

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 No. IPR2023-01236
Patent 10,815,118

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,815,118**

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List of Exhibits

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EX1001	U.S. Patent No. 10,815,118 to Shock (“the ’118 Patent”)
EX1002	CV of Dr. Robert A Durham, PE, FIEEE
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EX1004	U.S. Patent Pub. No. 2011/0197988 to Van Vliet et al. (“ <i>Van Vliet</i> ”)
EX1005	Coxreels 1125 Series Hand Crank and Motorized Hose Reels, https://web.archive.org/web/20140408035634/http://www.coxreels.com/products/hand-crank/1125-series (Apr. 08, 2014) (“ <i>Coxreels</i> ”)
EX1006	U.S. Patent No. 7,819,345 to Shoap (“ <i>Shoap</i> ”)
EX1007	CLAMPS Accessories, https://web.archive.org/web/20130702084457/http://www.hosecraftusa.com/accessory-category/Hose_Clamps (Jul. 02, 2013) (“ <i>Hosecraft</i> ”).
EX1008	File History of ’118 Patent
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EX1011	Claim Listing
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EX1014	U.S. Patent Pub. No. 2007/0181212 to Joe Fell (“ <i>Fell</i> ”)
EX1015	U.S. Patent Pub. No. 2008/0223482 to Dagmar Hockner (“ <i>Hockner</i> ”)
EX1016	Michael Morton, “Unlocking the Earth: A Short History of Hydraulic Fracturing,” GEO ExPro, Vol. 10, No. 6, December 2013 (https://geoexpro.com/unlocking-the-earth-a-short-history-of-hydraulic-fracturing/) (last accessed July 17, 2023)
EX1017	Frac Shack “Technology” Page, https://web.archive.org/web/20150711214455/http://www.fracshack.com/technology (archived on July 11, 2015) (last accessed July 17, 2023)
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EX1019	B.A. Wells and K.L. Wells. “Shooters – A “Fracking” History.” American Oil & Gas Historical Society, https://aoghs.org/technology/hydraulic-fracturing (last accessed July

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EX1023	Bourgoyne, A. T., Jr., K. K. Millheim, M. E. Chenevert and F. S. Young, Jr. (1986). <u>Applied Drilling Engineering</u> , Society of Petroleum Engineers
EX1024	Vassiliou, M. S. (2018), <u>Historical dictionary of the petroleum industry</u> , Rowman & Littlefield
EX1025	U.S. Patent Application Publication No. 2013/0306322 to Sanborn <i>et al.</i> entitled “System and Process for Extracting Oil and Gas by Hydraulic Fracturing” (“ <i>Sanborn</i> ”)
EX1026	U.S. Patent Publication No. 2012/0255734 to Coli <i>et al.</i> (“ <i>Coli</i> ”) entitled “Mobile, Modular, Electrically Powered System for Use in Fracturing Underground Formations”
EX1027	U.S. Patent No. 4,187,962 to Henry <i>et al.</i> (“ <i>Henry</i> ”)
EX1028	Excerpts from Prosecution History of U.S. Patent App. 15/290304
EX1029	U.S. Patent No. 10,882,732 to Haile <i>et al.</i> (“ <i>Haile</i> ”)
EX1030	Archived Designation Ltd. Website, http://web.archive.org/web/20160818200712/http://www.desihose.com/default.aspx , (archived on August 18, 2016) (last accessed on August 4, 2023).
EX1031	Archived Designation Ltd. Website, Brent Oil/Fuel Hose, http://web.archive.org/web/20160713193942/http://www.desihose.com/viewproduct.aspx?pid=192 , (archived on July 13, 2016) (last accessed on August 4, 2023).
EX1032	Archived Rhino Sleeve Website, http://web.archive.org/web/20161025131730/http://www.rhinosleeve.com/ , (archived on October 25, 2016) (last accessed on August 4, 2023).
EX1033	Archived Rhino Sleeve Website, HT Rhino Sleeve HT, http://web.archive.org/web/20180815044032/http://rhinosleeve.com/rhino-sleeve-ht/ , (archived on August 15, 2018) (last accessed on August 4, 2023).
EX1034	Archived Rhino Sleeve PDF Spec Sheet, http://web.archive.org/web/20180815043704/http://rhinosleeve.com

	/wp-content/uploads/2018/05/rhino-sleeve-ht-2-3-26may2018.pdf , (archived August 15, 2018) (last accessed on August 4, 2023).
EX1035	Archived Coxreels Website, Oil, http://web.archive.org/web/20151225184335/http://www.coxreels.com/industries/oil/ , (archived on December 25, 2015) (last accessed on August 4, 2023).
EX1036	Archived Hosecraft U.S.A. Home Page, https://web.archive.org/web/20130630092921/http://www.hosecraftusa.com/ , (archived on June 30, 2013) (last accessed on August 4, 2023).

I. INTRODUCTION

Permian Global, Inc. and Manticore Fuels, LLC submit this Petition for *inter partes* review (“IPR”) of Claims 1-18 of U.S. Patent No. 10,815,118 (the “’118 Patent”) under 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42.100 *et seq.* Petitioners respectfully request institution of IPR and a finding that all challenged claims are unpatentable.

II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(A)(1)

A. Real Party-in-Interest under 37 C.F.R. § 42.8(b)(1)

The real parties in interest are Petitioner Permian Global, Inc. and Petitioner Manticore Fuels, LLC (collectively “Petitioners”), and further may include one or more of the following entities: Manticore Fuel Holding, LLC; Murphy Street Holdings, LLC; Permian Partners Inc.; Manticore Resources & Logistics, LLC; Bechra Holdings LLC; and Ethos Capital Management, LLC. No other parties exercised or could have exercised control over this Petition; no other parties funded or directed this Petition. *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48759-60.

B. Related Matters under 37 C.F.R. § 42.8(b)(2)

Fuel Automation Station, LLC has asserted the ’118 Patent against Petitioners in a co-pending litigation, *Fuel Automation Station, LLC. v. Permian Global, Inc.*, Case No. 1-22-cv-00801 (WDTX Aug. 10, 2022). The Original Complaint in that

litigation was filed on Aug. 10, 2022.

C. Lead and Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Petitioners provide the following designation of counsel.

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D. Service Information under 37 C.F.R. § 42.8(b)(4)

A copy of this entire Petition, including all Exhibits, are being served by FEDERAL EXPRESS, costs prepaid, to the address of the attorney or agent of record at the USPTO:

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A Power of Attorney is filed concurrently herewith under 37 C.F.R. § 42.10(b).

III. STANDING AND FEES

Standing: Petitioners certify that the '118 Patent is eligible for IPR and that none of Petitioners or any other potential real parties in interest are barred or estopped from requesting IPR of the '118 Patent.

Fees: The Office is authorized to charge any fees that become due in

connection with this Petition to Deposit Account No. 02-0384 and any additional fees due.

IV. REQUIREMENTS UNDER 37 C.F.R. § 42.104

A. Priority Date

The application that issued as the '118 Patent was filed on October 1, 2018, stating that it is a continuation of U.S. Application No. 15/290,304 filed on October 11, 2016. EX1001, Cover. Without conceding that the '118 Patent is entitled to that priority claim, Petitioners assume for the purposes of this Petition that the '118 Patent is entitled to a priority date of October 11, 2016.

B. Prior Art

Exhibit 1004—U.S. Patent Pub. No. 2011/0197988 to Van Vliet et al. (“*Van Vliet*”) was filed on Feb. 16, 2011 and issued on Aug. 18, 2011. EX1004, Cover. *Van Vliet* qualifies as prior art under at least 35 U.S.C. § 102(a)(1) and (a)(2).

Exhibit 1005—Coxreels 1125 Series Hand Crank and Motorized Hose Reels (“*Coxreels*”) was made available online at least as early as Apr. 8, 2014 as explained in the Frank-White Affidavit I. *See* EX1009. *Coxreels* qualifies as prior art under at least 35 U.S.C. § 102(a)(1).

Exhibit 1006—U.S. Patent No. 7,819,345 to Shoap (“*Shoap*”) was filed on Sept. 16, 2008 and issued on Oct. 26, 2010. EX1006, Cover. *Shoap* qualifies as prior art under at least 35 U.S.C. § 102(a)(1) and (a)(2).

Exhibit 1007—CLAMPS Accessories (“*Hosecraft*”) was made available online at least as early as July 2, 2013 as explained in the Frank-White Affidavit II. See EX1010. *Hosecraft* qualifies as prior art under at least 35 U.S.C. § 102(a)(1).

C. Identification of Challenge, Statement of Precise Relief Requested

Petitioners request IPR of Claims 1-18 based on the following grounds:

Ground	Type	Summary
1	§§ 102/103	Claims 1-3 are anticipated by and/or rendered obvious by <i>Van Vliet</i> .
1A	§ 103	Claims 1-3 are rendered obvious by <i>Van Vliet</i> in view of <i>Coxreels</i>
2	§ 103	Claims 4-18 are rendered obvious by <i>Van Vliet</i> in view of <i>Shoap</i>
2A	§ 103	Claims 4-9 and 15-18 are rendered obvious by <i>Van Vliet</i> in view of <i>Coxreels</i> and <i>Shoap</i>
3	§ 103	Claims 12-13 are rendered obvious by <i>Van Vliet</i> in view of <i>Shoap</i> and <i>Hosecraft</i>

Submitted with this Petition is a declaration of Dr. Robert A Durham, PE, FIEEE (EX1003).

D. Institution is Proper under § 314(a)

The factors in *General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (P.T.A.B. Sept. 6, 2017) favor institution. This is the first and only petition challenging the ’118 Patent.

The factors in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 6 (P.T.A.B. Mar. 20, 2020) (“*Fintiv*”) (precedential) also favor institution. Pursuant to *Fintiv* Factor 6, the merits of this petition are compelling and outweigh any

inefficiencies of parallel litigation. *Fintiv* at 14-15. *Fintiv* Factors 2 and 3 also strongly favor institution. The parallel litigation in the Western District of Texas is just beginning; no trial date or other pretrial schedule is set, and the Court has not yet set any scheduling conference. The parties are in the early stages of discovery and no claim construction activities or disclosure of infringement or invalidity contentions have occurred. Regarding Factor 4, given the early stage of the district court litigation, it would be premature to conclude that the issues raised in this proceeding will overlap with those in the district court. Moreover, if Patent Owner raises § 314(a) arguments in a Preliminary Response, Petitioners respectfully request the opportunity to reply prior to institution, in order to address any update in the district court schedule and whether a *Sand Revolution* stipulation would be appropriate. Regarding *Fintiv* Factor 1, no party in the District Court has requested a stay, and the Board does not speculate on how a district court will treat a motion to stay. *See, e.g., VMware, Inc. v. Intell. Ventures I LLC*, IPR2020-00859, Paper 13, Institution Decision, at 12 (P.T.A.B. Nov. 5, 2020) (informative). Finally, since Petitioners and Patent Owner are all parties to the co-pending litigation, *Fintiv* Factor 5 is, at worst, neutral and need not be considered as a basis for discretionary denial. *Cisco Sys., Inc. v. Ramot at Tel Aviv Univ. Ltd.*, IPR2020-00122, Paper 15, Institution Decision, at 10 (P.T.A.B. May 15, 2020) (APJ Crumbley, dissenting).

E. Institution is Proper Under § 325(d) and *Advanced Bionics*.

The Board should not deny institution under 35 U.S.C. §325(d) under the *Becton* factors (IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017)) and the two-step framework established in *Advanced Bionics* (IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential)).

Under *Advanced Bionics*, the Board must first decide whether the same or substantially the same art or argument were presented to the Office during the prosecution of the '118 Patent. *Becton* factors (a), (b), and (d) are relevant to this inquiry. If the Board finds that prong is satisfied, then the Board must determine whether “the petitioner has demonstrated that the Office erred on a manner material to the patentability of the challenged claims.” *Becton* factors (c), (e), and (f) are relevant to this inquiry.

1. *Advanced Bionics* Step One (*Becton* Factors (a), (b), and (d))

This Petition does not merely present similar or substantially the same prior art or arguments. *Van Vliet* is the only reference asserted by this Petition that was reviewed by the Examiner—all other asserted prior art references were not disclosed or reviewed during prosecution of the '118 Patent. In addition to the new prior art in this Petition, the Office will also have the expert declaration of Petitioner's Expert, Dr. Robert A Durham, PE, FIEEE, which the Examiner didn't have. This report will bring new evidence to the Office's attention which was not considered or reviewed

during prosecution of the '118 patent.

The Board has held that combining a secondary reference that was not previously considered by the Examiner with a primary reference that was considered by the Examiner favors institution of IPR. *Oticon Med. v. Cochlear Limited*, IPR2019-00975, Paper 15 at 18–20; *Qualcomm Inc. v. Monterey Rsch. LLC*, IPR2021-00120, Paper 17 at 18–19 (June 8, 2021). Almost every ground in this Petition combines *Van Vliet* with prior art that was not considered during prosecution or disclosed in IDS. Therefore, the combinations of the asserted art have not been previously considered by the Examiner. In the Notice of Allowance (and throughout prosecution), the Examiner made no reference to *Coxreels*, *Shoap*, or *Hosecraft*. EX1008. This further favors institution because the asserted combinations of prior art references render the claimed invention obvious.

Furthermore, the asserted art is not cumulative of the prior art presented to the Examiner during prosecution. “A reference is cumulative when it ‘teaches no more than what a reasonable Examiner would consider to be taught by the prior art already before the PTO.’” *Regeneron Pharms. Inc. v. Merus N.V.*, 864 F.3d 1343, 1350 (Fed. Cir. 2017); see *Oticon Med. v. Cochlear Limited*, IPR2019-00975, Paper 15 at 18–20 (PTAB Oct. 16, 2019) (finding that the secondary reference was not cumulative of the primary reference because the structure and purpose of the grooves were different in the two references). *Coxreels* describes a hose reel having a flow path in

the reel, which the Examiner found to not be disclosed in the cited art. *See* EX1005, 1; EX1008, 23-24. *Shoap* and *Hosecraft* each, respectively, include detailed descriptions of a wired hose or a steel band clamp for a hose, neither of which were highlighted by the Examiner in the cited art. *See* EX1006, FIG. 1A; EX1007, 5, 12. Thus, those references go beyond the teachings of *Van Vliet* and the other prior art of record and are therefore not cumulative.

Because at least four of the five grounds in this Petition include references that were never presented to the Examiner, and because those references are not cumulative of prior art considered, this Petition is not presenting same or substantially similar arguments. Therefore, IPR should be instituted.

2. Advanced Bionics Step Two (*Becton* Factors (c), (e), and (f))

Even if it were found that the asserted art presents the same or substantially similar argument previously considered, the Office erred in failing to consider *Coxreels* and *Shoap* in a manner “material to the patentability of the challenged claims” of the ’118 Patent. In *Oticon*, the petition was granted because the secondary reference was not considered by the Examiner, and the reasonable Examiner would have considered the reference when examining the disputed patent. *Oticon Med.*, IPR2019-00975, Paper 15 at 18–20. A reasonable Examiner should have viewed the *Coxreels* and *Shoap* references prior to granting the patent because they teach claim elements of the ’118 Patent. Combinations of *Van Vliet* with *Coxreels* and/or *Shoap*

render the '118 patent claims obvious, which materially affects the patentability of the claims. Therefore, the Office erred in failing to consider the *Coxreels* and *Shoap* references in combination with *Van Vliet*.

