

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BAZOOKA-FARMSTAR, LLC,

Petitioner,

v.

NUHN INDUSTRIES LTD.,

Patent Owner.

Case No. IPR2023-01161
U.S. Patent No. 11,358,425

PATENT OWNER'S PRELIMINARY RESPONSE
(under 37 C.F.R. §42.107)

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. BACKGROUND ON MANURE LAGOONS AND STATE OF THE ART	4
III. THE CHALLENGED PATENT	10
IV. ALL CLAIMS WERE CONFIRMED IN <i>EX PARTE</i> REEXAMINATION	13
V. DISCRETIONARY DENIAL UNDER §325(D) IS APPROPRIATE BECAUSE BAZOOKA’S PETITION RELIES ON PREVIOUSLY CONSIDERED ART AND ARGUMENT	14
VI. LEVEL OF ORDINARY SKILL	20
VII. CLAIM INTERPRETATION	21
A. “A Fluid Pump For Pumping Liquid Manure” Recites Functional Characteristics Of The Pump, Not An Intended Use, And Cannot Be Ignored.....	21
B. “Liquid Manure” Refers To The Contents Of A Manure Lagoon, Which Includes Suspended Solids	24
C. “A Fluid Pump For Pumping Liquid Manure” is a Means-Plus-Function Limitation Under 35 U.S.C. § 112(f).....	28
D. If Not Means-Plus-Function, “A Fluid Pump For Pumping Liquid Manure ” Means “A Fluid Pump That Pumps Liquid Manure”	31
VIII. GROUND 1: CLAIMS 1-21 ARE NOT ANTICIPATED BY CARRIER.....	33
A. Discretionary Denial Under § 325(d) is Appropriate Because Ground 1 of the Petition is Cumulative of Ground 1 of Bazooka’s Reexamination Request	33
B. Carrier Lacks All Elements of the Challenged Claims	35
i. Carrier Fails to Disclose or Suggest a Fluid Pump For Pumping Liquid Manure	35
ii. Carrier Fails to Disclose All of the Wireless Remote Control Limitations of Claim 1	40
iii. Carrier Fails to Disclose The Means-Plus-Function Pump Structure Set Forth in the ‘425 Patent Specification.....	40

iv.	Carrier Fails to Disclose The Claimed Combination of Elements, Which When Considered Collectively, Define an Amphibious Manure Lagoon Agitation Vehicle	40
IX.	GROUND 2: CLAIMS 1-7 AND 12-19 ARE NOT OBVIOUS BASED ON TRUXOR IN VIEW OF YOON OR CARRIER	41
A.	Discretionary Denial Under § 325(d) is Appropriate Because Truxor and Yoon are Cumulative of Carrier, Carrier II, and Bennett.....	41
B.	The Truxor Combination Lacks All Elements of the Challenged Claims.....	45
i.	Truxor Fails to Disclose or Suggest a Fluid Pump For Pumping Liquid Manure	45
ii.	The Truxor Combination Fails to Disclose The Claimed Combination of Elements, Which When Considered Collectively, Define an Amphibious Manure Lagoon Agitation Vehicle	49
iii.	The Truxor Combination Fails to Disclose The Means-Plus-Function Pump Structure Set Forth in the ‘425 Patent Specification.....	50
C.	Petitioner Has Failed To Carry Its Burden of Demonstrating That a POSITA Would Have Had a Reasonable Expectation of Success in Combining Truxor With Yoon or Carrier	52
i.	Petitioner Has Not Presented Sufficient Evidence Demonstrating That a POSITA Would Have Had a Reasonable Expectation of Success in Adding Remote Control Functionality to Truxor.....	53
ii.	Truxor’s Manual Controls Depend on an Onboard Operator and Close Proximity Observation of the Submersed Pump	56
X.	GROUND 3: CLAIMS 1-7 AND 12-19 ARE NOT OBVIOUS BASED ON SENWATEC IN VIEW OF YOON OR CARRIER	61
A.	Discretionary Denial Under § 325(d) is Appropriate Because SenwaTec and Yoon are Cumulative of Carrier, Carrier II, Bennett, and Gaither.....	61
B.	Petitioner’s Analysis Extends Impermissibly Beyond SenwaTec’s Printed Publication [EX1012] in Violation of 35 U.S.C. § 311(b) And Must Be Disregarded.....	65
i.	The Lonnemann Declaration [EX1013] Cannot Add to the Teachings of SenwaTec’s Marketing Brochure.....	65

ii.	Exhibit A [EX1026-27] to the Lonnemann Declaration Does Not Support The Statement That SenwaTec’s Pump Was Used To Pump Manure	67
iii.	Exhibit B [EX1028] to the Lonnemann Declaration Cannot Serve as a “Printed Publication” Because Petitioner Has Not Provided a Copy of the Video	70
iv.	Exhibit B [EX1028] to the Lonnemann Declaration Cannot Serve as a “Printed Publication” Because Petitioner Has Not Demonstrated That The Video Was Publicly Accessible or Publicly Distributed.....	71
v.	Lonnemann’s Declaration [EX1013] Cannot Be Used To Add To The Disclosure Provided in Exhibit B [EX1028]	74
C.	The SenwaTec Combination Lacks All Elements of the Challenged Claims.....	76
i.	SenwaTec Fails to Disclose or Suggest a Fluid Pump For Pumping Liquid Manure	76
ii.	The SenwaTec Combination Fails to Disclose The Claimed Combination of Elements, Which When Considered Collectively, Define an Amphibious Manure Lagoon Agitation Vehicle	80
iii.	The SenwaTec Combination Fails to Disclose The Means-Plus-Function Pump Structure Set Forth in the ‘425 Patent Specification	81
D.	Petitioner Has Failed To Carry Its Burden of Demonstrating That a POSITA Would Have Had a Reasonable Expectation of Success in Combining SenwaTec With Yoon or Carrier.....	82
XI.	GROUND 4: CLAIMS 1-21 ARE NOT OBVIOUS BASED ON PUCK IN VIEW OF BRYHAM.....	87
A.	Discretionary Denial Under § 325(d) is Appropriate Because The Puck-Bryham Combination is Cumulative of Previously Applied Art.....	87
B.	The Puck-Bryham Combination Does Not Disclose All Elements of the Challenged Claims.....	90
i.	The Puck-Bryham Combination Fails to Disclose or Suggest a “Power Source Configured to Provide Power to Both the Ground Engaging Propulsion Structure And the Fluid Pump”	90
ii.	The Puck-Bryham Combination Fails to Disclose “Wireless Remote Control Configured to ... (1) Control The Ground Engaging Propulsion Structure”	91

iii.	The Puck-Bryham Combination Fails to Disclose The Means-Plus-Function Pump Structure Set Forth in the ‘425 Patent Specification	92
C.	Petitioner Has Failed To Carry Its Burden of Demonstrating That a POSITA Would Have Been Motivated to Combine Puck and Bryham With a Reasonable Expectation of Success.....	94
i.	Petitioner Has Not Presented Sufficient Evidence Demonstrating That a POSITA Would Have Been Motivated to Combine Puck and Bryham	94
ii.	Petitioner Has Not Presented Sufficient Evidence Demonstrating That a POSITA Would Have Had a Reasonable Expectation of Success in Adding Bryham’s Wheels to Puck	96
iii.	A POSITA Would Expect The Puck-Bryham Combination to Have Steering and Stability Problems That Would Render it Inoperable as a Manure Agitation Vehicle.....	99
XII.	GROUND 5: CLAIMS 1-21 ARE NOT OBVIOUS BASED ON PUCK IN VIEW OF BRYHAM AND BENNETT-II.....	101
XIII.	GROUND 6: CLAIMS 1-21 ARE NOT ANTICIPATED BY LYSENG	102
XIV.	CONCLUSION	104

