the completion of Dr. Durham's supplemental declaration dated August 26, 2024 and the filing of Petitioner's Reply served on August 28, 2024. Ex. 1055 at 24; Reply at 28. Petitioner thus had opportunity to determine *in persona* whether Fuel Automation Station's refueling unit contained the novel features of the '118 Patent claims. Yet, Petitioner did not argue that its inspection revealed any claim features missing from PO's unit.

VIII. CONCLUSION

For the foregoing reasons and the reasons in Patent Owners Response, PO respectfully submits that Petitioner has not established by preponderance of evidence that any claims are unpatentable.

Respectfully Submitted,

CARLSON, GASKEY & OLDS, P.C.

Dated: October 9, 2024

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STATEMENT OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(b)(1), the undersigned hereby certifies that the foregoing document is produced using a 14-point Times New Roman font and contains 5,233 words (excluding a table of contents, table of authorities, certificate of service, and appendix of exhibits), which is fewer than the 5,600 words permitted by PTAB rules. Counsel relies on the word count of the computer program used to prepare the document.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on October 9, 2024, 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

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