Additionally, regarding at least Ground 1 of the Petition, although *Van Vliet* was of record in the '118 Patent's prosecution, it is not clear that the Examiner substantively considered its content relative to the '118 Patent's claims. The Examiner never cited any specific paragraph or figure of *Van Vliet* at any time during the '118 Patent's prosecution. Moreover, the '118 Patent's parent application previously had been deemed allowable over *Van Vliet*, but based on limitations not recited in most of the '118 Patent's claims. EX1028 (excerpts from file history for U.S. Patent App. No. 15/290,304, including Sept. 13, 2017 office action citing *Van Vliet*, and May 31, 2018 notice of allowance referencing "level sensors hard wired through the reels" and "communication lines being routed through a spindle" of the reels in reasons for allowance);¹ compare EX1001, Claims 1-3 & 10-18. Finally,

¹ See also EX1028, 12 (May 31, 2018 summary of examiner interview noting that a prior version of the claims reciting that the communication line is "routed through [the reel] is broad enough to include the communication line running within the hose being fed through the reels" and requiring further amendment for allowance).

even if the Examiner considered *Van Vliet*, its disclosure of a flow passage “running through a respective one of the reels” may not have been immediately apparent from *Van Vliet*’s figures since it is made clear in the text as a further refinement of the arrangement depicted. *Compare* EX1004, FIG. 1 (schematically depicting hoses 24 connected to reels 30) *with id.*, [0022] (“The pan or pans may be positioned to catch fluids leaking from each or both manifolds, **and hose reels 30**”).² The Examiner never cited this nor any other specific portions of *Van Vliet*’s specification at any time during prosecution. Therefore, the Examiner likely failed to appreciate *Van Vliet*’s teaching of a flow passage “running through a respective one of the reels”.

Thus, the Office should not deny institution under 35 U.S.C. § 325(d).

V. OVERVIEW OF THE ’118 Patent

A. Summary of ’118 Patent Subject Matter

The ’118 Patent describes a distribution station for distributing fuel or other fluids to equipment at a hydraulic fracturing site. EX1001, 1:28-37, 1:66-2:10. More specifically, the ’118 Patent is directed to a distribution station having a pump, manifolds, reels, and hoses located on a mobile trailer. EX1001, 1:28-37. The ’118 Patent claims various combinations of known elements for fuel distribution to reach predictable results; these elements and predictable results would have been known

² All emphasis herein is added unless otherwise noted.

in the art at the time of the '118 Patent's priority date. EX1003, ¶¶42-43; *see also* EX1001, Claims 1-18. Examples of known elements claimed by the '118 Patent include a mobile trailer, a pump, a manifold, a plurality of reels, a plurality of hoses (including wired hoses), a plurality of valves, a plurality of fluid level sensors, and a controller, among others. EX1003, ¶43; *see also* EX1001, Claims 1-18.

Claim 1 is representative of the claims of the '118 Patent and is reproduced below:

1. A distribution station comprising:

- a mobile trailer;
- a pump on the mobile trailer;
- a manifold on the mobile trailer and connected with the pump;
- a plurality of reels on the mobile trailer;
- a plurality of flow passages, each said flow passage being connected to the manifold and running through a respective one of the reels;
- a plurality of hoses, each said hose being connected with a respective one of the flow passages via a respective one of the reels;
- a plurality of valves on the mobile trailer, each said valve situated between the manifold and a respective different one of the reels and being operable to control fluid flow through a respective one of the flow passages;
- a plurality of fluid level sensors, each said fluid level sensor being connected or connectable with a respective different one of the hoses; and

a controller configured to operate the valves responsive to fluid level thresholds to control fluid flow to the hoses.

B. Claim Listing

A claim listing is included as EX1011.

C. Relevant Prosecution History of the '118 Patent

The application that would issue as the '118 Patent, Patent Application No. 16/148,403 (the "'403 Application"), was filed on Oct. 1, 2018. EX1001, Cover. The Examiner issued a Notice of Allowance on August 18, 2020 after one non-final office action in which only double-patenting rejections over other patents owned by Patent Owner were made. EX1008, 16-25. Patent Owner made no claim amendments or substantive arguments in response to those rejections, instead overcoming them with terminal disclaimers. EX1008, 57.

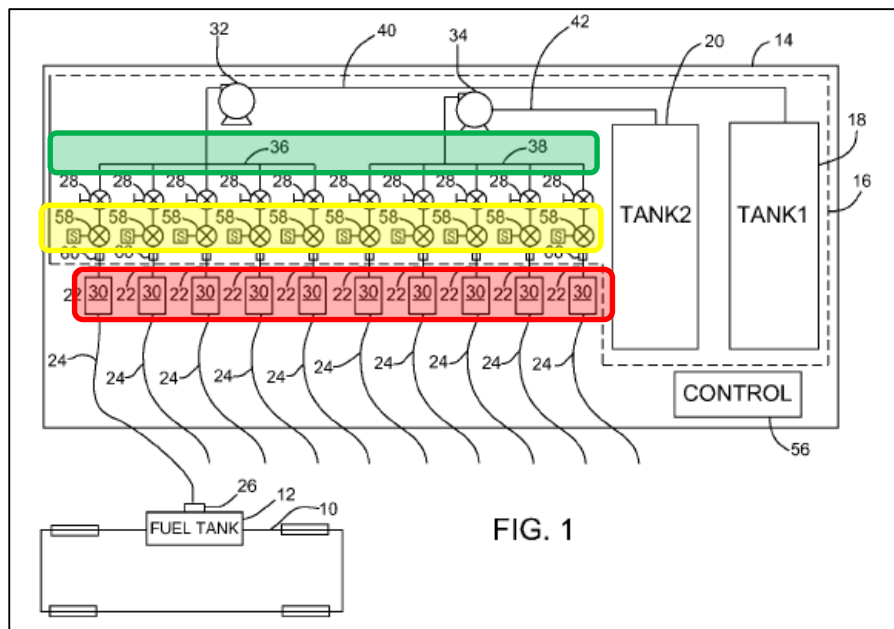
In the Notice of Allowance, the Examiner stated in the Reasons for Allowance:

[T]he cited documents do not disclose, in combination with the claimed invention as a whole, 'a plurality of flow passages, each said flow passage being connected to the manifold and running through a respective one of the reels; a plurality of hoses, each said hose being connected with a respective one of the flow passages via a respective one of the reels; a plurality of valves on the mobile trailer, each said valve situated between the manifold and a respective

different one of the reels and being operable to control fluid flow through a respective different one of the reels and being operable to control fluid flow through a respective one of the flow passages.

EX1008, 23-24.

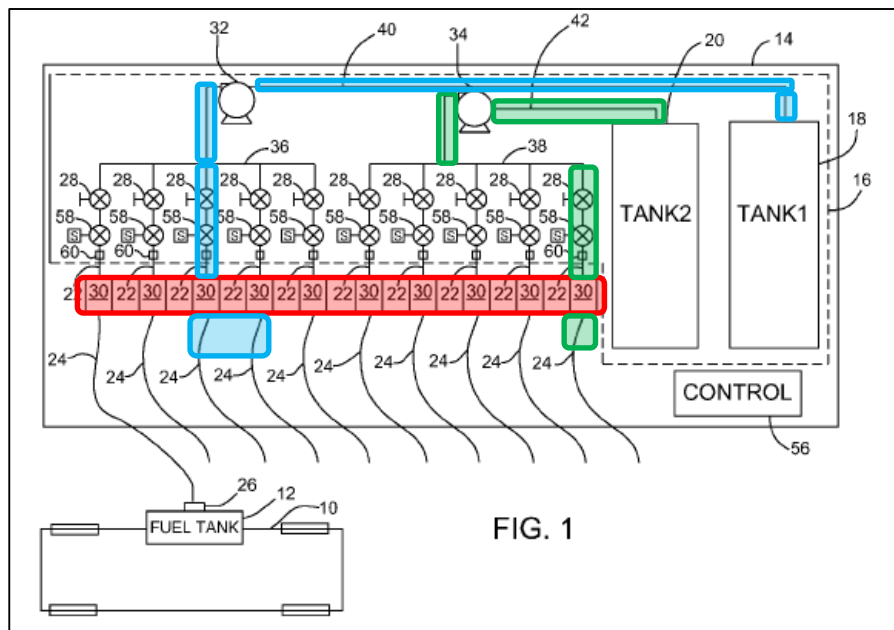
However, as explained further in Section VIII. below, the limitations relied on by the Examiner in allowing the '118 Patent claims *were* known in the art. *See supra* Section VIII; *see also* EX1003, ¶¶103-261. For example, *Van Vliet* discloses “a plurality of valves on the mobile trailer, each said valve situated between the manifold and a respective different one of the reels and being operable to control fluid flow through a respective different one of the reels and being operable to control fluid flow through a respective one of the flow passages”:



EX1004, FIG. 1 (annotated); *see also* EX1003, ¶¶47-49. As depicted above, *Van Vliet*

discloses a fuel delivery system 14 on a mobile trailer that includes manifolds 36 and 38 (green), hoses 24 on reels 30 (red), and a plurality of valves 58 (yellow). EX1004, [0008], [0014]. Each of the valves 58 is illustrated schematically downstream of a manifold 36 or 38 and upstream of a reel 30. *Id.*, FIG. 1. Valves 58 “control fluid flow through the hose 24 . . . to permit independent operation of each hose 24.” *Id.*, [0015].

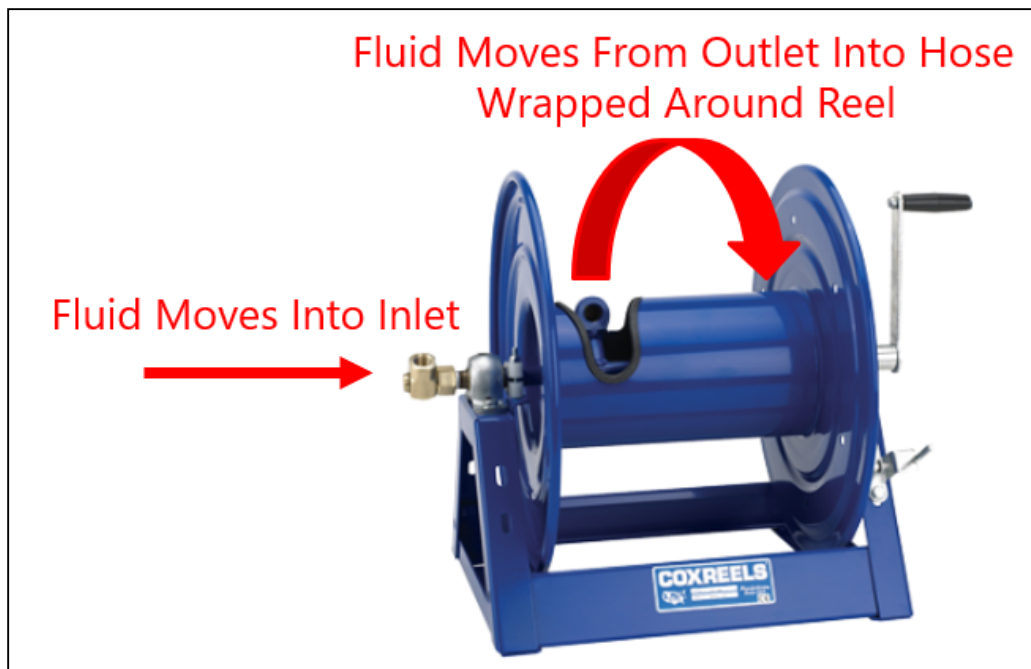
Van Vliet also discloses “a plurality of flow passages, each said flow passage being connected to the manifold and running through a respective one of the reels”:



EX1004, FIG. 1 (annotated: reels 30 in red and example flow passages in blue and green). In particular, *Van Vliet* discloses flow passages connected to the manifold that each include at least: line 40 or 42; a fluid outlet 22; and the connections between

each set of an outlet 22, a valve 28, a valve 58, and a hose 24 shown in FIG. 1. As shown above and described in further detail in this Petition, each of these flow passages passes through a reel 30. EX1004, Fig 1. EX1003, ¶¶50-52; *see also* EX1004, Fig 1.

Moreover, *Coxreels* describes a hose reel with an internal flow passage as depicted below:



EX1005, 1 (excerpted and annotated to show path of fluid). Thus, a person of skill in the relevant art would have understood that the '118 Patent presents no novel or non-obvious advance over the prior art. EX1003, ¶¶53-54.

D. Level of Ordinary Skill in the Art

As of the earliest claimed priority date, a person of ordinary skill in the art

(“POSITA”) would have 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*. See EX1003, ¶¶75-78.

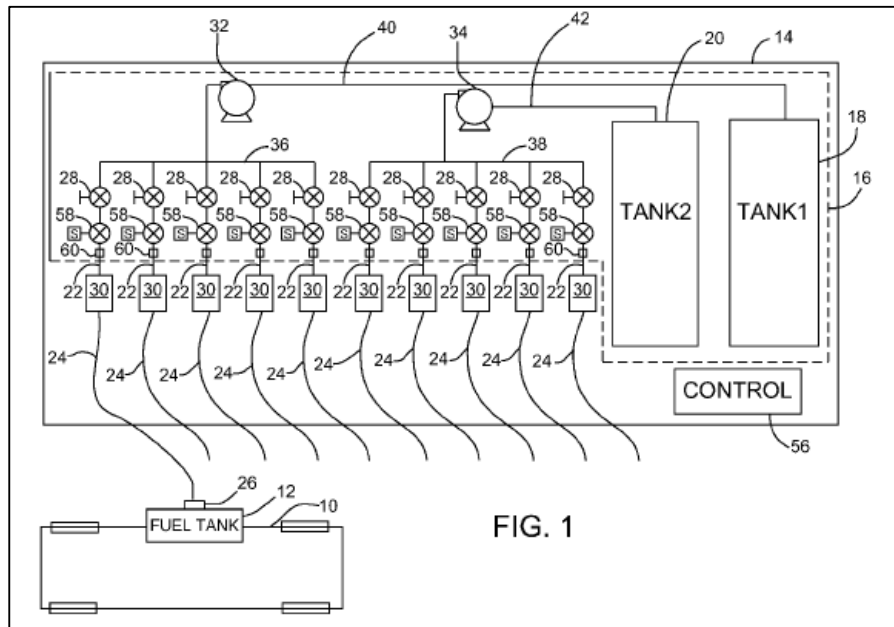
VI. SUMMARY OF PRIOR ART

As explained by Dr. Robert A Durham, PE, FIEEE in the attached declaration (EX1003), the subject matter of the claims of the ’118 Patent was well known before the priority date of the ’118 Patent. EX1003, ¶¶103-261. In addition to the background knowledge that a POSITA would have brought to bear on the subject matter discussed in the ’118 Patent, the following prior art demonstrates that distribution systems within the scope of the challenged claims would have been well-known and obvious to a POSITA. *Id.*

A. *Van Vliet* (EX1004)

Van Vliet relates to “[f]uel delivery systems and methods,” and more specifically, to “[a] fuel delivery system and method” for equipment used in well fracturing operations “for reducing the likelihood that a fuel tank of [such] equipment ... will run out of fuel.” EX1004, Abstract, [0003]; *see also* EX¶¶80-86.

Van Vliet describes “a fuel delivery system [that] may be contained on a single trailer,” and is depicted in FIG. 1. EX1004, [0014].



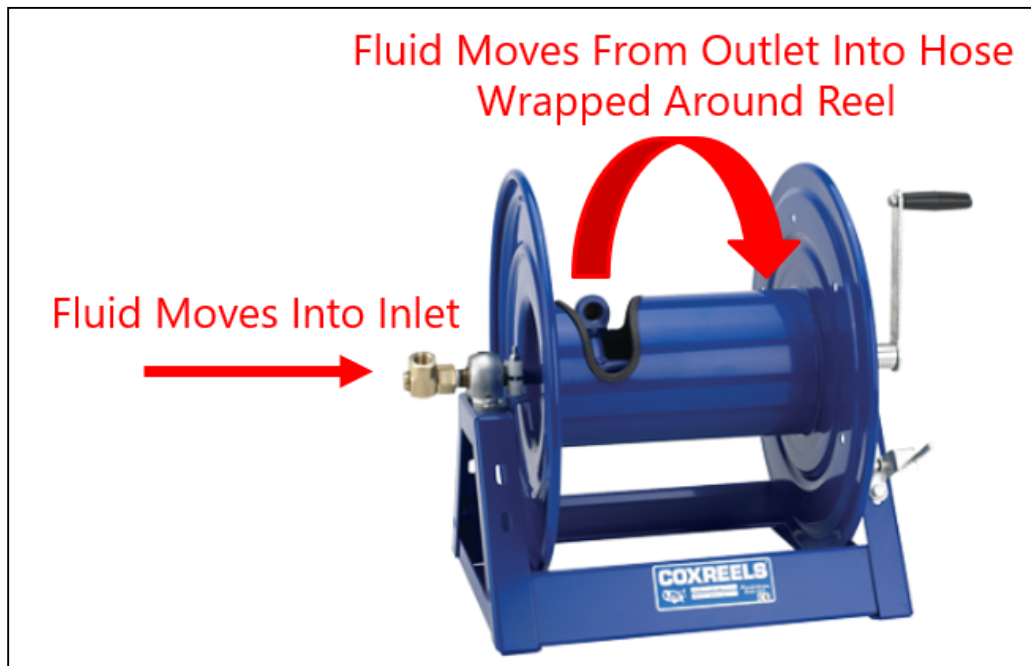
EX1004, FIG. 1.