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH,</i> IPR2019- 01469, Paper 6 (PTAB Feb. 13, 2020).....	15
<i>Ex parte Albrecht,</i> No. 2019-002758 (P.T.A.B. July 21, 2020)	22
<i>Ex parte Barish,</i> No. 2011-002698 (P.T.A.B. June 11, 2013).....	22
<i>Cartessa Aesthetics v. Serendia,</i> 2022 WL 3337271 (PTAB 2022)	75
<i>Eli Lilly & Co. v. Teva Pharm. Int'l GmbH,</i> 8 F.4th 1331 (Fed. Cir. 2021)	52
<i>Jazz Pharmaceuticals, Inc. v. Amneal Pharmaceuticals,</i> 895 F.3d 1347 (Fed. Cir. 2018)	73
<i>K-2 Corp. v. Salomon S.A.,</i> 191 F.3d 1356 (Fed. Cir. 1999)	17, 22
<i>Palo Alto Networks, Inc. v. Centripetal Networks, Inc.,</i> IPR2021-01520, Paper 23 (PTAB March 22, 2022).....	20
<i>Phillips v. AWH Corp.,</i> 415 F.3d 1303 (Fed. Cir. 2005)	25, 31
<i>In re Schreiber,</i> 128 F.3d 1473 (Fed. Cir. 1997)	17, 22
<i>Medtronic, Inc. v. Barry,</i> 891 F.3d 1368; USPQ2d 1208 (Fed. Cir. 2018).....	72
<i>Salpeter v. ARP Manufacturing, LLC,</i> 2019 WL 7282091 (PTAB 2019)	72

<i>Samsung Electronics Co. v. Infobridge PTE Ltd.</i> , 929 F.3d 1363 (Fed. Cir. 2019)	72
<i>Samsung SDI Co., Ltd. v. UBE Industries, Inc.</i> , IPR2017-02115, Paper 8 (PTAB March 12, 2018).....	19
<i>TQ Delta, LLC v. Cisco Sys.</i> , 942 F.3d 1352 (Fed. Cir. 2019)	52
<i>Williamson v. Citrix Online, LLC</i> , 792 F.3d 1339 (Fed. Cir. 2015)	29, 30

Other Authorities

35 U.S.C. §112(f)	28
35 U.S.C. § 305	31
35 U.S.C. § 311(b)	<i>passim</i>
35 U.S.C. § 312(a)(3)(A)	70
35 U.S.C. § 325(d)	<i>passim</i>
37 C.F.R. 1.78	3, 104
37 C.F.R. §42.100(b)	22

LIST OF PATENT OWNER’S EXHIBITS

<i>Exhibit #</i>	<i>Description</i>
2001	Petitioner’s <i>Ex Parte</i> Reexamination Requests for U.S. Patent No. 11,358,425 and U.S. Patent No. 10,974,557
2002	Decision Granting Patent Owner’s Petition for an Unintentionally Delayed Priority Claim in U.S. Patent. No. 10,124,638
2003	U.S. Patent No. 4,594,006 to Depeault (“Depeault”)
2004	Expert Declaration of Douglas S. Prairie
2005	Curriculum Vitae of Douglas S. Prairie and Case List
2006	Screenshots from Patent Owner’s YouTube Channel of Patented Product, retrieved on 10-2-23 from https://www.youtube.com/watch?v=fEgvvq9HZkk
2007	Screenshots from Petitioner’s YouTube Channel of Accused Product, retrieved on 10-2-23 from https://www.youtube.com/watch?v=3y3bSJJUOps
2008	Screenshots from Progressive Dairyman YouTube Channel of 2014 Manure Lagoon Agitation Boat Demonstration, published on 7-9-14 by Progressive Dairy, retrieved on 10-2-23 from https://www.youtube.com/watch?v=FXRS-9Ip1pE
2009	Patent Classification List for U.S. Patent No. 11,358,425, retrieved on 10-4-23 from https://patents.google.com/patent/US11358425B1/en?q=US11358425
2010	U.S. Patent No. 4,406,413 to Houle (“Houle”)
2011	U.S. Patent No. 7,833,071 to Gaither (“Gaither”)
2012	U.S. Patent No. 5,176,098 to Royle (“Royle”)
2013	U.S. Patent No. 9,462,741 to Puck (“Puck-II”)
2014	U.S. Patent No. 9,572,297 to Puck (“Puck-III”)
2015	DE2364962 to Kronseder (“Kronseder”)
2016	DE3431345 to Lüllmann (“Lüllmann”)
2017	CA2002619 to Depeault (“Depeault-II”)
2018	U.S. Patent No. 10,118,138 to Tews (“Tews”)
2019	DANIEL L. PFOST ET AL., UNIV. OF MO. EXTENSION, ANAEROBIC LAGOONS FOR STORAGE/TREATMENT OF LIVESTOCK MANURE (Oct. 2000)
2020	Screenshots from 2023 North American Manure Expo Website, retrieved on 10-2-23 from https://www.manureexpo.ca/
2021	Dictionary Definitions of “Dredging” and “Agitation”, retrieved on 9-30-23 from https://en.wikipedia.org/wiki/Dredging , https://www.merriam-webster.com/dictionary/dredging#dictionary-

	entry-1, https://www.merriam-webster.com/dictionary/agitation , and https://www.lagoonpumping.com/articles-resources/agriculture-articles/manure-articles/
2022	ENVTL. PROT. AGENCY, PRIMER FOR MUNICIPAL WASTEWATER TREATMENT SYSTEMS (Sept. 2004)
2023	U.S. DEP'T AGRIC., <i>Agricultural Waste Management Systems</i> , in AGRICULTURAL WASTE MANAGEMENT FIELD HANDBOOK ch. 9 (Dec. 2011)
2024	Screenshot of 2023 Commercial Manure Applicator Certification, retrieved on 10-3-23 from https://elearning-dnr.iowa.gov/course/index.php?categoryid=2
2025	JOSEPH AKYEAMPONG ET AL., <i>Evaluation of hydraulic excavator Human-Machine Interface concepts using NASA TLX</i> , 44 INT'L J. OF INDUS. ERGONOMICS 374, 374–82 (2014)
2026	Screenshots of 2023 Truxor Website, retrieved on 10-1-23 from https://truxor.com/en/catalog/node/products and https://truxor.com/en/catalog/node/products-truxor-machines
2027	Screenshots of 2023 Berky (formerly SenwaTec) Website, retrieved on 10-4-23 from https://www.berky.de/en/berky-nereus-240-amphi/
2028	CHRISTIAN HAAS ET AL., <i>Practical Evaluation of a Control Concept for a Remote Controlled 1.8T Excavator Using a 3D Input Device</i> , BATH/ASME 2022 Symposium on Fluid Power and Motion Control, ISBN: 978-0-7918-8633-5, FPMC2022-88959, V001T01A012-1 thru V001T01A012-7 (2022)

I. INTRODUCTION

It is common practice in livestock farming to wash animal manure into a pit or lagoon. The manure stored in these manure lagoons is pumped out at regular intervals and applied as fertilizer to fields. During storage, the manure in a lagoon stratifies into layers, which often includes a hard crust on the surface. Thus, the manure in manure lagoons needs to be mixed occasionally, including before pump-out.

Claims 1-21 of U.S. Patent No. 11,358,425 (“the ‘425 Patent”) (collectively, “the Challenged Claims”) are directed to a new and non-obvious amphibious vehicle for disrupting the surface crust formed on a manure lagoon and recirculating the liquid manure contained in the manure lagoon. Unlike any of the machinery disclosed in the prior art, the claimed vehicle can be deployed, operated, and retrieved by an operator who is remote from the vehicle and therefore the manure lagoon.

This is a clear-cut case where the Board should exercise its discretion and deny institution under 35 U.S.C. § 325(d) because the Petition unsuccessfully repackages prior art combinations and arguments that were already considered during prosecution and that were unsuccessful in *ex parte* reexamination proceedings filed by the Petitioner (Reexamination Nos. 90/019,107 and 90/019,076). As previously found by Examiner Avila and the Central

Reexamination Unit (“CRU”), the cited art misses the mark since none of the references disclose or suggest a remote-controlled amphibious vehicle that is mobile on both land and liquid and that pumps manure. EX1002, 36; EX1038, 6.

The Petitioner’s argument in Ground 1 that Carrier anticipates the Challenged Claims is the same as Ground 1 of its reexamination request. EX2001, 2.

Grounds 2 and 3 are cumulative of Ground 1 as demonstrated by the fact that they are argued as alternatives to anticipation based on Carrier alone and violate 35 U.S.C. § 311(b) by citing evidence that is outside the information contained in the printed publications themselves. The Truxor [EX1006] and SenwaTec [EX1012] publications are marketing brochures for general-purpose amphibious vehicles. Petitioner improperly attempts to augment the printed publications with evidence that these vehicles were used to agitate manure lagoons, but the Board cannot consider evidence of prior public uses under § 311(b). Invalidity challenges based on such evidence fall squarely within the exclusive purview of Article III courts and therefore highlights why discretionary denial is appropriate.