In the above fuel delivery system 14, tanks 18 and 20 connect to pumps 32 and 34, which connect to manifold 36 and manifold 38 respectively. EX1004, FIG. 1. The manifolds connect to valves 28 and 58, which are in fluid communication with a plurality of hoses 24 via fuel outlets 22. *Id.* Each hose 24 is stored on a reel 30 and connects to a fuel tank 12. *Id.* Containment pans are provided beneath *Van Vliet*'s reels to collect leaking fluids from the reels. *See* EX1004, [0022]. *Van Vliet* notes 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.*, [0027]. *Van Vliet* was cited by the Examiner during prosecution of the ’118 Patent. *Id.*, Cover.

B. Coxreels (EX1005)

Coxreels is a website that was made available online at least as early as April 8, 2014, a full two years before the ’118 Patent’s claimed priority date of October 11, 2016, as explained in the affidavit of the Internet Archive’s representative. *See* EX1009; *see also* EX1003, ¶¶87-90. *Coxreels* describes the Coxreels 1125 Series hand crank and motorized hose reels, which were commercially available from Coxreels. EX1005.



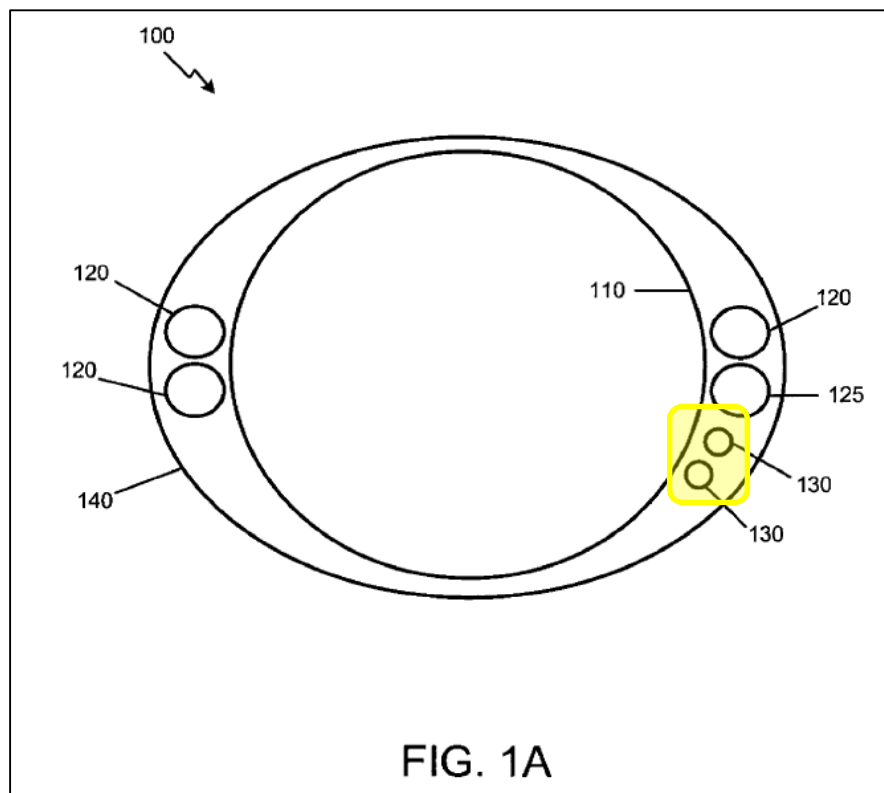
Id., (excerpted and annotated to show path of fluid).

A POSITA would have understood *Coxreels*’ reels include a flow path through the spindle of the reel. EX1005; EX1003, ¶¶91-92, 154-158. *Coxreels* was

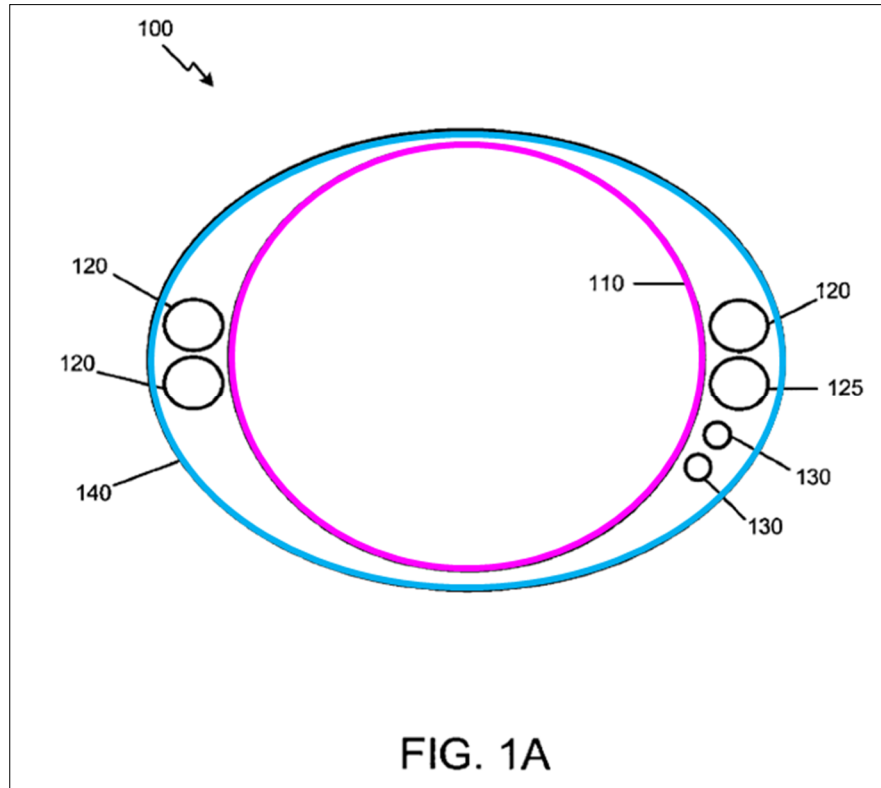
not prior art of record during prosecution of the '118 Patent. EX1001, Cover.

C. *Shoap* (EX1006)

Shoap is “in the field of electrical and fluid distribution.” EX1006, 1:18-20. More specifically, *Shoap* “describes the use of electrical wire associated with fluid conduit.” *Id.*; see also EX1003 ¶¶93-95. For example, *Shoap* discloses a hose having communication wires 130:



EX1006, FIG. 1A (annotated: cross-section of conduit 100 with communication wires 130 in yellow), 4:55-57. *Shoap*’s hose includes an inner conduit surface 110 (purple) and an outer conduit surface 140 (light blue):



EX1006, FIG. 1A (annotated), 4:51-5:3. The hose of *Shoap* functions to allow electricity and/or data to pass through wires between the inner conduit surface 110 and outer conduit surface 140 while fluid travels within the inner conduit surface 110. EX1006, 4:51-5:3. *Shoap* was not prior art of record during prosecution of the '118 Patent. EX1001, Cover.

D. *Hosecraft* (EX1007)

Hosecraft is a website that was made available online at least as early as July 2, 2013 as explained in the affidavit of the Internet Archive's representative. See EX1010; see also EX1003, ¶¶96-99. *Hosecraft* describes several clamps and fittings for custom hose assemblies, including a band clamp. EX1007. See EX1003, ¶¶100-

102.



EX1007. *Hosecraft*'s clamps and fittings are all designed for hose assemblies and used to hold together hose assemblies, particularly when attaching hoses to fittings or connectors. *Hosecraft*'s band clamp is made of "high carbon coated steel" or "stainless steel." *Id.* *Hosecraft* was not prior art of record during prosecution of the '118 Patent. EX1001, Cover.

VII. CLAIM CONSTRUCTION

For purposes of this Petition, Petitioners apply the ordinary and customary meanings of the claim terms.³ Express constructions are not required in this proceeding because the prior art invalidates the claims under any plausible construction. *See* EX1003, ¶55.

³ Petitioners reserve all rights to challenge the claims under §112 and/or seek claim constructions of certain terms in district court or any other venue.

VIII. ASSERTED GROUNDS OF INVALIDITY

A. Ground 1: Claims 1-3 are anticipated by and/or rendered obvious by *Van Vliet*⁴

1. Claim 1[p]: “A distribution station comprising:”

To the extent the preamble is limiting, *Van Vliet* discloses “[a] distribution station.” EX1004, [0003], [0014]. Specifically, *Van Vliet* discloses “a fuel delivery system [that] may be contained on a single trailer.” EX1004, [0014]; *see also* EX1003, ¶¶104-105.

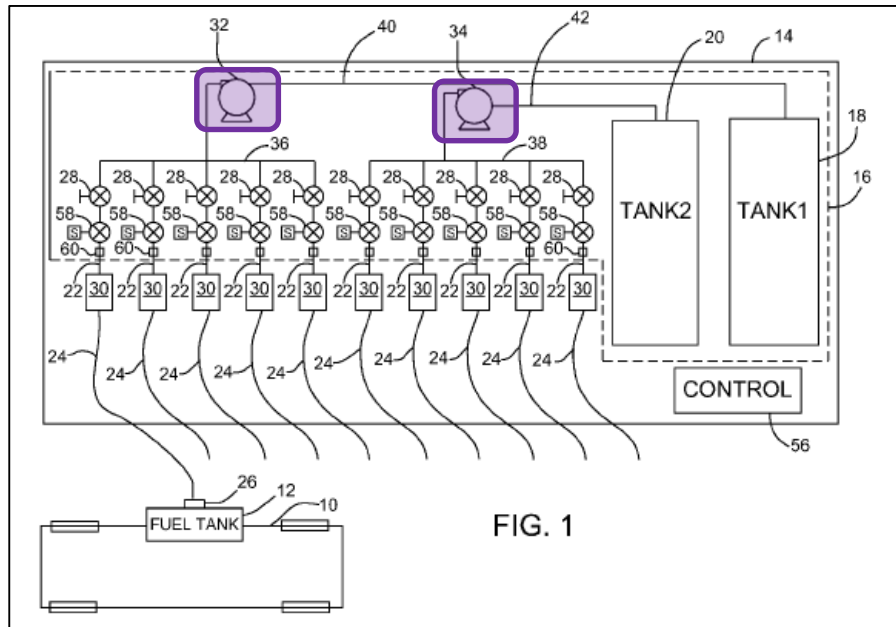
2. Claim 1[a]: “a mobile trailer;”

Van Vliet discloses that the fuel delivery system 14 “may be contained on a single trailer.” EX1004, [0003], [0014]; *see also* EX1003, ¶¶106-107.

3. Claim 1[b]: “a pump on the mobile trailer;”

As shown in FIG. 1 of *Van Vliet*, the fuel delivery system 14 includes tanks 18 and 20 that are each “connected to respective pumps 32, 34” (EX1004, [0016]):

⁴ *See* EX1003, ¶¶102-164.



EX1004, FIG. 1 (annotated: pumps in purple). Because pumps 32, 34 are part of the “fuel delivery system 14” that “may be contained on a single trailer,” either or both of pumps 32 and 34 are “a pump on the mobile trailer.” EX1004, [0008], [0014], FIG. 1; *see also* EX1003, ¶¶108-110.

4. Claim 1[c]: “a manifold on the mobile trailer and connected with the pump;”⁵

Van Vliet discloses that its fuel delivery system 14 includes “one or more

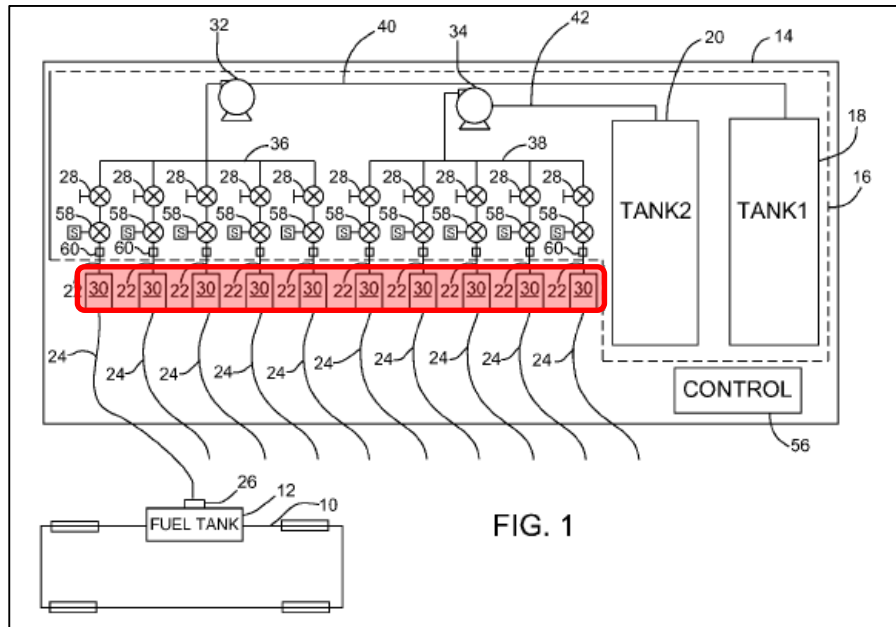
5 Petitioners have applied *Van Vliet* to the claimed “manifold” based on its *in*
haec verba disclosure of that element and Patent Owner’s allegations relating to
infringement. However, Petitioners do not concede that any other structure, even one

manifolds with associated pumps and fuel line or lines.” EX1004, [0003]. In the embodiment shown in FIG. 1, manifold 36 is connected to pump 32 and manifold 38 is connected to pump 34, all of which are depicted within the fuel delivery system 14. *Id.*, [0015], FIG. 1. Thus, a POSITA would understand that each of *Van Vliet*’s manifolds 36 and 38 are “a manifold on the mobile trailer and connected with the pump.” EX1004, [0015], FIG. 1; *see also* EX1003, ¶¶111-113.

5. Claim 1[d]: “a plurality of reels on the mobile trailer;”

In *Van Vliet*’s fuel delivery system, “[t]he hoses 24 are preferably stored on reels 30.” EX1004, [0015]; *see also* EX1003, ¶¶114-115. FIG. 1 below shows at least ten “reels 30” in the fuel delivery system 14:

having a schematic similar to that shown or described in *Van Vliet*, would be considered a “manifold” by a POSITA.



EX1004, FIG. 1 (annotated: reels 30 in red); *see also id.* at [0008], [0014].

6. Claim 1[e]: “a plurality of flow passages, each said flow passage being connected to the manifold and running through a respective one of the reels;”

Van Vliet describes that “each tank 18, 20 is connected to pump 32, 34 and then to respective manifolds 36, 38 via lines 40, 42.” EX1004, [0016]. Each of hoses 24 fluidly communicates with manifold 36 or 38 via a fluid outlet 22 and is stored on a reel 30. *Id.*, [0015-0016]. Fluid flow through the fluid outlet 22 to each hose 24 also may be controlled using valves 28 and/or 58. Therefore, *Van Vliet* discloses flow passages connected to the manifold that each include at least: line 40 or 42; a fluid outlet 22; and the connections between each set of an outlet 22, a valve 28, a valve 58, and a hose 24 shown in FIG. 1. *See* EX1003, ¶¶116-127.