Grounds 4 and 5 attempt to modify the manure agitation boat disclosed in Puck [EX1014] with the ground engaging wheels of Bryham [EX1015]. But Puck

was considered in combination with substantially the same references as Bryham [EX1015] and Bennett-II [EX1017] during both prosecution and reexamination. EX1036, 31; EX1038, 6; EX2001, 2.

Ground 6, which cites an August 29, 2013 article (“Lyseng” [EX1019]) describing the Patent Owner’s own commercial embodiment of the patented vehicle, relies on the faulty premise that the ‘425 Patent cannot claim priority back to the Patent Owner’s August 19, 2013 provisional application due to a typographical error that was made in the Application Data Sheet (“ADS”) filed with a parent application (now U.S. Patent No. 10,124,638, “the ‘638 Patent”). This Ground is moot because the Patent Office has granted the Patent Owner’s petition to accept an unintentionally delayed priority claim under 37 C.F.R. 1.78 for the ‘638 Patent, which corrects the inadvertent error contained in the ADS for the ‘638 Patent. *See* EX2002, 2-3. Because the ‘425 Patent properly claims priority back to the Patent Owner’s August 19, 2013 provisional application, the August 29, 2013 Lyseng article does not qualify as prior art.

Institution should be denied as there are several critical shortcomings relative to each Ground in the Petition and the Petitioner has not demonstrated that it is reasonably likely to prevail in having one or more of the Challenged Claims rendered unpatentable.

II. BACKGROUND ON MANURE LAGOONS AND STATE OF THE ART

Two pieces of information are necessary to understand the invention described in the Challenged Claims: (1) the characteristics of a manure lagoon that make for a unique operating environment, and (2) the state of the art in manure lagoon agitation equipment at the time of the Patent Owner's filing date.

The "BACKGROUND" section of the '425 Patent explains that animal manure produced by cattle and hogs is typically washed into a farm lagoon for storage and later pump-out for land application as fertilizer:

BACKGROUND

Manure produced during animal husbandry, particularly hog and cattle manure, is transferred by washing to a pit or lagoon for storage prior to removal for land application or further processing. During storage, a crust can develop on the surface of the pit or lagoon that must be disrupted prior to or during removal of the manure. Pumps are employed for this purpose with jets that return a percentage of the manure back to the pit or lagoon in the form of a high volume spray to disrupt the crust and recirculate the manure. Pumps for use in recirculating manure from smaller pits are known; however, these pumps are typically suitable for accessing the pit or lagoon from its edge and are connected to a tractor or similar land vehicle for operational power. They are therefore limited in their ability to recirculate manure to the middle of large lagoons, which are becoming increasingly common as the size of animal husbandry operations increases.

EX1001, 1:33-49. A unique problem that occurs with manure lagoons is that over time a floating "crust" develops on the surface that must be disrupted (i.e., broken-up) before pump-out. U.S. Pat. No. 4,594,006 to Depeault [EX2003], which is

cited on the face of the '425 Patent, explains that this crust can become relatively hard, can reach six feet in thickness, and has a consistency of dry peat moss:

2. Description of the Prior Art

Farm animal manure is a slurry containing liquids and solids in suspension. Such manure must be held in holding reservoirs near a barn such as in-the-ground tanks or lagoons. A by product of keeping animal manure is that it can, when required, be spread by suitable spreaders on fields as a fertilizer. The apparatus for spreading the manure normally comprises a closed tank mounted on a vehicle and communicating with a spreader. When required, the manure in the holding reservoir must be transferred into the spreading tanks by suitable pumps.

However, the manure in the holding reservoir tends to separate and the solids may settle to form a thick layer at the bottom of the reservoir and may also form a thick solid crust on the surface of the liquids. Such crust has a consistency of dry peat moss and must therefore be broken up before it can be mixed with the liquid into a slurry and be transferred from the reservoir into the spreading apparatus. It is necessary, therefore, to provide an apparatus for both mixing the solids and forming a slurry with the liquids in the reservoir as well as to have a pumping apparatus for pumping the so-formed slurry into the tank for the spreading apparatus.

Canadian Pat. No. 1,126,257 issued June 22, 1982, 35 describes a proposed solution to the problem by providing a combined slurry mixing device and pump for the purpose of transferring the slurry to some other holding means such as a tank on a spreading apparatus.

There are other patents which describe generally 40 devices for mixing manure in reservoirs for forming a slurry and then pumping the slurry. One of the problems which still exist even in the light of the solutions mentioned above, is the breaking up and mixing of the top crust. The top crust in the reservoir is mostly cow 45 manure. This upper or floating crust can become relatively hard and can reach six feet in thickness. It causes a problem from a mixing point of view since as shown in Canadian Pat. No. 1,126,257, the mixing devices are normally provided at the bottom of the apparatus and 50 near the bottom of the reservoir. In the case of the above mentioned Canadian patent, a nozzle is provided for diverting recirculated slurry as a jet towards the upper crust to try and break the crust. However, it has 55 been found with conventional mixing devices including the above mentioned Canadian patent, that the breaking up of the upper crust and the mixing thereof is very time consuming and therefore, can be costly.

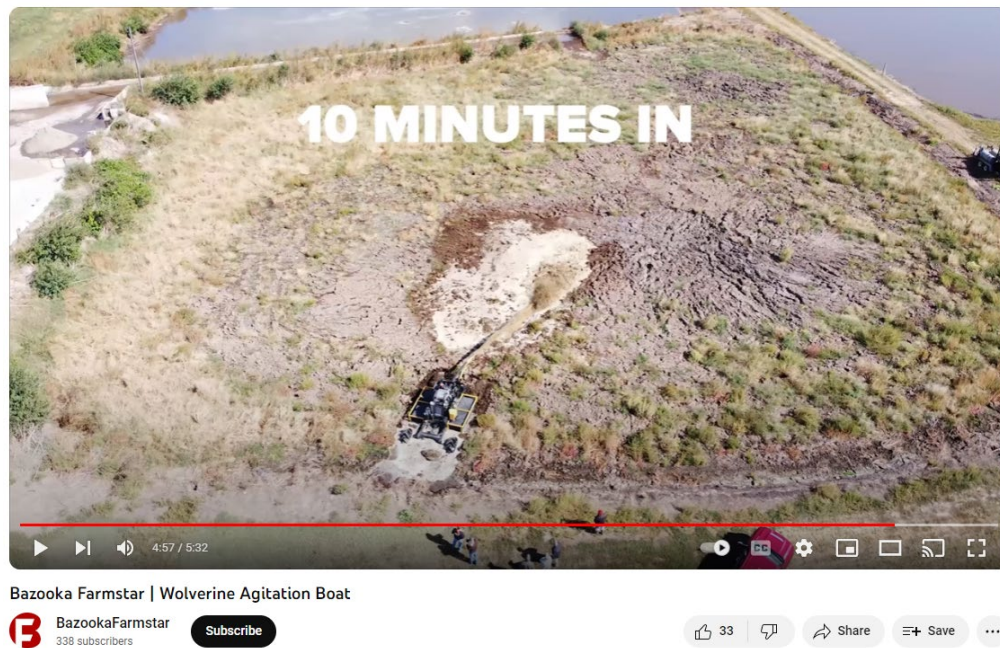
EX2003, 1:13-58.

The claims of the '425 Patent, which are embodied in the Patent Owner's commercial product, are directed to an amphibious vehicle that is specially adapted for the particular purpose of breaking up the crust that forms on the surface of manure lagoons and recirculating the manure in manure lagoons. EX1001, 8:5-27.

As is often the case, pictures are worth a thousand words. The video screenshots below depict the Patent Owner's commercial embodiment of the '425 Patent and the Petitioner's product (accused of infringement) breaking up the surface crust formed on a manure lagoon:



EX2006, 2.¹



EX2007, 3.²

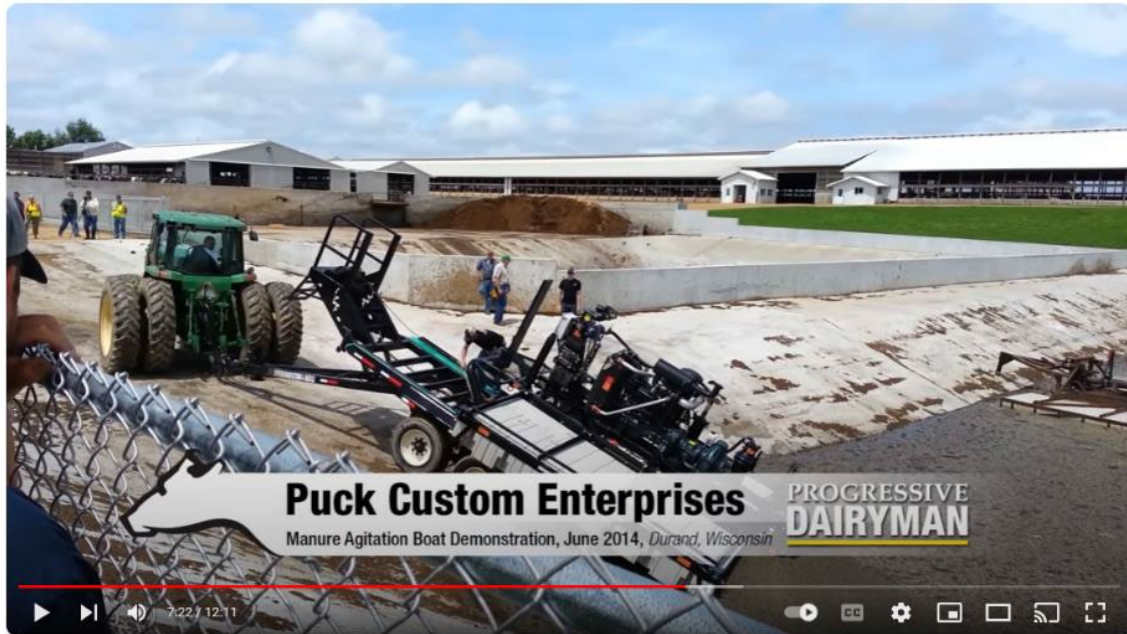
¹ Video at <https://www.youtube.com/watch?v=fEgvvq9HZkk>

² Video at <https://www.youtube.com/watch?v=3y3bSJJUOps>

Manure lagoons are also unique in that the contents of a manure lagoon need to be stirred into a near-homogenous mixture across the entire lagoon so that the consistency, nutrients, and chemical properties (e.g., pH) is as uniform as possible. EX2004, ¶21. This is necessary for a consistent application of fertilizer after the manure is pumped from the lagoon and is distributed over crops. *Id.* These aspects present a unique operating environment for manure agitation vehicles. EX2004, ¶22.

When the Patent Owner filed its provisional application in 2013, farmers stirred/mixed manure lagoons with either pumps situated at the edge of the manure lagoon, which were typically driven by the power-take-off (“PTO”) of an agricultural tractor (e.g., the manure pump described in Depeault [EX2003]) or manure agitation “boats” (e.g., the boat described in Puck [EX1014]). These manure agitation “boats” were floating barge-like structures that had to be launched and retrieved using a trailer and/or tractor. This is depicted in the screen shot below, which is from a video taken by the Progressive Dairyman publication of a manure agitation boat demonstration held in 2014. Notably, this manure agitation boat demonstration featured traditional manure agitation boats, including

the commercial embodiment of the Puck reference [EX1014], alongside the Patent Owner’s newly-released amphibious manure agitation boat:



Equipment demonstrations: Manure agitation boats



Progressive Dairy
3.31K subscribers

Subscribe

100



Share

Save



Equipment demonstrations: Manure agitation boats



Progressive Dairy
3.31K subscribers

Subscribe

100



Share

Save



EX2008, 4-5.³ As this video illustrates, the Patent Owner’s commercial embodiment of the ‘425 Patent was the first of its kind and was the only manure agitation “boat” that could drive into, operate within, and drive out of the manure lagoon by wireless remote control – meaning that it did not require a trailer and/or tractor for launching and retrieval.

III. THE CHALLENGED PATENT

The ‘425 Patent issued on June 14, 2022 and is one of several continuations filed off international patent application number PCT/CA2014/050789 (filed August 18, 2014) and U.S. Provisional Application No. 61/867,598 (filed August 19, 2013). The ‘425 Patent issued with 21 claims, all of which have been challenged by the Petition. Claim 1, below, is the sole independent claim⁴:

³ Video at <https://www.youtube.com/watch?v=FXRS-9Ip1pE>

⁴ The dependent claims of the ‘425 Patent are patentable for additional reasons, but the Patent Owner has focused its arguments on Claim 1 only for the limited purpose of arguing against institution.

1. An amphibious vehicle comprising:
 - a floatable vehicle body;
 - ground engaging propulsion structure comprising a plurality of ground engaging elements powered by a hydraulic motor;
 - a fluid pump for pumping liquid manure;
 - a power source connected to a hydraulic pump, the power source configured to provide power to both the ground engaging propulsion structure and the fluid pump; and,
 - a wireless remote control configured to enable an operator who is remote from the vehicle to: (1) control the ground engaging propulsion structure; (2) control a flow of liquid manure from the fluid pump; (3) control at least one of the speed and direction of the vehicle when the vehicle is ground engaging; and, (4) control at least one of the speed and direction of the vehicle when the vehicle is floating.

Figures 2 and 3 of the '425 Patent (below), depict the floatable vehicle body

(1), the ground engaging propulsion structure comprising a plurality of ground engaging elements (3) and (4), the fluid pump for pumping liquid manure (9), the power source (7), and the antenna of the wireless remote control structure (40):