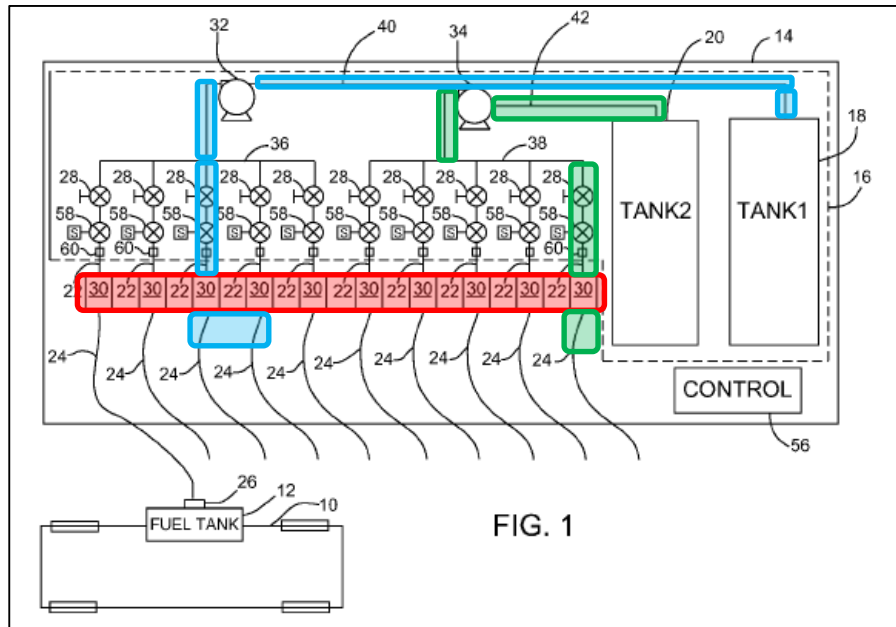
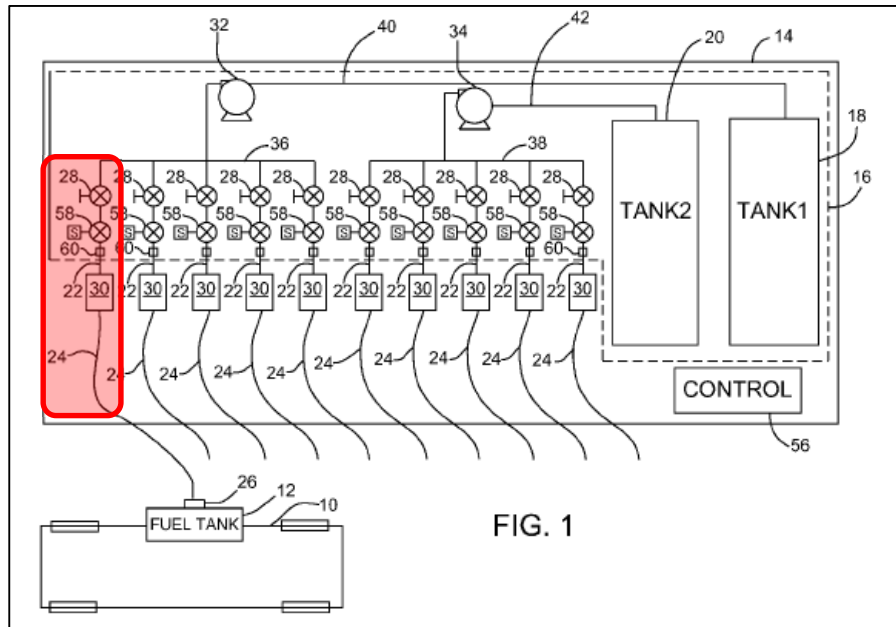


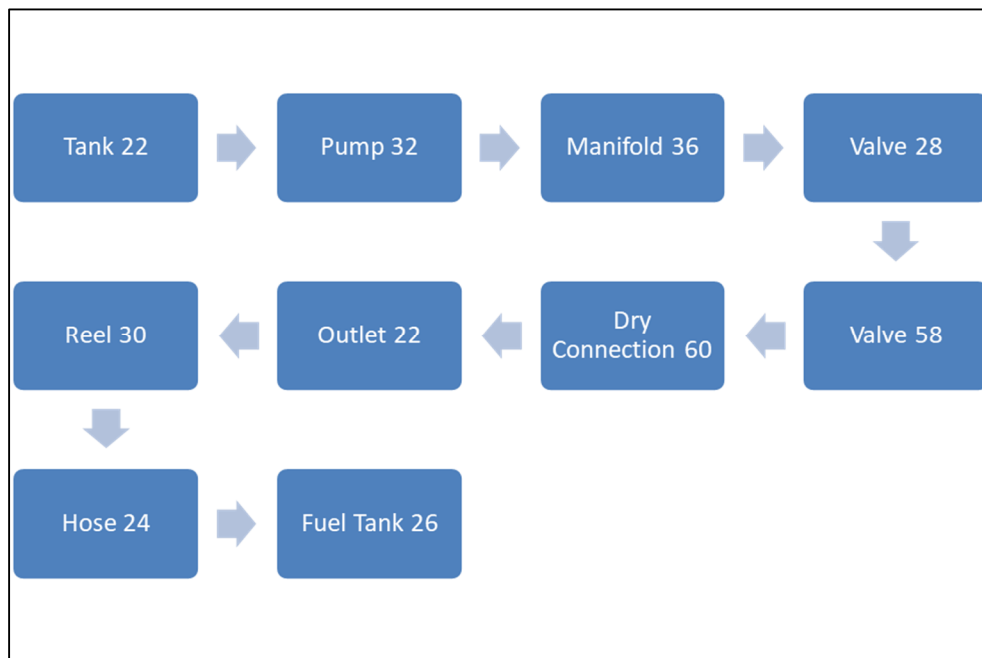
FIG. 1

EX1004, FIG. 1 (annotated: reels 30 in red and example flow passages in blue and green).

Further, *Van Vliet* discloses a plurality of hoses, with one hose 24 stored on and extending from each reel 30. See EX1004, [0015]. FIG. 1 of *Van Vliet* shows that the reels 30 are fluidly connected to the hoses and manifolds.



EX1004, FIG. 1 (annotated). In the annotated FIG. 1 above, a single fluid stream is annotated in red. A POSITA would have understood, based on this diagram, that the fluid flows as follows:



EX1003, ¶¶117-119. Accordingly, a POSITA would have understood that the reel

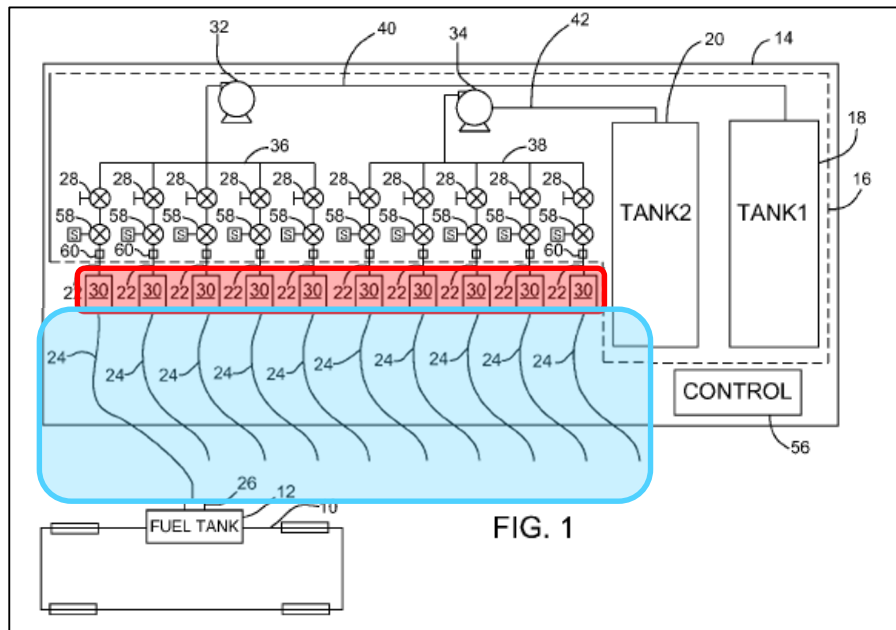
30 is part of the fluid stream, and, therefore, the flow passage passes through the reel. *See* EX1004, FIG. 1.⁶ The same is true for each of the streams identified in FIG. 1. *See* EX1004, FIG. 1. Delivery of fluid through this fluid stream would necessarily mean that the flow passages are fluidly connected to the reels and the manifolds. *See* EX1004, FIG. 1. For example, a reel typically used in the industry in this type of application at the time of the '118 Patent was the reel supplied by Coxreels described in *Coxreels*. EX1003, ¶122.

As shown above, each of these flow passages passes through a reel 30. *See* EX1004, FIG. 1. Indeed, *Van Vliet* states that the hose reels 30 may leak fluid, confirming that the reels include flow passages. EX1004, [0022] (“The pan or pans may be positioned to ***catch fluids leaking from*** each or both manifolds, and hose ***reels 30.***”). Thus, for at least the reasons discussed above, a POSITA would understand that these flow passages of *Van Vliet* pass through the reels. *See* EX1003, ¶¶124-127.

⁶ *See also* EX1028, 12 (summary of examiner interview in parent U.S. Patent App. 15/290,304, examiner explaining that the phrase “routed through” is broad enough to include a line running within the hose being fed through the reels).

7. Claim 1[f]: “a plurality of hoses, each said hose being connected with a respective one of the flow passages via a respective one of the reels;”

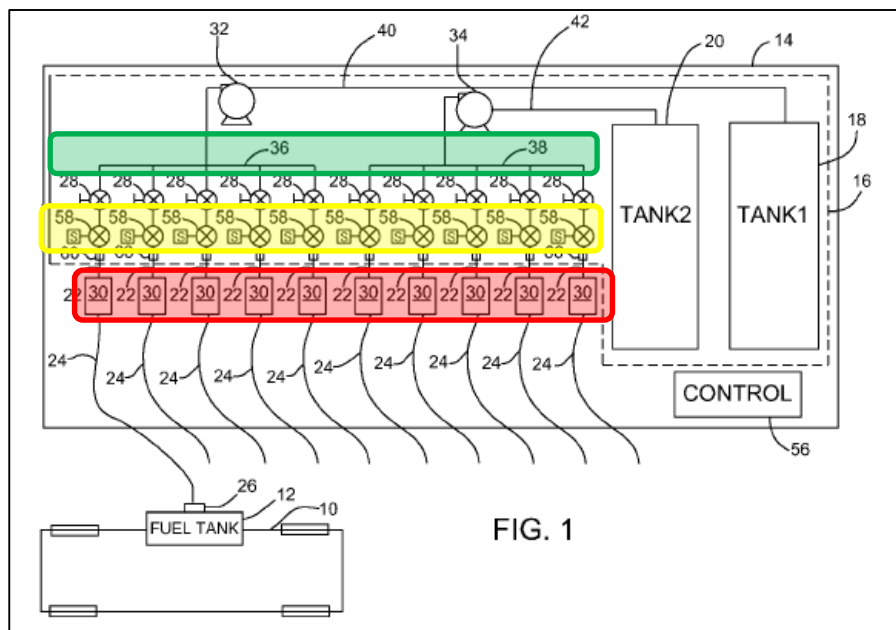
Van Vliet discloses a plurality of hoses, with one hose 24 stored on and extending from each reel 30. *See* EX1003, ¶¶128-130.



EX1004, FIG. 1 (annotated: reels 30 in red and hoses 24 in blue), [0015]; *see also* EX1003, ¶128. Each of hoses 24 are connected to a fluid outlet 22, which is part of the flow passage discussed in Section VI, *supra*. *See supra* Section VI. As discussed above, each of these flow passages also flows through a reel 30, and thus a POSITA would understand that each hose is connected to the flow passage via a reel. *See* EX1003, ¶129; *see also* EX1004, FIG. 1.

8. Claim 1[g]: “a plurality of valves on the mobile trailer, each said valve situated between the manifold and a respective different one of the reels and being operable to control fluid flow through a respective one of the flow passages;”

As depicted below, *Van Vliet* discloses a plurality of valves 58 (yellow). The fuel delivery system (including valves 58) is on a mobile trailer. EX1004, [0008], [0014]. Each of the valves 58 (yellow) is illustrated schematically downstream of manifold 36 or 38 (green). EX1004, FIG. 1. Furthermore, each of the valves 58 (yellow) is illustrated schematically upstream of a respective different one of the reels 30 (red). *Id.*



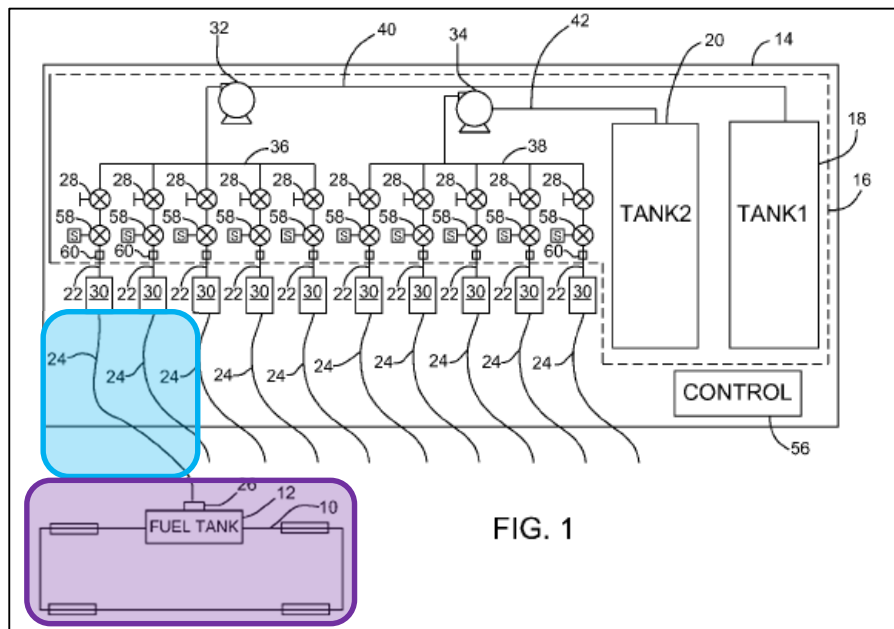
EX1004, FIG. 1 (annotated).

Thus, a POSITA would understand that at least *Van Vliet*’s valves 58 are each “situated between the manifold and a respective different one of the reels.” EX1003,

¶¶131-134. Valves 58 may be operable via solenoids S to “control fluid flow through the hose 24 . . . to permit independent operation of each hose 24.” EX1004, [0015]. Reels 30 reside between valves 58 and hoses 24. *Id.*, FIG. 1. Thus, for valves 58 to control fluid flow to and through the hose 24, valves 58 must be operable to control fluid flow through the flow passages that pass through reels 30. *See* EX1004, FIG. 1, [0015].

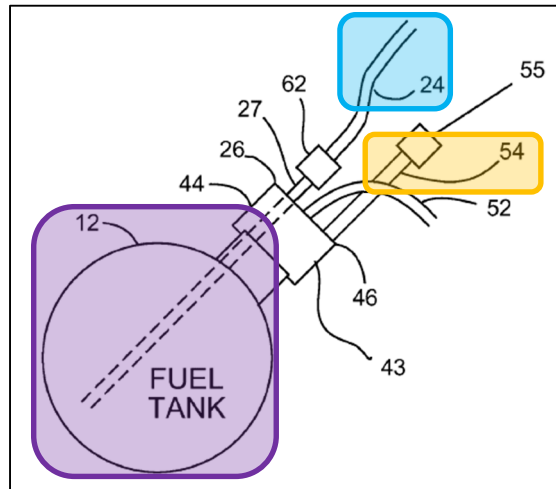
9. Claim 1[h]: “a plurality of fluid level sensors, each said fluid level sensor being connected or connectable with a respective different one of the hoses;”

In using *Van Vliet*’s system, each hose 24 (blue below) leads to a respective different fuel tank 12 (purple below):



EX1004, FIG. 1 (annotated). Each fuel tank 12 has a fuel cap 26 secured thereon that is connected to both one of the hoses 24 and a fuel level sensor 54 (in orange

below), as shown in FIG. 2:



EX1004, FIG. 2 (annotated). “The fuel level sensor 54 may be any suitable sensor such as float sensor, vibrating level switch, or pressure transducer.” EX1004, [0017]. Thus, each fuel level sensor is connected with a respective different one of the hoses. EX1004, FIG. 1, FIG. 2; *see also* EX1003, ¶¶135-141.