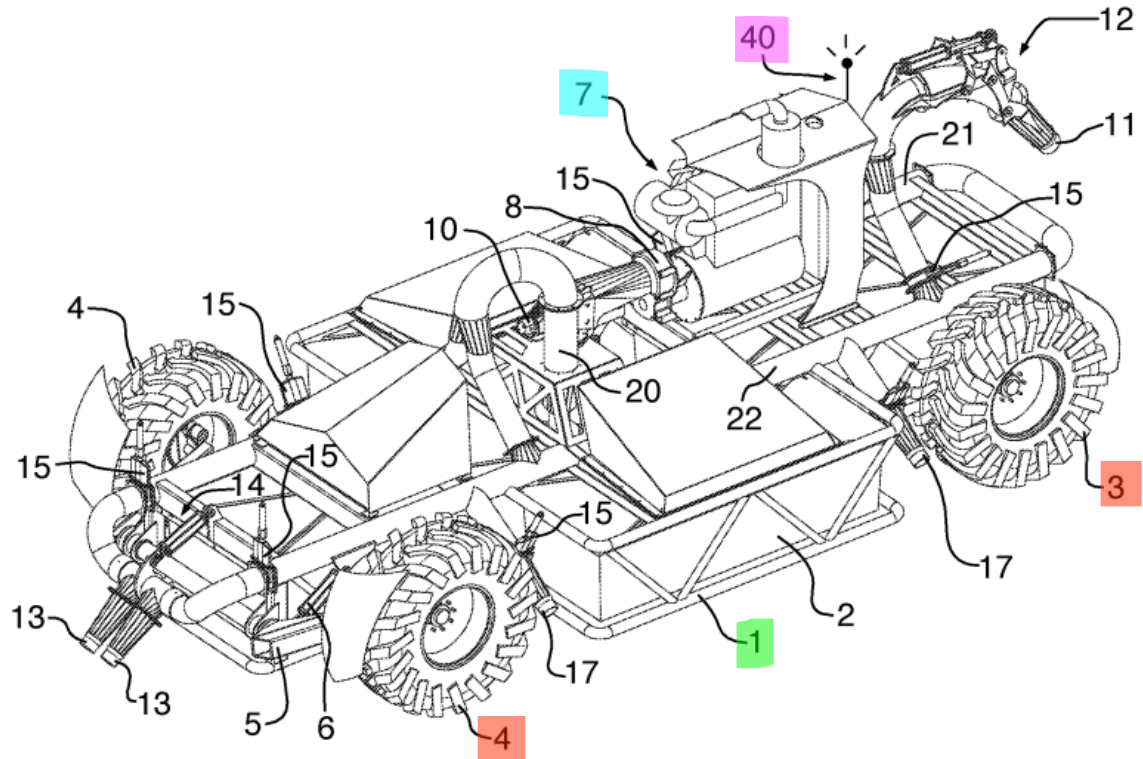


FIG. 2

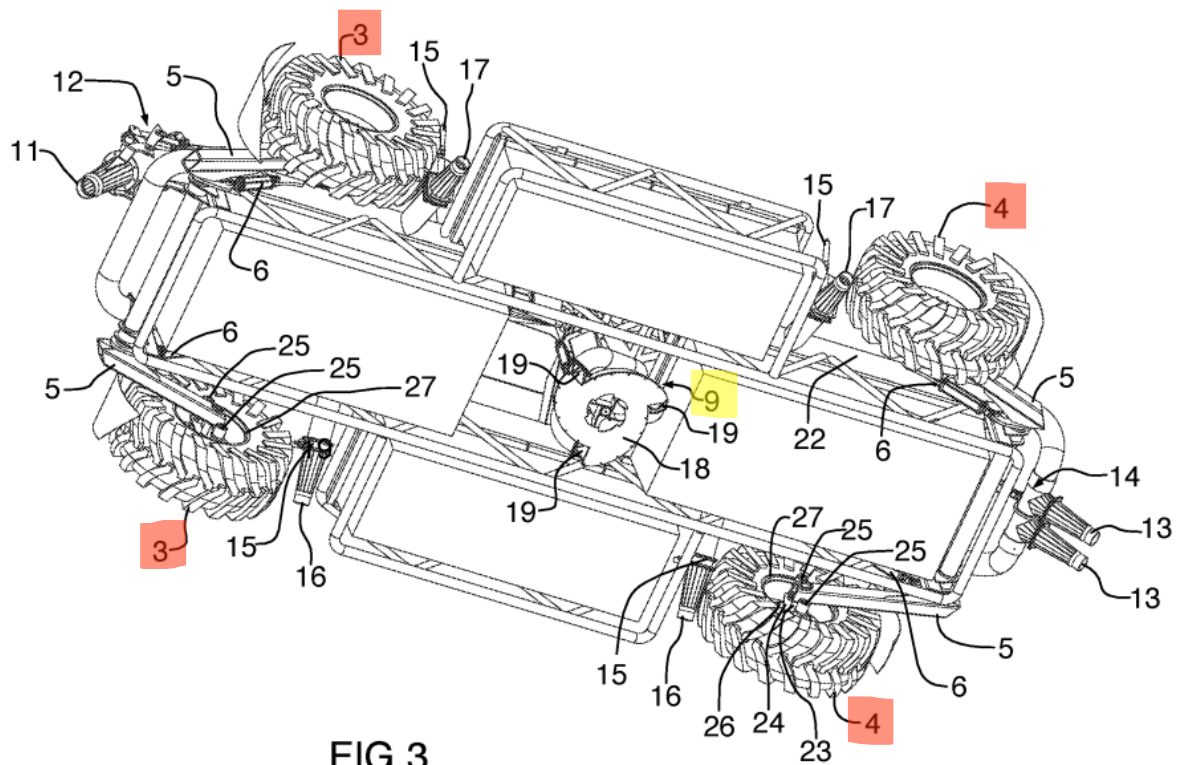


FIG. 3

IV. ALL CLAIMS WERE CONFIRMED IN *EX PARTE* REEXAMINATION

Shortly after the Patent Owner commenced the underlying litigation against the Petitioner, the Petitioner filed a request for *ex parte* reexamination of U.S. Pat. No. 10,974,557 (“the ‘557 Patent”) and its child, the ‘425 Patent. Reexamination was granted and the CRU confirmed the patentability of all claims in the ‘425 Patent.⁵

The CRU correctly found that a pump that pumps manure (like the one recited in the ‘425 Patent claims) has different requirements than one that pumps water and that, without impermissible hindsight, a POSITA would not have combined a device like Carrier (i.e., a general-purpose amphibious vehicle) with a device like Puck (i.e., a traditional manure agitation boat):

⁵ The CRU also confirmed the patentability of all claims of the ‘557 Patent, subject to minor amendments, and determined that 67 new claims were patentable. EX1037, 2-4.

Reexamination

STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

The following is an examiner's statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding: claims 1-21 are allowed over the art cited with the request. The examiner has considered and found persuasive the arguments that a pump that pumps manure has different requirements than one that pumps water. These arguments were submitted with the response to the first action in reexamination 90/019,076 that stems from the grandparent application of this patent. Further, without impermissible hindsight, there would not be proper motivation to combine a device like Carrier with a device like Puck. Therefore, the examiner has determined that the prior art does not reasonably show an amphibious vehicle that can be mobile on both land and liquid that pumps manure, in combination with the other claimed elements.

EX1038, 6.

The Petitioner has failed to demonstrate that the CRU's well supported decision should be overturned.

V. DISCRETIONARY DENIAL UNDER §325(D) IS APPROPRIATE BECAUSE BAZOOKA'S PETITION RELIES ON PREVIOUSLY CONSIDERED ART AND ARGUMENT

Under 35 U.S.C. § 325(d), the Board has discretion to deny institution of Petitions asserting the "same or substantially the same prior art or arguments" as those previously presented to the Office.

The PTAB has set forth the following "two-part framework" for exercising discretionary denial:

Thus, under § 325(d), the Board uses the following two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.⁹ If a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute *inter partes* review. If reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability. At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6, 8-9 (PTAB Feb. 13, 2020).

Each Ground of this Petition presents the same or substantially the same prior art that has been considered by the Office multiple times. Carrier (Grounds 1-3), Puck (Grounds 4-5), and Bennett II (Ground 5) were all considered during both prosecution and reexamination.⁶ The relevant teachings of Yoon (i.e.,

⁶ There are two Carrier references with substantially similar teachings (Carrier - US 2012/0185129 and Carrier II - US 7,478,817) and two Bennett references, which share a common specification (Bennett - US 2014/0288763 and Bennett II - US 2021/0331752). Carrier II was considered during prosecution of the '425 Patent, while both Carrier and Carrier II were considered during reexamination of the '425 and '557 Patents. Bennett was considered during both prosecution and reexamination of the '425 and '557 Patents.

wireless remote control) in Grounds 2 and 3 are cumulative of the teachings of Carrier as demonstrated by the fact that Carrier and Yoon are used interchangeably by the Petitioner in Grounds 2 and 3. Truxor (Ground 2) and SenwaTec (Ground 3), which disclose manned amphibious vehicles equipped with optional fluid pumps, are cumulative of Carrier, as demonstrated by the fact that Petitioner argues Grounds 2 and 3 as alternatives to anticipation based on Carrier alone (Ground 1).

Petitioner also presents the same or substantially the same arguments that it previously presented to the Office in its requests for reexamination of the ‘425 and ‘557 Patents – that the recitation of “a fluid pump for pumping liquid manure” is intended use and not entitled to patentable weight. Notably, the CRU withdrew its initial rejection that “the type of material pumped is intended use and the Carrier device is clearly capable of pumping manure” when it confirmed the claims. EX1037, 67.

Thus, part (1) of the *Advanced Bionics* framework favors discretionary denial under § 325(d).

Petitioner also fails to carry its burden of demonstrating that both the Examiner and the CRU made a material error under part (2) of the *Advanced Bionics* framework

With respect to Ground 1, argues that the CRU should have interpreted “a

fluid pump for pumping liquid manure” as a non-limiting statement of intended use and alleges that “the CRU accepted the attorney’s incorrect argument that Carrier’s pump, which pumped water from lakes and streams, was not ‘for pumping liquid manure.’” Petition, 6. But Petitioner has not carried its burden of showing that the CRU made a material error when it found the language “for pumping liquid manure” to be limiting or that it was material error to find that Carrier’s pump was not for pumping liquid manure.

As a matter of law, inventors are free to claim elements of their inventions in functional terms. *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997). Functional claiming is different from recitations of intended use and limits the scope of the claims. *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1363 (Fed. Cir. 1999). The language at issue here is an example of functional claiming, not a recitation of intended use.

It is also beyond dispute that Carrier teaches a pump for pumping water out of lakes, ponds, and streams for use in firefighting. EX1005, ¶63. Petitioner makes a warped and factually incorrect argument that liquid manure has the same consistency as water such that the water pump disclosed in Carrier could be used to pump liquid manure. This argument is based solely on extrinsic evidence that is irreconcilable with the ‘425 Patent specification, which explains that liquid manure includes solid materials that can plug typical pumps. EX1001, 3:14-18.

Petitioner has not and cannot demonstrate that reconsideration of its reexamination request is warranted when the “additional evidence” it cites is extrinsic and contradictory to the ‘425 Patent’s disclosure.

In Grounds 2 and 3, Petitioner attempts to correct the deficiencies in Carrier by arguing that Truxor and SenwaTec disclose pumps for pumping liquid manure. The problem here is that the printed publications describe using the Truxor and SenwaTec vehicles in ponds and lakes for weed removal and dredging. EX1006, 1; EX1012, 1. The printed publications themselves make no reference to manure or manure lagoons. The “additional evidence and facts” Petitioner presents regarding alleged public uses of the Truxor and/or SenwaTec vehicles in manure lagoons is outside of the printed publications themselves. This “additional evidence” cannot warrant reconsideration of the patentability determinations made by the Examiner and the CRU because the Board cannot consider public uses under 35 U.S.C. § 311(b).⁷

For Grounds 4 and 5, Petitioner has failed its burden of showing that the Examiner erred in allowing the ‘425 Patent over his applied combination of Royle, Remley, and Puck (EX1036, 31) and that the CRU erred in confirming the

⁷ Petitioner’s reliance on evidence of how the Truxor and/or SenwaTec vehicles were publicly used also undermines the effectiveness of Petitioner’s *Sotera* Stipulation [EX1039]. If Petitioner is free to assert this evidence in both an IPR and the underlying litigation, then discretionary denial is appropriate under *Fintiv* and §314(a).

claims of the ‘425 Patent over Petitioner’s proposed combination of Carrier II in view of Puck. In particular, the Petitioner’s analysis uses the same “impermissible hindsight” bias the CRU explicitly rejected regarding the combination of Carrier and Puck. EX1038, 6.

Ground 6 is moot because the Patent Office has granted the Patent Owner’s petition to accept an unintentionally delayed priority claim for the ‘638 Patent and therefore cannot provide an independent basis to institute this IPR. EX2002, 2-3.

Thus, Petitioner has failed to carry its burden under part (2) of the *Advanced Bionics* framework and the Board should deny institution.

Consideration of all the above flaws in the aggregate ultimately informs the Board’s discretionary authority under 35 U.S.C. § 325(d) and weighs heavily against institution. Petitioner should not be afforded a “second bite at the apple” after its reexaminations failed through yet another administrative attack based on a flawed analysis of prior art that is the same or cumulative of the references previously considered by the Examiner and the CRU and that confusingly intertwines invalidity theories that are ineligible for consideration by the Board. *Samsung SDI Co., Ltd. v. UBE Industries, Inc.*, IPR2017-02115, Paper 8, 27-28 (PTAB March 12, 2018) (entering discretionary denial when the petitioner did not present a compelling reason why the PTAB should re-adjudicate

substantially the same prior art and arguments presented during prosecution and reexamination); *Palo Alto Networks, Inc. v. Centripetal Networks, Inc.*, IPR2021-01520, Paper 23, 29-30 (PTAB March 22, 2022) (entering a discretionary denial due to overlap with a prior reexamination).

VI. LEVEL OF ORDINARY SKILL

In keeping with its incorrect theme that the ‘425 Patent is directed to a general-purpose pumping vehicle, Petitioner erroneously defines the “level of ordinary skill in the art” in over-generalized terms. Petitioner asserts that a person of ordinary skill in the art (a “POSITA”) has “a bachelor’s degree in mechanical engineering or similar field, and two years of professional experience in marine and off-road vehicles.” Petition, 31. But the ‘425 Patent does not suggest that the claimed vehicle finds utility outside of operating in manure lagoons and this definition inexplicably excludes those most familiar with manure agitation equipment – livestock farmers and the manure application business. EX2004, ¶62. For this key threshold issue, Petitioner relies solely on the unsupported pronouncement of its technical expert, who does not appear to have any farming experience himself. *See* EX1003. Petitioner’s statements about what would have been understood by or obvious to a POSITA are therefore undermined by the fact that they are made through the wrong lens.

The '425 Patent repeatably mentions farming, manure, and the problems encountered when storing animal manure in farm lagoons or pits. *See, e.g.*, EX1001, 1:24-29, 1:33-52, 3:14-21, 8:5-27. Based on the totality of the '425 Patent disclosure, a POSITA is "a livestock farmer or commercial manure applicator familiar with manure agitation equipment or an engineer with at least 2 years of experience designing agricultural equipment and knowledge of manure agitation equipment." EX2004, ¶63.

VII. CLAIM INTERPRETATION

A. **"A Fluid Pump For Pumping Liquid Manure" Recites Functional Characteristics Of The Pump, Not An Intended Use, And Cannot Be Ignored**

Claim 1 of the '425 Patent mentions the pumping of liquid manure in two places:

1. An amphibious vehicle comprising:
 - a floatable vehicle body;
 - ground engaging propulsion structure comprising a plurality of ground engaging elements powered by a hydraulic motor;
 - a fluid pump for pumping liquid manure;
 - a power source connected to a hydraulic pump, the power source configured to provide power to both the ground engaging propulsion structure and the fluid pump; and,
 - a wireless remote control configured to enable an operator who is remote from the vehicle to: (1) control the ground engaging propulsion structure; (2) control a flow of liquid manure from the fluid pump; (3) control at least one of the speed and direction of the vehicle when the vehicle is ground engaging; and, (4) control at least one of the speed and direction of the vehicle when the vehicle is floating.

Taking the same position it did in its reexamination request, Petitioner argues that these references to the pumping and flow of liquid manure are recitations of intended use that do not limit the scope of the Challenged Claims. Petition, 6, 31-32. Petitioner's argument with respect to intended use is incorrect for at least three reasons.

First, the cases Petitioner relies upon – *Ex parte Barish*, No. 2011-002698 (P.T.A.B. June 11, 2013) and *Ex parte Albrecht*, No. 2019-002758 (P.T.A.B. July 21, 2020) – are appeals of final rejections that were issued by examiners and therefore apply the broadest reasonable interpretation standard for claim construction. *See Ex parte Barish*, 4. The Board must apply the *Phillips* claim construction standard in this IPR (*see* 37 C.F.R. §42.100(b)) and that precludes the Board from adopting a claim construction that ignores the references to “liquid manure” in the Challenged Claims as quote unquote ‘intended use.’ Indeed, the references to “pumping liquid manure” and wirelessly controlling “flow of liquid manure from the fluid pump” in the Challenged Claims are functional limitations, not recitations of intended use, and cannot be ignored under clear Federal Circuit precedent. *In re Schreiber*, 128 F.3d at 1478 (“A patent applicant is free to recite features of an apparatus either structurally or functionally.”); *K-2 Corp.*, 191 F.3d at 1363 (“The **functional language is, of course, an additional limitation** in the [apparatus] claim.”) (emphasis added).

Second, when read as a whole, the ‘425 Patent is clearly directed to an amphibious vehicle that is specially adapted for the particular purpose of disrupting the crust that forms on the surface of manure lagoons and recirculating the liquid manure in manure lagoons. Petitioner opportunistically focuses on the more general language of “amphibious pumping vehicle” found in the Title of the ‘425 Patent, the preamble of Claim 1, which recites an “amphibious vehicle,” and the first sentence in the TECHNICAL FIELD section to argue that the ‘425 Patent covers any amphibious pumping vehicle, but the ‘425 Patent never suggests that the claimed amphibious vehicle could be put to other uses besides manure lagoon operation. EX2004, ¶¶62, 69. Instead, the ‘425 Patent discusses the disruption and recirculation/pumping of liquid manure in multiple places throughout the specification as the sole purpose for the claimed vehicle. EX1001, 1:24-29, 1:33-52, 3:14-21, 8:5-27. Examiner Avila understood this when he classified the ‘425 Patent as being directed to “amphibious vehicles specially adapted for particular purposes” and “manure” handling:

Classifications

- [B60F3/0061](#) Amphibious vehicles specially adapted for particular purposes or of a particular type
- [A01C23/045](#) Filling devices for liquid manure or slurry tanks
- [A01C3/026](#) Storage places for manure, e.g. cisterns for liquid manure; Installations for fermenting manure with mixing or agitating devices

EX2009, 2.

Third, the fact that Claim 1 additionally recites “a wireless remote control configured to enable an operator who is remote from the vehicle to ... (2) control a flow of liquid manure from the fluid pump” after reciting “a fluid pump for pumping liquid manure” supports the Patent Owner’s position that the claim language limits the scope of the claims to the pumping and flow of liquid manure. This is not a case where the claimed function is referenced only once. Instead, the claimed inter-relationship between the fluid pump and wireless control over a flow of liquid manure from the amphibious vehicle demonstrates that the claims describe an amphibious vehicle that is specially adapted for the particular purpose of pumping liquid manure, which is described in the claims using functional terms.

For these reasons, the Board cannot ignore the language in Claim 1 discussing the pumping and flow of liquid manure.

B. “Liquid Manure” Refers To The Contents Of A Manure Lagoon, Which Includes Suspended Solids

The Petitioner’s treatment of the term “liquid manure” raises its own claim construction issues. Petitioner argues that liquid manure has the same consistency as water because this term would be narrowly interpreted as manure with less than 5 percent suspended solids. Petition, 34-35. This definition of “liquid manure” is incorrect for at least two reasons.