10.Claim 1[i]: “and a controller configured to operate the valves responsive to fluid level thresholds to control fluid flow to the hoses.”

Van Vliet discloses fuel level sensors for detecting fluid levels at particular thresholds (EX1004, FIG. 2, [0017]) and a “controller 56” that uses data from the sensor “to provide control signals to the respective automatically operable valves 58.” EX1004, [0020]. The controller of *Van Vliet* is responsive to high and low fuel level signals from each fuel tank 12 to stop or start the flow of fuel to the fuel tank. EX1004, [0020]. A POSITA would understand that the “low fuel level signal”, the “high fuel level signal”, or the controller’s criterion for response corresponds to a

“fluid level threshold” within the meaning of the ’118 Patent. *See* EX1003, ¶¶142-143; *see also* EX1004, [0020]. When the controller sends a signal to an automatically operable valve 58, valve 58 controls fluid flow to the hoses. EX1004, [0015], FIG. 1.

11.Claim 2: “The distribution station as recited in claim 1, wherein the controller is configured to determine fluid levels based on signals from the fluid level sensors and determine whether one or more of the fluid levels are below one or more of the fluid level thresholds.”

For the same reasons discussed with respect to Claim 1[i] above, and incorporated herein by reference, *Van Vliet* discloses a “controller [that] is configured to determine fluid levels based on signals from the fluid level sensors” based on “fluid level thresholds.” *See supra* Section VIII.A.10. *see also* EX1003, ¶¶144-146.

A POSITA would further understand that, because the controller acts to “start fuel flow to the fuel tank 12” based on the “low fuel level signal,” the controller must determine when fluid levels are *below* the fluid level threshold rather than above the fluid level threshold. EX1003, ¶145; *see also* EX1004, [0020]. Thus, *Van Vliet* discloses Claim 2.

12.Claim 3: “The distribution station as recited in claim 2, wherein the controller is configured to open the valves for which the fluid levels are below the fluid level thresholds.”

Van Vliet’s controller “provide[s] control signals to the respective automatically operable valves 58” to “start fuel flow to the fuel tank 12.” EX1004, [0020]. *Van Vliet* discloses that valves 58 may be operable via “a solenoid S” which allows fluid flow by opening in response to a low fuel level signal from the fuel tank. See EX1003, ¶¶147-148; see also EX1004, [0020]. Thus, *Van Vliet* discloses Claim 3.

B. Ground 1A: Claims 1-3 are rendered obvious by *Van Vliet* in view of *Coxreels*

1. Rationale and Motivation for Combining *Van Vliet* with *Coxreels*

A POSITA would have been motivated to combine *Coxreels* with *Van Vliet*. *Coxreels* is in the same field of endeavor as *Van Vliet* (as well as the ’118 Patent) and is directed to solving the same problem—using reels to support hoses for use in distributing hydrocarbon liquids. EX1001, 2:63-3:5, 1:65-2:10; EX1004, [0003], [0014], Abstract; EX1005, 1. *Coxreels* is therefore analogous art. See EX1003, ¶¶149.

It would have been obvious to a POSITA to combine *Coxreels*’ teaching of a specific reel with *Van Vliet*. See EX1003, ¶¶149-153. *Van Vliet* discloses the use of reels. EX1004, [0015]. A POSITA designing a system of *Van Vliet* would have

looked to commercially-available reel components like those described in *Coxreels*, among other reasons, as a cost-effective and readily-available option (e.g., as compared to a custom-made reel) for that system. *Coxreels*' reel was marketed for use in the same industry as *Van Vliet*'s system, and commonly used in the fracking fuel delivery industry at the time of the '118 Patent. EX1003, ¶150. A POSITA would have recognized the advantage of using *Coxreels*' reel in *Van Vliet*'s mobile fuel delivery system to connect *Van Vliet*'s hoses to *Coxreels*' reel flow passages. *Id.*

A POSITA would have had a reasonable expectation of success in combining *Coxreels* with *Van Vliet*. EX1003, ¶153. To combine *Van Vliet* with *Coxreels*, a POSITA would have needed only to select *Coxreels*' reel when choosing which reel to implement. *Id.* This would have been an obvious choice because *Coxreels*' reel was a readily available alternative suitable for use in the fuel delivery industry at the time of the '118 Patent. *Id.*, ¶150. Incorporating *Coxreels*' reel into *Van Vliet*'s mobile fuel delivery system would merely involve combining prior art elements according to known methods to yield predictable results—e.g., enabling *Van Vliet*'s system to operate using a reel with flow passages running therethrough. *See* EX1003, ¶¶149-153; *see also KSR*, 550 U.S. 398, 417 (2007) (“When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary

skill can implement a predictable variation, § 103 likely bars its patentability.”).

2. Claims 1[p]-1[d]

For the same reasons discussed with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* discloses Claim 1[p]-1[d]. *See supra* Section VIII.A.1-5; *see also* EX1003, ¶155.

3. Claim 1[e]

For the same reasons discussed with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* discloses Claim 1[e]. *See supra* Section VIII.A.6; *see also* EX1003, ¶¶156-160. To the extent that the claims require (and to the extent *Van Vliet* does not explicitly disclose) that the reels include flow passages separate from the hoses, *Coxreels* discloses a reel for storing hoses that has a built-in “fluid path.” *See* EX1005.

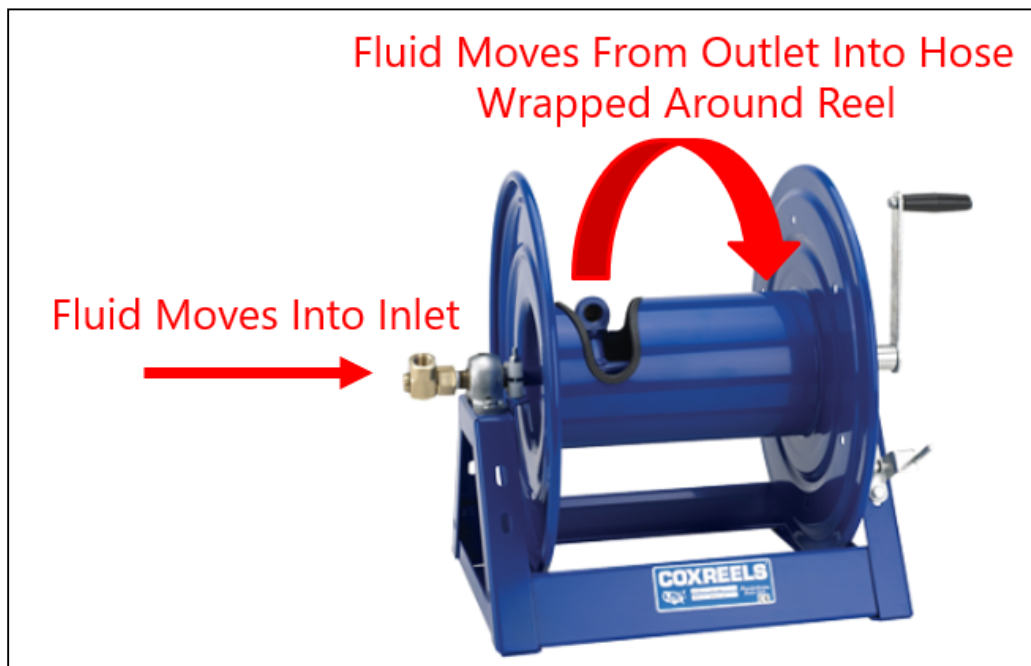
Coxreels describes an “[e]xternal fluid path with machined from solid brass 90° full-flow NPT swivel inlet”:



EX1005 (excerpted, annotated to show “external fluid path” with brass “swivel inlet”). *Coxreels* also describes a “low profile outlet riser, open drum slot design for flat smooth hose wrap”:



EX1005, 1 (excerpted, annotated to show “outlet” and “drum slot”). A POSITA would have recognized that a fluid source in a system using *Coxreels* would be fluidly connected to the “external fluid path” at the brass inlet so that the fluid can pass through the reel body and exit into a hose connected to the outlet at the “low profile outlet riser, open drum slot design.” EX1003, ¶159; *see also* EX1005.



EX1005 (excerpted, annotated to show path of fluid). This was a common and well-known design and operation of hose reels at the time of the '118 Patent. EX1003, ¶159. Thus, a POSITA would have deemed it obvious to use a hose reel as disclosed in *Coxreels* for the reels in *Van Vliet*, and fluidly connect a manifold 36,38 of *Van Vliet* via the fluid outlet 22 upstream of the reel body to a hose 24 of *Van Vliet*

downstream of the reel body through a flow passage in the reel body of *Coxreels*. EX1003, ¶160; *see also* EX1004, FIG. 1; EX1005.

4. Claim 1[f]

For the same reasons discussed with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* discloses Claim 1[f]. *See supra* Section VIII.A.7; *see also* EX1003, ¶161.

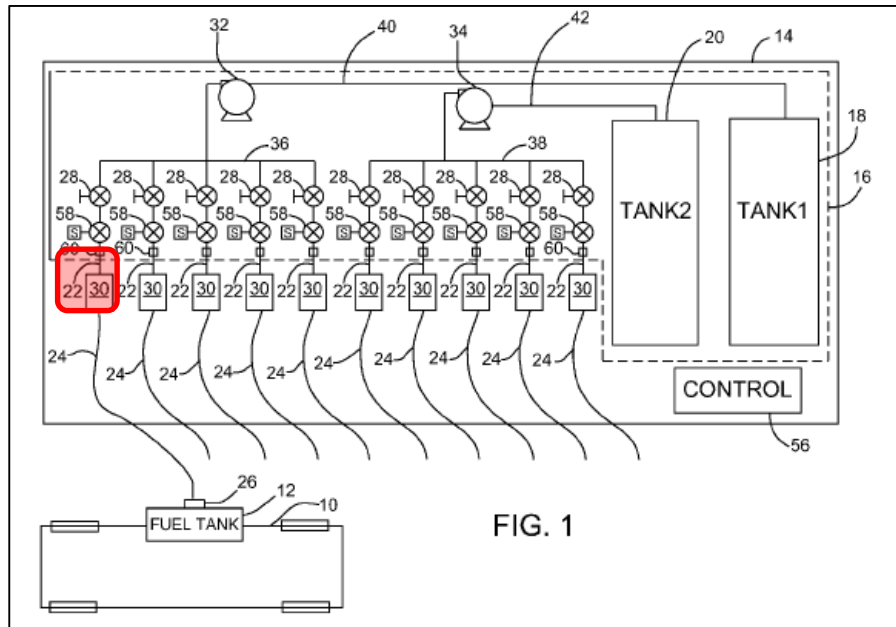
Alternatively, it would be obvious to combine *Van Vliet* with *Coxreels*, which describes a reel having a fluid path with connection ports. EX1005; *see also* EX1003, ¶¶162-166. In that combination, the hose 24 of *Van Vliet* would be connected to the outlet port on the reel of *Coxreels* highlighted below:



EX1005 (excerpted and annotated). *Coxreels*' reel also includes an inlet port highlighted below:



EX1005 (excerpted and annotated). The inlet port of the hose reel in *Coxreels* would be connected to fluid outlet 22 of *Van Vliet*:



EX1004, FIG. 1 (annotated).

Van Vliet's FIG. 1 depicts a fluid communication system extending from manifolds 36, 38 to reels 30, to hoses 24. EX1004, FIG. 1. Thus, a POSITA would understand that, in the *Van Vliet* system combined with *Coxreels*, each of the hoses 24 are connected to the flow passages via a reel 30. EX1003, ¶¶162-166; *see also* EX1004, FIG. 1.

5. Claims 1[g]-1[i]

For the same reasons discussed with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* discloses Claim 1[g]-1[i]. *See supra* Section VIII.A.7-10; *see also* EX1003, ¶167.

6. Claims 2-3

For the same reasons discussed with respect to Ground 1 above, and

incorporated herein by reference, *Van Vliet* discloses Claims 2-3. *See supra* Section VIII.A.11-12; *see also* EX1003, ¶168.

C. Ground 2: Claims 4-18 are rendered obvious by *Van Vliet* in view of *Shoap*

1. Rationale and Motivation for Combining *Van Vliet* and *Shoap*

A POSITA would have been motivated to combine *Shoap* with *Van Vliet*. *Shoap* is in the same field of endeavor as *Van Vliet* (as well as the '118 Patent) and is directed to solving the same problem—using hoses to transport fluids while simultaneously sending and/or receiving data to and from devices at opposite ends of the hoses. EX1001, 1:65-2:10, 5:32-51; EX1004, [0003], [0020], Abstract; EX1006, FIG. 1A, 4:50-5:3; EX1003, ¶169. *Shoap* is therefore analogous art.

It would have been obvious to a POSITA to combine *Shoap*'s teaching of a wired hose with *Van Vliet*. EX1003, ¶¶169-173. *Van Vliet* discloses the use of hoses stored on reels as well as sensors and controllers to monitor fluid in tanks at the ends of the hoses and control the flow of fluid through the hoses. EX1004, [0015], [0020]. *Shoap* discloses the use of a wired hose storable on a reel. EX1006, 5:39-51. A POSITA designing a system of *Van Vliet* that employs communication “through a wired channel” would have looked to existing hose designs that enable compact, safe, and convenient wire placement. EX1003, ¶¶171-172; EX1004, [0018]. In fact, use of *Shoap*'s wired hose would enable wired embodiments of *Van Vliet* that

accomplish benefits of traditional wireless embodiments (*e.g.*, avoiding unnecessary clutter from wires). EX1003, ¶171. A POSITA would have recognized the advantage of using and been motivated to use *Shoap*'s wired hose in *Van Vliet*'s mobile fuel delivery system to connect the sensors and controllers of *Van Vliet*. *Id.*

It also would have been obvious to POSITAs around the time the '118 Patent was filed that wired hoses could be used in fueling operations for hydraulic fracturing equipment. For example, U.S. Patent No. 10,882,732 to Haile (EX1029), which issued from a patent application filed on April 24, 2017 and claims priority to an earlier application filed on April 22, 2016, describes a mobile fueling platform for providing fuel to hydraulic fracturing equipment using "wired hose 811" to supply fuel to a saddle tank of fracturing equipment being refueled and connect sensors on the tank's fuel cap to a controller. *Id.*, 8:59–9:26 & Figs. 17-18. Thus, as evidenced above, it would have been obvious to a POSITA to use a wired hose such as that of *Shoap* in a fueling system for hydraulic fracturing operations as disclosed in *Van Vliet*. EX1003, ¶172.