First, Petitioner's argument is based solely on extrinsic evidence. Through its expert witness, Petitioner argues that the term "liquid manure" in the '425 Patent should be defined according to a manure classification found in a waste management handbook (EX1066), which classifies manure into four types: liquid, slurry, semisolid, and solid. Petition, 34; EX1066, 89. But when interpreting claims, the primary focus must be on the intrinsic evidence, which consists of the claims, specification, and prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314-17 (Fed. Cir. 2005). There is simply no reason why the term "liquid manure" in the '425 Patent should be limited to the "liquid" classification found in a figure of some handbook that was not referenced in the '425 Patent or cited during prosecution. The classifications found in this handbook are just one suggested guideline for classifying different consistencies of manure and cannot operate to limit the Patent Owner's invention. EX2004, ¶79. Indeed, the prior art patents cited on the face of the '425 Patent also use the term "liquid manure" more broadly to refer to the contents of a manure lagoon as opposed to narrower formulations based on the percentage of total solids (%TS) like those found in the handbook and the Petitioner's construction. *See* US9462741B2 to Puck [EX2013]; US9572297B2 to Puck [EX2014]; DE2364962A1 to Kronseder [EX2015]; DE3431345A1 to Lüllmann [EX2016]. EX2004, ¶80. Stated differently, there is no record evidence that anyone in the art has limited their manure agitation

inventions in the way Petitioner has proposed. *See* US4406413A to Houle [EX2010]; US4594006A to Depeault [EX2003]; CA2002619A1 to Depeault [EX2017]; US10118138B2 to Tews [EX2018]. EX2004, ¶80.

Second, the Petitioner’s attempt at limiting the claim term “liquid manure” to a water-like consistency having less than 5 percent suspended solids is contrary to statements made in the ‘425 Patent, which equate “liquid manure” to the manure contained in a farm lagoon. Indeed, the “TECHNICAL FIELD” section of the ‘425 Patent equates “liquid manure” to “animal manure contained in a farm lagoon”:

TECHNICAL FIELD

The invention relates to pumps and vehicles equipped for ²⁵ pumping. In particular, the invention relates to manure pumps and amphibious vehicles equipped for **pumping liquid manure, such as animal manure contained in a farm lagoon.**

30

EX1001, 1:25-29. The ‘425 Patent specification also explains that liquid manure stored in a manure lagoon has a crust formed on its surface and includes solid materials that can clog traditional pumps:

BACKGROUND

Manure produced during animal husbandry, particularly hog and cattle manure, is transferred by washing to a pit or lagoon for storage prior to removal for land application or further processing. During storage, a crust can develop on the surface of the pit or lagoon that must be disrupted prior to or during removal of the manure. Pumps are employed for this purpose with jets that return a percentage of the manure back to the pit or lagoon in the form of a high volume spray to disrupt the crust and recirculate the manure. Pumps for use in recirculating manure from smaller pits are known; however, these pumps are typically suitable for accessing the pit or lagoon from its edge and are connected to a tractor or similar land vehicle for operational power. They are therefore limited in their ability to recirculate manure to the middle of large lagoons, which are becoming increasingly common as the size of animal husbandry operations increases.

Accordingly, there is a need for improved pumps and vehicles equipped for pumping, particularly pumps and vehicles suitable for use with large manure lagoons.

EX1001, 1:33-53.

telescoping connections to the single fluid conduit. Lowering the fluid pump for immersion into the fluid obviates the need for priming the fluid pump, which can be problematic when the fluid is manure comprising solid materials that can plug the pump or priming structure. Immersion of the pump also simplifies intermittent operation of the pump, due to eliminating potential loss of prime, and reduces the need for pump maintenance.

EX1001, 3:14-21.

5 In operation, an operator uses the remote controls to maneuver the vehicle to the lagoon entrance, drive the vehicle into the lagoon, raise the ground engaging propulsion structure (wheels), lower the fluid pump, begin pumping fluid with the fluid pump through the fluid conduits and
10 selectively open at least the second fluid nozzles to cause the vehicle to move out on to the surface of the lagoon. The valves associated with the side fluid nozzles may also be opened or closed to provide directional control of the vehicle on the lagoon. Once the vehicle is in the desired position, the
15 valves associated with the first fluid nozzle are opened and the first articulation structure is used to position the first fluid nozzle at a desired angular orientation relative to the vehicle body. This is generally an upward orientation so that the
20 fluid is sprayed widely to break crusts of material floating on the surface of the lagoon. In this manner, fluid is recirculated and directed to desired locations in the lagoon. As fluid is emptied from the lagoon, the floating vehicle is permitted to lower with the fluid level. When the lagoon has been sufficiently emptied, the operator is able to reverse the
25 foregoing process in order to maneuver the vehicle to the lagoon exit, lower the wheels, and drive the vehicle up the muddy bank out of the lagoon.

EX1001, 8:5-27. These statements in the ‘425 Patent directly conflict with Petitioner’s attempt to define “liquid manure” as having substantially the same characteristic as water with little to no suspended solids. Petition, 35.

The intrinsic evidence makes clear that the claim term “liquid manure” means “animal manure contained in a farm lagoon, which includes suspended solids.” EX2004, ¶82.

C. “A Fluid Pump For Pumping Liquid Manure” is a Means-Plus-Function Limitation Under 35 U.S.C. § 112(f)

There is a presumption that means-plus-function claim interpretation under 35 U.S.C. § 112(f) applies when a claim recites a “means for [performing a

function],” but this is no longer a strong presumption. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015). Here, the claim language reciting “a fluid pump for pumping liquid manure” follows the traditional means-plus-function format, but uses the words “fluid pump” in place of the word “means.” Under *Williamson*, the essential inquiry is not merely the presence or absence of the word ‘means’ but whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. *Id.* at 1348.

To a POSITA, the term “fluid pump” refers to any component capable of performing a pumping function, would include things for pumping liquid or gas, and are commonly represented as generic black box symbols in engineering schematics. EX2004, ¶¶72, 73. As such, the term “fluid pump” by itself does not connote any particular structure. EX2004, ¶72. The Petitioner and its expert admit as much, arguing that “the extrinsic evidence shows that no specific structure is required ‘for pumping liquid manure.’” Petition, p. 34; EX1004, §IV(F)(i)(b). In other words, there is no discernable difference between “a fluid pump for pumping liquid manure” and “means for pumping liquid manure.” EX2004, ¶74.

Because “a fluid pump for pumping liquid manure” is a means-plus-function limitation, the Board must identify the structure disclosed in the specification for performing the claimed function of “pumping liquid manure.” *See Williamson*,

792 F.3d at 1351. Here, this task is an easy one because the ‘425 Patent specification describes the structure that performs the manure pumping function quite clearly:

65 at the same or different rotational speeds.

The fluid pump may comprise a pump housing configured for immersion within the fluid. The pump housing may

3

comprise a bottom fluid inlet and at least two tangential fluid outlets. A greater number of tangential fluid outlets may be provided, for example three fluid outlets. The tangential

EX1001, 2:66 – 3:2.

Referring to FIG. 8, the fluid pump 9 comprises a pump 20 housing 18 comprising three tangential fluid outlets 19 that are connected via flexible pump outlet conduits 33 to a combiner 34 that is used to combine the fluid output of the tangential fluid outlets 19 into the single conduit 20. A pump actuation cylinder 35 is provided to cause raising and 25 lowering of the pump 9 and especially the pump housing 18 relative to the vehicle body 1. A telescoping pump support structure 36 is provided for use in combination with the pump actuation cylinder 35. A mechanical drive shaft (not shown) runs through the telescoping pump support structure 30 36 to provide power to the pump impeller 37. When powered, the impeller 37 draws the fluid to be pumped through an enlarged bottom fluid opening 38 of the pump housing 18.

EX1001, 7:20-33. This structure disclosed in the specification for the fluid pump can be succinctly stated as: “a pump housing configured for immersion within the liquid manure, the pump housing has a bottom fluid inlet and at least two tangential fluid outlets, and an impeller that draws the liquid manure to be pumped through the bottom fluid inlet of the pump housing.” EX2004, ¶76.

D. If Not Means-Plus-Function, “A Fluid Pump For Pumping Liquid Manure” Means “A Fluid Pump That Pumps Liquid Manure”

Should the Board find that the Claim 1 limitation reciting “a fluid pump for pumping liquid manure” is not a means-plus-function limitation, it must then construe this phrase as “a fluid pump that pumps liquid manure” in light of the prosecution history.