A POSITA would have had a reasonable expectation of success in combining *Shoap* with *Van Vliet*. EX1003, ¶173. To combine *Van Vliet* with *Shoap*, a POSITA would have needed only to: (1) select *Van Vliet*'s wired embodiment (EX1004, [0018]); and (2) select *Shoap*'s hose, an obvious choice given the space-saving advantages of *Shoap* and *Shoap*'s use of reels. EX1003, ¶173; *see also* EX1006,

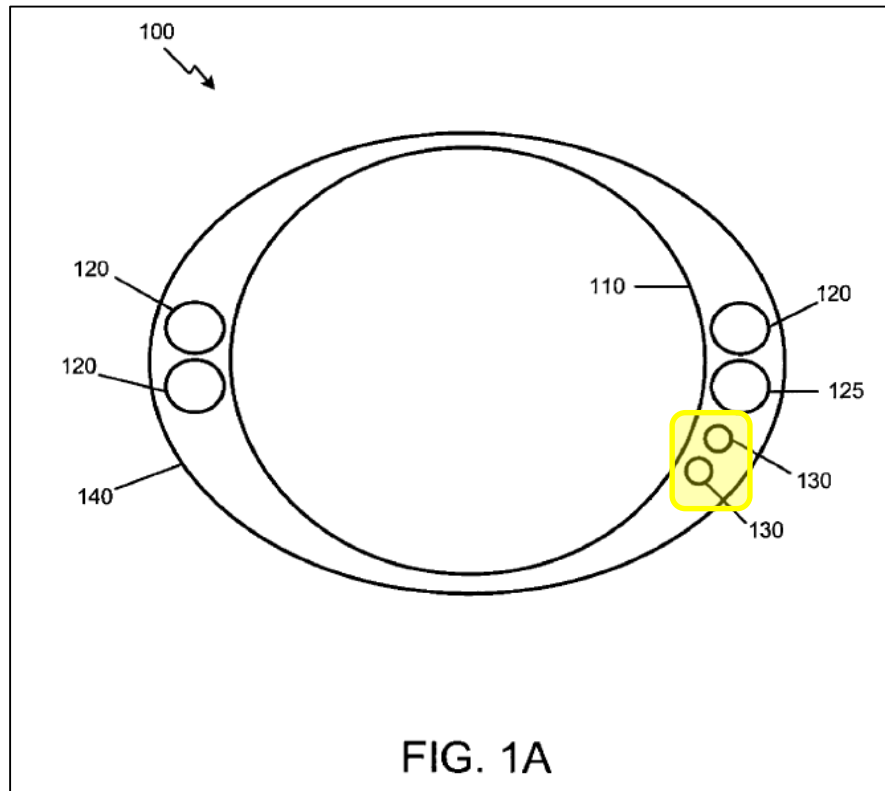
5:39-51. Incorporating *Shoap*'s wired hose into *Van Vliet*'s mobile fuel delivery system would merely involve combining prior art elements according to known methods to yield predictable results—*e.g.*, enabling *Van Vliet*'s system to operate using a hose with a communication wire running therethrough. *See* EX1003, ¶173; *see also* *KSR*, 550 U.S. 398, 417 (2007) (“When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.”).

2. Claim 4: “The distribution station as recited in claim 2, further comprising a plurality of sensor communication lines, each said sensor communication line being connected or connectable with a respective different one of the fluid level sensors, and each said sensor communication line being routed with a respective different one of the hoses.”

As discussed with regard to Claim 1[h], *Van Vliet* discloses a sensor 54 corresponding to each hose 24. *See supra* Section VIII.A.9; *see also* EX1003, ¶¶174-177. Thus, *Van Vliet* teaches a plurality of sensors. EX1004, FIG. 1, FIG. 2. The plurality of sensors is controlled via “communication channels,” which may be “wired or wireless.” *Id.*, [0018], [0020].

To the extent that *Van Vliet* does not disclose “each said sensor communication line being routed with a respective different one of the hoses,” *Shoap* teaches this limitation. *Shoap* describes a “wired fluid conduit 100” that includes “a

conduit, such as a fire hose or a rigid or semi-rigid pipe,” “insulated electrical power wires 120, a ground wire 125 and communication wires 130”. EX1006, 4:50-57; *see also* EX1003, ¶¶178-180.

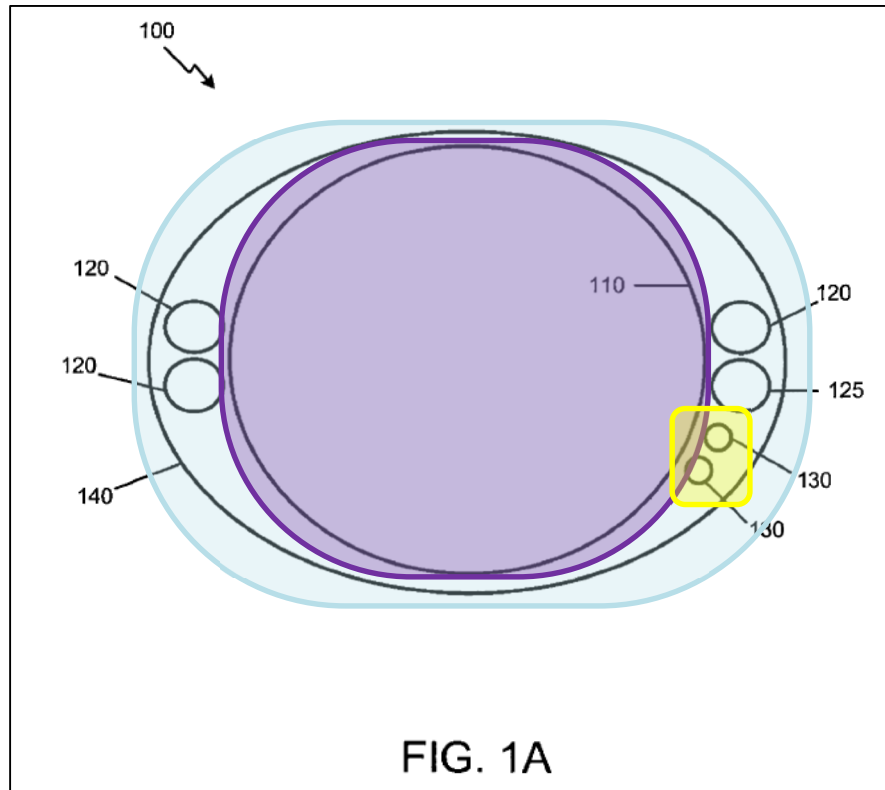


EX1006, FIG. 1A (annotated: cross-section of conduit 100 with communication channels 130 in yellow). At least one of the communication wires 130 may be connected to a sensor, *e.g.*, pressure sensor 1370. *See* EX1006, 15:16-26. The other end of that communication wire 130 may connect to a communication element such as a network connector so that signals from those wires can be sent to a data network. EX1006, 5:52-67; EX1003, ¶180. As discussed above, it would be obvious for a POSITA to use wired fluid conduits 100 of *Shoap* for the hoses 24 of *Van Vliet* and

connect *Shoap*'s communication line 130 to the sensor 54 of *Van Vliet*. EX1003, ¶180. In that embodiment, the system would include “a plurality of sensor communication lines” (*i.e.*, at least one of communication lines 130 of *Shoap* in each of the hoses 24 of *Van Vliet*), each of which is “connected or connectable with a respective different one of the fluid level sensors” and “being routed with a respective different one of the hoses.” EX1003, ¶180.

3. Claim 5: “The distribution station as recited in claim 4, wherein each of the hoses includes a tube and a sleeve that circumscribes the tube, and each said sensor communication line is routed in the respective different one of the hoses between the tube and the sleeve.”

Shoap discloses a hose having a communication line 130 (yellow) routed between a hose tube (inner conduit surface 110, in purple) and sleeve (outer conduit surface 140, in light blue). *See* EX1003, ¶¶181-184.



EX1006, FIG. 1A (annotated).

As depicted above, *Shoap*'s outer conduit surface 140 (sleeve) fully circumscribe the inner conduit surface 110, with communication lines 130 disposed in the cross-sectional space between those two surfaces. EX1006, FIG. 1A, 4:51-5:3; EX1003, ¶182. Thus, *Shoap* teaches Claim 5.

Alternatively, to the extent that Claim 5 requires that the tube and the sleeve be physically separate structures, it would have been obvious to a POSITA that conduit having a similar cross-sectional structure as shown in FIG. 1A of *Shoap* could be formed using two thinner concentric conduits instead of a single thicker conduit having an inner surface and an outer surface with a thickness. That

arrangement would be merely an obvious matter of design choice. EX1003, ¶183.

4. Claim 6: “The distribution station as recited in claim 5, wherein each said sensor communication line is routed through a respective different one of the reels.”

Shoap discloses a hose having a communication line routed between the inner layer and outer layer of the hose. EX1006, FIG. 1A, 4:50-57. *Shoap* further discloses storing the wired hose on (*i.e.*, wound around) a storage reel 220, and thus the communication wires 130 would be routed through the reel 220. EX1006, 5:39-51, FIG. 2A; EX1003, ¶¶185-189; EX1028, 12 (summary of examiner interview in parent U.S. Patent App. 15/290,304, examiner noting that “the phrase ‘routed through’ is broad enough to include the communication line running within the hose being fed through the reels”). Moreover, in using *Shoap*’s conduit as the hose 24 of *Van Vliet*, the communication wires 130 would be routed through a reel 30 of *Van Vliet*. See EX1003, ¶¶186-189. Thus, *Shoap*, either alone or in combination with *Van Vliet*, discloses Claim 6.

5. Claim 7: “The distribution station as recited in claim 6, further comprising a plurality of connectors, each of the connectors being mounted on a respective different one of the reels and each of the connectors receiving a respective different one of the sensor communication lines.”

As explained with respect to Claim 6 above, and incorporated herein by reference, a POSITA would understand that any system having communication lines routed through the bodies of reels would require respective connectors for each

communication line. *See supra* Section VIII.C.4; *see also* EX1003, ¶¶190-192. It would be an obvious design choice to mount those connectors on the reel on which the hose is connected and/or stored. EX1003, ¶192. Thus, *Van Vliet* in view of *Shoap* renders Claim 7 obvious.

6. Claim 8: “The distribution station as recited in claim 7, wherein each of the reels includes a respective spindle, and each of the sensor communication lines is routed through a respective different one of the spindles.”

As explained with respect to Claim 6 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders obvious “sensor communication lines [] routed through a respective different one of the [reels].” *See supra* Section VIII.C.4; *see also* EX1003, ¶193. *Shoap* discloses a reel 1350 having reel ends 1355A, 1355B connected by a hollow reel cylinder 1360, which a POSITA would recognize as a spindle. EX1006, FIG. 13E, 13F, 14:1-5. *Shoap* also describes equipment such as a pump 1364 installed within the cavity of the hollow reel cylinder 1360, which is connected to conduit 1376 at its input 1382 and hose 1366 at slip ring assembly 1372. *Id.*, FIG. 13G, 14:12-21; EX1003, ¶193. Conduit 1376 and hose 1366 both include connectors that carry communication wires 130 from the helicopter hose 1300, which has the same structure as wired fluid conduit 100 or wired fluid hose 101. EX1006, FIG. 13G, 13:9-12, 14:25-34, 14:54-60; EX1003, ¶193. Thus, the communication wires 130 are routed through the cylinder 1360

(spindle) of the reel 1350 in *Shoap*.

To the extent that *Van Vliet* and/or *Shoap* does not explicitly disclose a spindle, spindles were a common (if not necessary) feature of hose reels at the time of the '118 Patent. EX1003, ¶193. It would have been an obvious design choice at the time of the '118 Patent to route the communication line through the spindle of the reel rather than through another aspect of the reel. EX1003, ¶193. Therefore, particularly in view of the reel configuration described in *Shoap*, the spindle would be the most logical location through which to route a communication line. EX1003, ¶193.

7. Claim 9: “The distribution station as recited in claim 8, wherein controller is operable to open and close the plurality of valves responsive to a fuel level threshold.”

As explained in Section VIII.A.3, *supra*, with respect to Claim 3, which is incorporated herein by reference, *Van Vliet*'s controller 56 is operable to open valves 58 responsive to fluid level thresholds. The controller 56 is also operable to operate solenoid S to close valve 58 to stop fuel flow to the fuel tank in response to a high level signal. EX1004, [0020]; EX1003, ¶194; *see also* EX1004, [0026] (“An automatic system may be used to close the valves 58 automatically in the case of a high fluid level detection”). Thus, *Van Vliet* in view of *Shoap* renders Claim 9 obvious. *See also* EX1003, ¶194.

8. Claim 10[p]: “A distribution station comprising:”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 10[p] obvious. *See supra* Section VIII.A.1; *see also* EX1003, ¶196.

9. Claim 10[a]: “a mobile trailer;”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 10[a] obvious. *See supra* Section VIII.A.2; *see also* EX1003, ¶197.

10.Claim 10[b]: “a pump on the mobile trailer;”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 10[b] obvious. *See supra* Section VIII.A.3; *see also* EX1003, ¶198.

11.Claim 10[c]: “a manifold on the mobile trailer and connected with the pump;”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 10[c] obvious. *See supra* Section VIII.A.4; *see also* EX1003, ¶199.

12.Claim 10[d]: “a plurality of reels on the mobile trailer;”

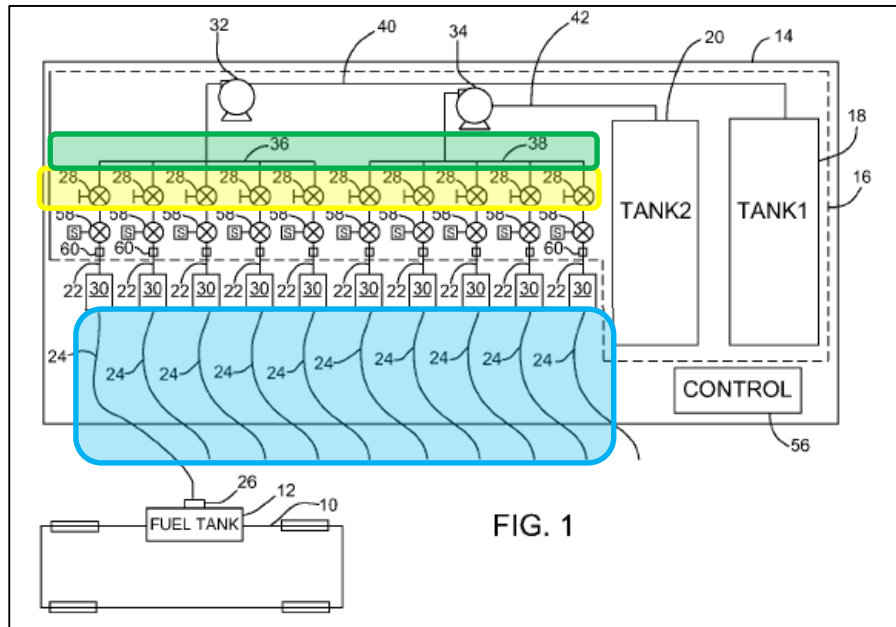
As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 10[d] obvious. *See supra* Section VIII.A.5; *see also* EX1003, ¶200.

13.Claim 10[e]: “a plurality of hoses, each said hose being connected with the manifold and each said hose including a tube and a sleeve that circumscribes the tube;”

As explained with respect to Claims 1 and 5 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 10[e] obvious. *See supra* Sections VIII.A.6-7, VIII.C.3; *see also* EX1003, ¶201.

14.Claim 10[f]: “a plurality of valves on the mobile trailer, each said valve situated between the manifold and a respective different one of the hoses and being operable to control fluid flow from the manifold to the respective different one of the hoses;”

As depicted below, *Van Vliet* discloses a plurality of valves 58 (yellow). The fuel delivery system (including valves 58) is on a mobile trailer. EX1004, [0008], [0014]. Each of the valves 58 (yellow) is illustrated schematically downstream of manifold 36 or manifold 38 (green). EX1004, FIG. 1. Furthermore, each of the valves 58 (yellow) is illustrated schematically upstream of a respective different one of the hoses 24 (blue). *Id.*



EX1004, FIG. 1 (annotated); *see also* EX1003, ¶202-204.

Valves 58 may be operable via solenoids S to “control fluid flow through the hose 24 . . . to permit independent operation of each hose 24.” *Id.*, [0015]. Thus, a POSITA would understand that at least *Van Vliet*’s valves 58 are each “situated between the manifold and a respective different one of the hoses.” EX1004, FIG. 1; EX1003, ¶204.

15.Claim 10[g]: “a plurality of fluid level sensors, each said fluid level sensor being connected or connectable with a respective different one of the hoses; and”

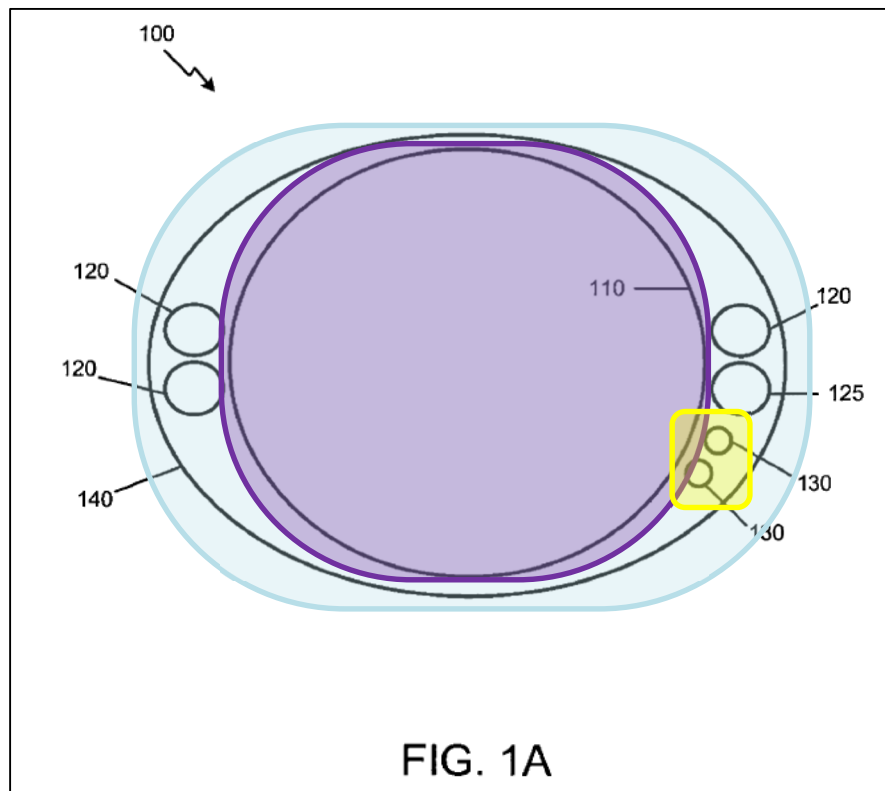
As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 10[g] obvious. *See supra* Section VIII.A.9; *see also* EX1003, ¶205.

16.Claim 10[h]: “a controller configured to operate the valves responsive to fluid level thresholds to control fluid flow to the hoses.”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 10[h] obvious. *See supra* Section VIII.A.10; *see also* EX1003, ¶206.

17.Claim 11: “The distribution station as recited in claim 10, wherein the sleeve is a fabric sleeve.”

Shoap discloses a hose having a communication line (yellow) routed between a hose tube (purple) and sleeve (light blue):



EX1006, FIG. 1A (annotated).

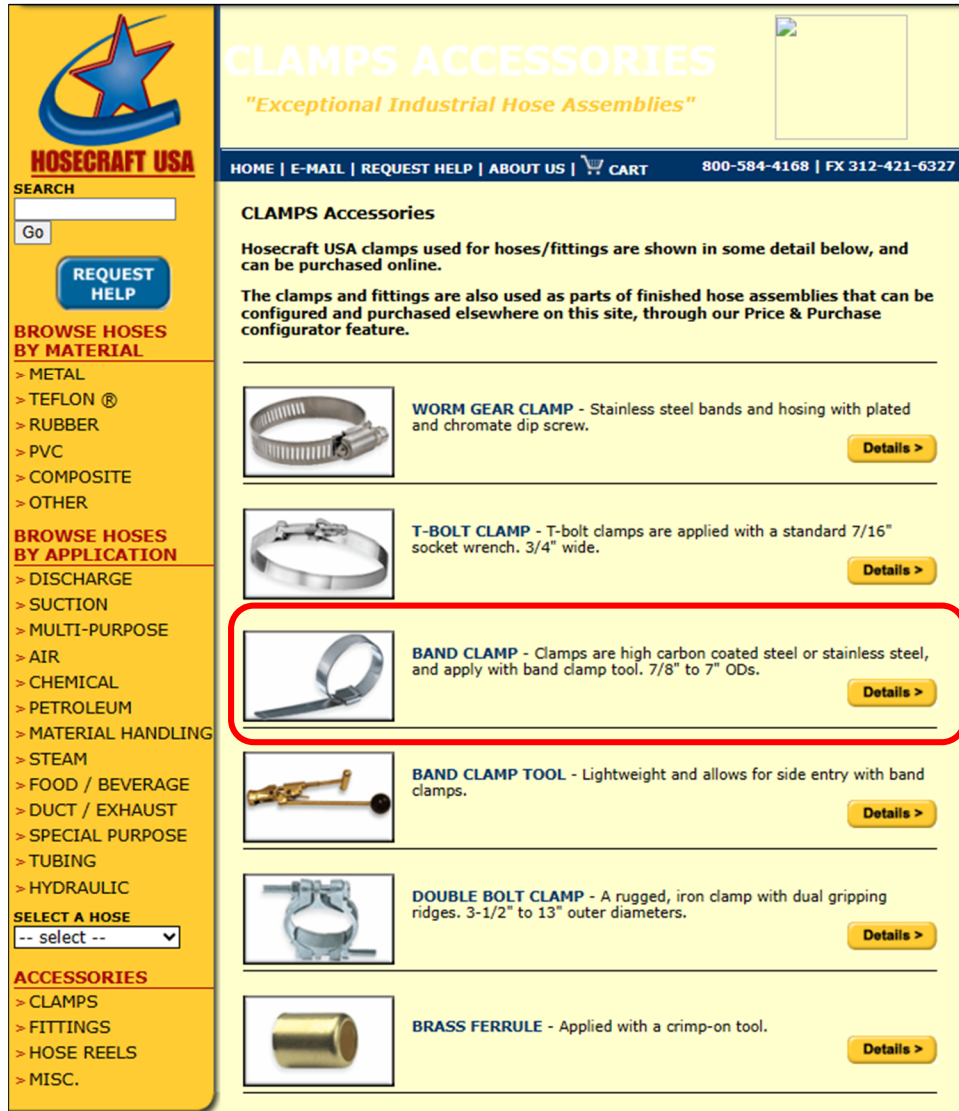
It would have been an obvious design choice at the time of the '118 Patent to make outer surface 140 (sleeve) out of fabric. EX1003, ¶208. For example, many fabric covered hoses, or fabric protective hose sleeves were commercially available at the time of the '118 Patent, and were part of a finite set of known options for protecting hoses from damage. *See* EX1003, Section VIII.C. Accordingly, it would have been obvious to a POSITA to use a fabric sleeve, such as a fabric protective sleeve or fabric covered hose, in the design and implementation of the system of *Van Vliet* (as modified by *Shoap*). Accordingly, the combination of *Van Vliet* and *Shoap*, along with a POSITA's knowledge of the hose accessories, including fabric protective sleeves available commercially, renders Claim 11 obvious. EX1003, ¶208.

18.Claim 12: “The distribution station as recited in claim 10, further comprising bands around the hoses, the bands securing the sleeve on the tube.”

As explained with respect to Claim 5 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders obvious a hose comprising a sleeve around a tube. *See supra* Section VIII.C.3; *see also* EX1003, ¶209-210.

It would have been an obvious design choice at the time of the '118 Patent to include bands to secure the sleeve on the tube. EX1003, ¶209. A POSITA would have recognized that a protective sleeve would need to be held in place on the hose in order to keep it from sliding off and exposing the hose, and other components

such as communication lines, that it was designed to protect. *Id.* A POSITA would also have recognized that some type of clamping mechanism, such as bands, would have been necessary to secure the internal components of *Shoap's* wired conduit in place, and keep them from being damaged or kinked by rolling around unconstrained inside the external conduit (sleeve). *Id.* Further, a POSITA would have recognized the necessity of using a clamp of some type (including a band) to connect *Shoap* and *Van Vliet's* hoses to fitting used, for example, to connect the hose to *Van Vliet's* fuel cap or the discharge port on the reel. *Id.* A POSITA would also have recognized that a common type of clamp used in the construction of hoses and fittings were steel bands, such as those manufactured and marketed by Hosecraft USA. *Id.* Hosecraft USA's clamp are "used for hoses/fitting", were available to a POSITA at least by July 2, 2013, as discussed in EX1003, Section X.D1. One type of clamp available was a "high carbon coated steel, or stainless steel" band clamp, as shown below.



EX1007; EX1003, ¶¶209-210. A POSITA would have been motivated to use commercially available bands, such as those sold by Hosecraft USA, to secure not only the sleeve to the hose, but also to secure the other components of *Shoap*'s wired hose in place, and to secure the hose to fittings. EX1003, ¶210. Accordingly, it would have been an obvious design choice at the time of the '118 Patent to include bands to secure the sleeve on the tube. EX1003, ¶210. Thus, the combination of *Van Vliet*

and *Shoap*, along with a POSITA's knowledge of the hose materials, including band clamps available commercially, renders Claim 12 of the '118 Patent obvious.

19.Claim 13: “The distribution station as recited in claim 12, wherein the bands are steel.”

It would have been an obvious design choice at the time of the '118 Patent to use steel for the bands. EX1003, ¶211. As discussed above regarding Claim 12, one common type of band clamp construction was bands comprised of “high carbon steel or stainless steel.” Further, such bands were commercially available at the time of the '118 Patent and were designed for use with “hoses / fittings” as well as finished hose assemblies. EX1003, ¶211. Accordingly, the combination of *Van Vliet* and *Shoap*, along with a POSITA's knowledge of the hose materials, including band clamps, available commercially, renders Claim 12 of the '118 Patent obvious.

20.Claim 14: “The distribution station as recited in claim 10, further comprising a communication line between the sleeve and the tube.”

As explained with respect to Claim 5 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 14 obvious. *See supra* Section VII.C.3; *see also* EX1003, ¶212.

21.Claim 15[p]: “A distribution station comprising:”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 15[p] obvious. *See supra* Section VIII.A.1; *see also* EX1003, ¶214.

22.Claim 15[a]: “a mobile trailer including a pump,”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 15[a] obvious. *See supra* Sections VIII.A.2-3; *see also* EX1003, ¶215.

23.Claim 15[b]: “a manifold connected with the pump,”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 15[b] obvious. *See supra* Section VIII.A.4; *see also* EX1003, ¶216.

24.Claim 15[c]: “reels,”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 15[c] obvious. *See supra* Section VIII.A.5; *see also* EX1003, ¶217.

25.Claim 15[d]: “flow passages connected to the manifold and running through the reels,”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 15[d] obvious. *See supra* Section VIII.A.6; *see also* EX1003, ¶218.

26.Claim 15[e]: “hoses connected with the flow passages via the reels”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 15[e] obvious. *See supra*

Section VIII.A.7; *see also* EX1003, ¶219.

27.Claim 15[f]: “and each of the hoses including a tube and a sleeve that circumscribes the tube,”

As explained with respect to Claim 10 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 15[f] obvious. *See supra* Section VIII.C.13; *see also* EX1003, ¶220.

28.Claim 15[g]: “valves situated between the manifold and the reels and operable to control fluid flow through the flow passages,”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 15[g] obvious. *See supra* Section VIII.A.8; *see also* EX1003, ¶221.

29.Claim 15[h]: “fluid level sensors connected or connectable with the hoses,”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 15[h] obvious. *See supra* Section VIII.A.9; *see also* EX1003, ¶222.

30.Claim 15[i]: “and a controller configured to operate the valves responsive fluid level thresholds to control fluid flow to the hoses.”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 15[i] obvious. *See supra* Section VIII.A.10; *see also* EX1003, ¶223.

31.Claim 16: “The distribution station as recited in claim 15, wherein the controller is configured to determine fluid levels based on

signals from the fluid level sensors, determine whether one or more of the fluid levels are below one or more of the fluid level thresholds, and open the valves for which the fluid levels are below the fluid level thresholds.”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 16 obvious. *See supra* Sections VIII.A.11-12; *see also* EX1003, ¶224.

32.Claim 17: “The distribution station as recited in claim 16, further comprising a plurality of sensor communication lines, each said sensor communication line being connected or connectable with a respective different one of the fluid level sensors.”

As explained with respect to Claim 4 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 17 obvious. *See supra* Section VIII.C.2; *see also* EX1003, ¶225.

33.Claim 18: “The distribution station as recited in claim 17, wherein each said sensor communication line is routed in the respective different one of the hoses between the tube and the sleeve.”

As explained with respect to Claim 5 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* renders Claim 18 obvious. *See supra* Section VIII.C.3; *see also* EX1003, ¶226.

D. Ground 2A: Claims 4-9 and 15-18 are rendered obvious by *Van Vliet* in view of *Coxreels* and *Shoap*

1. Rationale and Motivation for Combining *Van Vliet* with *Coxreels* and *Shoap*.

The reasons to combine *Van Vliet* and *Shoap* are the same as those described in Section VIII.C.1 above and incorporated herein. The motivation to combine *Van*

Vliet and *Coxreels* are the same as those described in Section VIII.B.1 above. There is nothing in *Coxreels* that teaches against the combination of *Van Vliet* and *Shoap*, nor is there anything in *Shoap* that teaches against the combination of *Van Vliet* and *Coxreels*. Accordingly, a POSITA would have been motivated to combine all three references to take advantage of each of the benefits of *Shoap* and *Coxreels* in the system of *Van Vliet*. See EX1003, ¶227.

2. Claim 4: “The distribution station as recited in claim 2, further comprising a plurality of sensor communication lines, each said sensor communication line being connected or connectable with a respective different one of the fluid level sensors, and each said sensor communication line being routed with a respective different one of the hoses.”

For the same reasons discussed with respect to Ground 2 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* discloses Claim 4. See *supra* Section VIII.C.2; see also EX1003, ¶228.

3. Claim 5: “The distribution station as recited in claim 4, wherein each of the hoses includes a tube and a sleeve that circumscribes the tube, and each said sensor communication line is routed in the respective different one of the hoses between the tube and the sleeve.”

For the same reasons discussed with respect to Ground 2 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* discloses claim 5. See *supra* Section VIII.C.3; see also EX1003, ¶229.

4. Claim 6: “The distribution station as recited in claim 5, wherein each said sensor communication line is routed through a respective different one of the reels.”

For the same reasons discussed with respect to Ground 2 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* discloses claim 6. See *supra* Section VIII.C.4; see also EX1003, ¶¶230-235.

To the extent that “routed through” a reel in claim 6 requires being routed through a passage in the body of a reel itself, the combination of *Van Vliet*, *Coxreels*, and *Shoap* renders obvious Claim 6. *Van Vliet* discloses hoses located on reels and connected to sensors. EX1004, Figs. 1, 2. *Coxreels* discloses a reel having a fluid path with connection ports, wherein a hose and a fluid source may be connected to those ports. EX1005, 1. As stated above, *Shoap* discloses a hose having a communication line routed between the inner and outer surface of a hose. EX1006, FIG. 1A, 4:50-57. Both of *Shoap* and *Van Vliet* have a common goal of allowing communication between devices at opposite ends of a hose (*i.e.*, a sensor 54 of *Van Vliet* and a pressure sensor 1370 of *Shoap*). EX1004, Figs. 1, 2; EX1006, 15:16-26; EX1003, ¶231. A POSITA combining *Van Vliet* with *Shoap* and using a reel of *Coxreels* would understand that the communication line 130 of *Shoap* must be connected to both devices to achieve that goal. EX1003, ¶231. It would have been an obvious design choice for a POSITA to extend and route the communication lines 130 of *Shoap* through *Coxreels*’ spindle, *e.g.*, modify the fluid path and connection

ports of *Coxreels* to include a connection for the communication wires of *Shoap*'s conduit to achieve that goal. EX1003, ¶231; *see also* EX1006, FIG. 1A, 4:50-57; EX1005, 1. Thus, it would have been obvious to a POSITA combining *Van Vliet*, *Coxreels*, and *Shoap* to route *Shoap*'s sensor communication line through *Coxreels*' spindle on or near the fluid path to communicate with *Van Vliet*'s sensors. EX 1003, ¶¶230-235; *see also* EX1006, FIG. 1A, 4:50-57; EX1005; EX1004, [0020].

5. Claim 7: “The distribution station as recited in claim 6, further comprising a plurality of connectors, each of the connectors being mounted on a respective different one of the reels and each of the connectors receiving a respective different one of the sensor communication lines.”

As explained with respect to Claim 6 above, and incorporated herein by reference, a POSITA would understand that any system having communication lines routed through the bodies of reels would require respective connectors for each communication line. EX1003, ¶236. It would be an obvious design choice to mount those connectors on the reel on which the hose is connected and/or stored. EX1003, ¶236. Thus, *Van Vliet* in view of *Coxreels* and *Shoap* renders Claim 7 obvious. *See supra* Section VIII.D.4. *see also* EX1003, ¶236.

6. Claim 8: “The distribution station as recited in claim 7, wherein each of the reels includes a respective spindle, and each of the sensor communication lines is routed through a respective different one of the spindles.”

Coxreels discloses a hose reel that includes a spindle (red):



EX1005, 1 (annotated). As explained with respect to Claim 8 in Ground 2, and incorporated herein by reference, *Shoap* discloses routing communication lines through the spindle of the reel on which the wired fluid conduit is stored, and so it would be obvious to a POSITA to route the communication lines 130 of *Shoap* through the spindle of the reel in *Coxreels*. EX1003, ¶238. Thus, *Van Vliet* in view of *Coxreels* and *Shoap* renders Claim 8 obvious. See *supra* Section VIII.C.6; see also EX1003, ¶¶237-238.

7. Claim 9: “The distribution station as recited in claim 8, wherein controller is operable to open and close the plurality of valves responsive to a fuel level threshold.”

As explained in Section VIII.A.3, *supra*, with respect to Claim 3, which is incorporated herein by reference, *Van Vliet*’s controller 56 is operable to open valves 58 responsive to fluid level thresholds. *See supra* Section VIII.A.3. The controller 56 is also operable to operate solenoid S to close valve 58 to stop fuel flow to the fuel tank in response to a high level signal. EX1004, [0020]; EX1003, ¶239; *see also* EX1004, [0026] (“An automatic system may be used to close the valves 58 automatically in the case of a high fluid level detection”). Thus, *Van Vliet* in view of *Coxreels* and *Shoap* renders Claim 9 obvious. *See also* EX1003, ¶239.

8. Claim 15[p]: “A distribution station comprising:”

As explained with respect to Ground 1A above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* renders Claim 15[p] obvious. *See supra* Sections VIII.A.1, VIII.B.2; *see also* EX1003, ¶241.

9. Claim 15[a]: “a mobile trailer including a pump,”

As explained with respect to Ground 1A above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* renders Claim 15[a] obvious. *See supra* Sections VIII.A.2-3, VIII.B.2; *see also* EX1003, ¶242.

10.Claim 15[b]: “a manifold connected with the pump,”

As explained with respect to Ground 1A above, and incorporated herein by

reference, *Van Vliet* in view of *Coxreels* renders Claim 15[b] obvious. *See supra* Sections VIII.A.4, VIII.B.2; *see also* EX1003, ¶243.

11.Claim 15[c]: “reels,”

As explained with respect to Ground 1A above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* renders Claim 15[c] obvious. *See supra* Sections VIII.A.5, VIII.B.2; *see also* EX1003, ¶244.

12.Claim 15[d]: “flow passages connected to the manifold and running through the reels,”

As explained with respect to Ground 1A above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* renders Claim 15[d] obvious. *See supra* Sections VIII.A.6; VIII.B.2; *see also* EX1003, ¶245.

13.Claim 15[e]: “hoses connected with the flow passages via the reels”

As explained with respect to Ground 1A above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* renders Claim 15[e] obvious. *See supra* Sections VIII.A.7, VIII.B.3; *see also* EX1003, ¶246.

14.Claim 15[f]: “and each of the hoses including a tube and a sleeve that circumscribes the tube,”

As explained with respect to Claim 10 above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* and *Shoap* renders Claim 15[f] obvious. *See supra* Sections VIII.C.13, VIII.B.4; *see also* EX1003, ¶247.

15.Claim 15[g]: “valves situated between the manifold and the reels and operable to control fluid flow through the flow passages,”

As explained with respect to Ground 1A above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* renders Claim 15[g] obvious. *See supra* Sections VIII.A.8, VIII.B.5; *see also* EX1003, ¶248.

16.Claim 15[h]: “fluid level sensors connected or connectable with the hoses,”

As explained with respect to Ground 1A above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* renders Claim 15[h] obvious. *See supra* Sections VIII.A.9, VIII.B.5; *see also* EX1003, ¶249.

17.Claim 15[i]: “and a controller configured to operate the valves responsive fluid level thresholds to control fluid flow to the hoses.”

As explained with respect to Ground 1A above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* renders Claim 15[i] obvious. *See supra* Section VIII.A.10, VIII.B.5; *see also* EX1003, ¶250.

18.Claim 16: “The distribution station as recited in claim 15, wherein the controller is configured to determine fluid levels based on signals from the fluid level sensors, determine whether one or more of the fluid levels are below one or more of the fluid level thresholds, and open the valves for which the fluid levels are below the fluid level thresholds.”

As explained with respect to Ground 1 above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* and *Shoap* renders Claim 16 obvious. *See supra* Sections VIII.A.11-12; *see also* EX1003, ¶251.

19.Claim 17: “The distribution station as recited in claim 16, further comprising a plurality of sensor communication lines, each said sensor communication line being connected or connectable with a respective different one of the fluid level sensors.”

As explained with respect to Claim 4 above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* and *Shoap* renders Claim 17 obvious. *See supra* Section VIII.D.2; *see also* EX1003, ¶252.

20.Claim 18: “The distribution station as recited in claim 17, wherein each said sensor communication line is routed in the respective different one of the hoses between the tube and the sleeve.”

As explained with respect to Claim 5 above, and incorporated herein by reference, *Van Vliet* in view of *Coxreels* and *Shoap* renders Claim 16 obvious. *See supra* Section VIII.D.3; *see also* EX1003, ¶253.

E. Ground 3: Claims 12-13 are rendered obvious by *Van Vliet* in view of *Shoap* and *Hosecraft*

1. Rationale and Motivation for Combining *Van Vliet* and *Shoap* with *Hosecraft*

A POSITA would have been motivated to combine *Hosecraft* with *Van Vliet* (as modified by *Shoap*). *Hosecraft* is in the same field of endeavor as *Van Vliet* (as well as the '118 Patent) and is directed to solving the same problem—enabling the use of hoses to dispense fluids such as fuel. EX1001, 1:65-2:10; EX1003, ¶254; *see also* EX1004, [0003], [0020], Abstract; EX1007, 12; EX1006, 4:51-5:3. *Hosecraft* is therefore analogous art.

It would have been obvious to a POSITA to combine *Hosecraft*'s teaching of a specific band clamp with *Van Vliet* (as modified by *Shoap*). EX1003, ¶254-258. A POSITA designing a system of *Van Vliet* would have looked to commercially-available hose accessories like those described in *Hosecraft*, among other reasons, as a cost-effective and readily-available option (*e.g.*, as compared to a custom-made band clamp) for that system. EX1003, ¶255. *Hosecraft* marketed its products for use in the same industry as *Van Vliet*'s system (*i.e.*, the petroleum industry). *See* EX1036 (listing "PETROLEUM" as option on righthand menu). A POSITA would have recognized the advantage of using *Hosecraft*'s band clamp in *Van Vliet*'s mobile fuel delivery system to secure *Van Vliet*'s hoses. EX1003, ¶257.

A POSITA would have had a reasonable expectation of success in combining *Hosecraft* with *Van Vliet*. EX1003, ¶258. To combine *Van Vliet* with *Hosecraft*, a POSITA would have needed only to select *Hosecraft*'s band clamp when choosing which clamp to implement. EX1003, ¶258. This would have been an obvious choice because *Hosecraft*'s band clamp was a readily available alternative suitable for use in the fuel delivery industry at the time of the '118 Patent. EX1003, ¶258. Incorporating *Hosecraft*'s band clamp into *Van Vliet*'s mobile fuel delivery system would merely involve combining prior art elements according to known methods to yield predictable results. *See* EX1003, ¶258; *see also* *KSR*, 550 U.S. 398, 417 (2007).

2. Claim 12: “The distribution station as recited in claim 10, further comprising bands around the hoses, the bands securing the sleeve on the tube.”

As explained with respect to Ground 2 above, and incorporated herein by reference, *Van Vliet* in view of *Shoap* discloses a hose comprising a sleeve around a tube. *See supra* Section VIII.C.3; *see also* EX1003, ¶¶259-260.

Hosecraft discloses several clamps and fittings, including a band clamp. EX1007, 5, 12.



EX1007. *Hosecraft*'s clamps and fittings are all designed specifically for hose assemblies and used to clamp the hose with any protective sleeve, constrain items inside a protective sleeve, and to clamp the hose to fittings in order to create hose assemblies. EX1007; EX1003, ¶260. In modifying the conduit of *Shoap* to consist of a separate tube and sleeve as discussed in Section , *supra*, Section VIII.C3 with regard to Claim 5, it would have been obvious to a POSITA to use *Hosecraft*'s band clamp to secure the sleeve to the tube. EX1003, ¶260; *see also* EX1007.

3. Claim 13: “The distribution station as recited in claim 12, wherein the bands are steel.”

Hosecraft’s band clamp is made of “high carbon coated steel” or “stainless steel.” EX1007. Thus, *Van Vliet* in view of *Shoap* and *Hosecraft* teaches Claim 13. EX1003, ¶261.

IX. SECONDARY CONSIDERATIONS

Patent Owner has not identified any evidence of secondary considerations of non-obviousness tied to the ’118 Patent claims in the parallel litigation or this proceeding. Petitioners reserve the right to address any such evidence if Patent Owner presents it. However, even if Patent Owner could establish secondary considerations and nexus, they would be insufficient to overcome the strong case of obviousness. *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

X. CONCLUSION

Petitioners respectfully request that *inter partes* review of the '118 Patent be instituted and that Claims 1-18 be cancelled as unpatentable under 35 U.S.C. § 318(b).

Respectfully submitted,

BAKER BOTTS L.L.P.

/Elizabeth Durham Flannery/

Elizabeth Durham Flannery (Reg. No. 59,509)
Lead Attorney for Petitioner

Date: August 7, 2023

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that the foregoing Petition, exclusive of the exempted portions as provided in 37 C.F.R. § 42.24(a), contains no more than 12,824 words and therefore complies with the type-volume limitations of 37 C.F.R. § 42.24(a). This Petition complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word in 14-point Times New Roman.

Respectfully submitted,

BAKER BOTTS L.L.P.

/Elizabeth Durham Flannery/

Elizabeth Durham Flannery (Reg. No. 59,509)
Lead Attorney for Petitioner

CERTIFICATE OF SERVICE

In accordance with 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on the 7th day of August, a complete and entire copy of this Petition for *Inter Partes* Review under 35 U.S.C. § 311 and 37 C.F.R. § 42.104, and all supporting exhibits were provided via Federal Express, postage prepaid, to the Patent Owner and its known representatives by serving the correspondence address of record for the '118 Patent holder and the patent holder's counsel:

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The undersigned further certifies that a courtesy copy of the complete and entire Petition, and all supporting exhibits, were provided by electronic service to counsel retained by Patent Owner in the Related Matters identified herein:

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Date: August 7, 2023

XI. APPENDIX: CLAIM LIMITATIONS

Claim #	Claim Element
1(pre)	A distribution station comprising:
1(a)	a mobile trailer;
1(b)	a manifold on the mobile trailer and connected with the pump;
1(c)	a plurality of reels on the mobile trailer;
1(d)	a plurality of flow passages, each said flow passage being connected to the manifold and running through a respective one of the reels;
1(e)	a plurality of hoses, each said hose being connected with a respective one of the flow passages via a respective one of the reels;
1(f)	a plurality of valves on the mobile trailer, each said valve situated between the manifold and a respective different one of the reels and being operable to control fluid flow through a respective one of the flow passages;
1(g)	a plurality of fluid level sensors, each aid fluid level sensors being connected or connectable with a respective different one of the hoses; and
1(h)	a controller configured to operate the valves responsive to fluid level thresholds to control fluid flow to the hoses.
2	The distribution station as recited in claim 1, wherein the controller is configured to determine fluid levels based on signals from the fluid level sensors and determine whether one or more of the fluid levels are below one or more of the fluid level thresholds.
3	The distribution station as recited in claim 2, wherein the controller is configured to open the valves for which the fluid levels are below the fluid level thresholds.
4	The distribution station as recited in claim 2, further comprising a plurality of sensor communication lines, each said sensor communication line being connected or connectable with a respective different one of the fluid level sensors, and each said sensor communication line being routed with a respective different one of the hoses.

5	The distribution station as recited in claim 4, wherein each of the hoses includes a tube and a sleeve that circumscribes the tube, and each said sensor communication line is routed in the respective different one of the hoses between the tube and the sleeve.
6	The distribution station as recited in claim 5 wherein each said sensor communication line is routed through a respective different one of the reels.
7	The distribution station as recited in claim 6 further comprising a plurality of connectors, each of the connectors being mounted on a respective different one of the reels and each of the connectors receiving a respective different one of the sensor communication lines.
8	The distribution station as recited in claim 7, wherein each of the reels includes a respective spindle, and each of 10 the sensor communication lines is routed through a respective different one of the spindles.
9	The distribution station as recited in claim 8, wherein controller is operable to open and close the plurality of valves responsive to a fuel level threshold.
10(pre)	A distribution station comprising:
10(a)	a mobile trailer;
10(b)	a pump on the mobile trailer
10(c)	a manifold on the mobile trailer and connected with the pump
10(d)	a plurality of reels on the mobile trailer;
10(e)	a plurality of hoses, each said hose being connected with the manifold and each said hose including a tube and a sleeve that circumscribes the tube;
10(f)	a plurality of valves on the mobile trailer, each said valve situated between the manifold and a respective different one of the hoses and being operable to control fluid flow from the manifold to the respective different one of the hoses;

10(g)	a plurality of fluid level sensors, each aid fluid level sensors being connected or connectable with a respective different one of the hoses; and
10(h)	a controller configured to operate the valves responsive to fluid level thresholds to control fluid flow to the hoses.
11	The distribution station as recited in claim 10 wherein the sleeve is a fabric sleeve.
12	The distribution station as recited in claim 10, further comprising bands around the hoses, the bands securing the sleeve on the tube.
13	The distribution station as recited in claim 12, wherein the bands are steel.
14	The distribution station as recited in claim 10, further comprising a communication line between the sleeve and the tube.
15(pre)	A distribution station comprising:
15(a)	a mobile trailer including a pump,
15(b)	a manifold connected with the pump,
15(c)	reels,
15(d)	flow passages connected to the manifold and running through the reels,
15(e)	hoses connected with the flow passages via the reels
15(f)	and each of the hoses including a tube and a sleeve that circumscribes the tube,
15(g)	valves situated between the manifold and the reels and operable to control fluid flow through the flow passages,
15(h)	fluid level sensors connected or connectable with the hoses,
15(i)	and a controller configured to operate the valves responsive fluid level thresholds to control fluid flow to the hoses.
16	The distribution station as recited in claim 15, wherein the controller is configured to determine fluid levels based on signals from the fluid level sensors, determine whether one or more of the fluid levels are below one or more of the fluid level thresholds, and open the valves for which the fluid levels are below the fluid level thresholds.

17	The distribution station as recited in claim 16, further comprising a plurality of sensor communication lines, each said sensor communication line being connected or connectable with a respective different one of the fluid level sensors.
18	The distribution station as recited in claim 17, wherein each said sensor communication line is routed in the respective different one of the hoses between the tube and the sleeve.