Claim terms must be construed in view of the prosecution history. *Phillips*, 415 F.3d at 1314-17. During reexamination of the ‘557 Patent, the Patent Owner attempted to add new independent Claim 55 reciting “a fluid pump configured to pump liquid manure.” EX1037, 38. Critically, the CRU rejected Claim 55 under 35 U.S.C. § 305 as enlarging the scope of the claims of the patent being reexamined, stating that the “configured to” language was broader than the original “for pumping” language:

In the above listed claims, the limitation regarding the pump has been broadened to recite “configured to pump” from the original “for pumping”. The limitation is broader as the fluid pump no longer actually needs to pump, but merely be configured to do so.

While other aspects of the claim including the limitations regarding the pump may be narrower, the claim cannot be broadened with respect to any feature in any manner.

EX1037, 26. The CRU went on to explain that the claims of the ‘557 Patent reciting an amphibious vehicle with “a fluid pump for pumping liquid manure” were found to be patentable because “a pump that pumps manure has different

requirements than one that pumps water” and that “the prior art does not reasonable show an amphibious vehicle that can be mobile on both land and liquid that pumps manure” (emphasis added):

STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

The following is an examiner's statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding: claims 1-54, 82-105, 112 and 113 are allowed over the art cited with the request. The examiner has considered the arguments that a pump that pumps manure has different requirements than one that pumps water. Further, without impermissible hindsight, there would not be proper motivation to combine a device like Carrier with a device like Puck. Therefore, the examiner concurs that the prior art does not reasonably show an amphibious vehicle that can be mobile on both land and liquid that pumps manure, in combination with the other claimed elements.

EX1037, 26. The CRU included this same statement when it confirmed the claims of the ‘425 Patent. EX1038, 6. A POSITA would see this prosecution history and interpret the phrase “a fluid pump for pumping liquid manure” to mean “a fluid pump that pumps manure” as opposed to a pump that is merely *capable* of pumping liquid manure in the theoretical sense if it happened to be put to that use. EX2004, ¶70.

VIII. GROUND 1: CLAIMS 1-21 ARE NOT ANTICIPATED BY CARRIER

**A. Discretionary Denial Under § 325(d) is Appropriate Because
Ground 1 of the Petition is Cumulative of Ground 1 of
Bazooka's Reexamination Request**

Petitioner's reexamination requests challenged the claims of the '425 and '557 Patents as being anticipated by Carrier, arguing that: (1) the claim language requiring the pumping and flow of liquid manure are recitations of intended use and are not entitled to any patentable weight, and (2) the water pump disclosed in Carrier is capable of pumping liquid manure. EX2001, 38-40. Both premises are flawed, as the CRU ultimately found. There is no reason to revisit them for a second time in an IPR.

This is not a situation where the CRU simply overlooked Petitioner's arguments. During the '557 Patent reexamination, the CRU initially issued a Non-Final Office Action rejecting the claims of the '557 Patent as being anticipated by Carrier II, stating that "the type of material pumped is intended use and the Carrier device is clearly capable of pumping manure." EX1037, 67. The CRU withdrew this rejection in the next Office action in view of the Patent Owner's traversal, which cited: (1) case law explaining that functional limitations cannot simply be ignored as reciting intended use, (2) portions of Carrier II explaining that its pump was "capable of pumping water from a lake or stream onto a fire" and included "a screen to filter debris that would otherwise clog hoses," and (3) portions of the

‘557 Patent specification (which is the same as the ‘425 Patent specification) and the specification of U.S. Patent No. 8,944,758 (which is another one of the Patent Owner’s patents and is incorporated by reference in the ‘557 and ‘425 Patents) explaining that a crust develops on the surface of a manure lagoon and that pumps used in manure lagoons have certain characteristics to allow them to accommodate solid material in the liquid manure without plugging. EX1037, 52-57. After considering these arguments, the CRU determined that the Petitioner’s arguments against patentability were wrong and confirmed the claims, subject to minor amendments. EX1037, 25-26. Because of the large amount of overlap between the claims of the ‘557 Patent and the claims of the ‘425 Patent, the CRU confirmed the patentability of the ‘425 Patent claims for the same reasons. EX1038, 6.

Petitioner has not shown that the CRU’s decision suffers a material error. Petitioner cannot do so because the CRU’s decision was based on clear law requiring due consideration of functional claim limitations such as those at issue here and the information contained within the Patent Owner’s specification regarding manure compared to the information contained within Carrier’s disclosure regarding its water pump. If anything, the CRU’s determination is even *more* correct in this setting where the Board must apply the more stringent *Phillips* claim construction standard. Petitioner’s arguments are based on case law that

applies the broadest reasonable interpretation standard, which is inapplicable here.

This makes a compelling case for discretionary denial under § 325(d).

B. Carrier Lacks All Elements of the Challenged Claims

i. Carrier Fails to Disclose or Suggest a Fluid Pump For Pumping Liquid Manure

Carrier unequivocally teaches a general-purpose amphibious vehicle that can optionally be equipped with a water pump and water cannon for firefighting:

[0060] Another important feature of the present invention is that the tank, hoses, and pump may be readily removed from the vehicle through the use of quick-release devices. Assuming the water and foam tanks are empty, four firefighters should easily be able to remove the fire-fighting equipment, which would enable the vehicle to be used during a search and rescue. A remote controlled crane can be mounted on the rear of chassis 102 can also be used to facilitate in the removal of any of the aforementioned package components. The back portion, or rear deck, of the vehicle is capable of carrying two injured persons while two emergency personnel ride in the vehicle's passenger area. Consequently, transforming the vehicle and enabling it to be used for a different purpose reduces the number of vehicles required and provides greater flexibility to the firefighters, military personnel or other emergency personnel who use the device.

[0061] The use of a pump mounted to the all terrain vehicle which is capable of pumping water from a lake or stream onto a fire is another feature of the present invention. This feature reduces the need to transport water to the site of the fire or, in the alternative, makes it easier to transport water pumping equipment to the body of water to be used in fighting the fire.

EX1005, ¶¶60-61. The optional pump in Carrier is described as “capable of pumping water from a lake or stream onto a fire.” EX1005, ¶61. Carrier does not say that the pump has other capabilities or that the pump is capable

of pumping manure. Indeed, Carrier makes zero reference to manure, farm lagoons, or livestock farming. Nor does Carrier suggest using its vehicle in agricultural applications. Instead, Carrier states that it is directed to multi-purpose vehicle for use by “firefighters, military personnel or other emergency personnel.” EX1005, ¶61. Thus, the vehicle disclosed in Carrier is quite different from the amphibious vehicle recited in Claim 1, which has a liquid manure pump, making it particularly adapted for the specific purpose of pumping manure in a manure lagoon to break up the surface crust and recirculate the manure.

Attempting to avoid this clear deficiency in Carrier, Petitioner makes the strained argument that “liquid manure” has the same consistency as water such that Carrier’s water pump is capable of pumping liquid manure. This argument is irreconcilable with record evidence for at least four reasons:

- First, the ‘425 Patent specification equates “liquid manure” to “animal manure contained in a farm lagoon” and further explains that liquid manure includes solids and a surface crust. EX1001, 1:25-53, 3:14-21. A POSITA would understand that the “liquid manure” described in the ‘425 Patent has these characteristics. EX2004, ¶¶82-84.

Petitioner’s attempt to narrow the definition of liquid manure to the

definition provided in a waste management handbook must be rejected as extrinsic evidence that is inconsistent with language of the ‘425 Patent itself.

- Second, the ‘425 Patent specification and the prior art explain that traditional pumps clog when used in manure pumping applications. For example, the ‘425 Patent specification explains that liquid manure includes solid materials that can clog traditional pumps:

telescoping connections to the single fluid conduit. Lower-
ing the fluid pump for immersion into the fluid obviates the 15
need for priming the fluid pump, which can be problematic
when the fluid is manure comprising solid materials that can
plug the pump or priming structure. Immersion of the pump
also simplifies intermittent operation of the pump, due to
eliminating potential loss of prime, and reduces the need for 20
pump maintenance.

EX1001, 3:14-21. U.S. Pat. No. 4,406,413 to Houle [EX2010], which is cited on the face of the ‘425 Patent, also explains that farm animal manure consists of a liquid with solid particles in suspension that tend to clog traditional pumps:

Farm animal manure consists of solid particles in a
liquid, and the solid particles either settle on the bottom 25
of the container (as in the case of pig manure) or form a
crust over the liquid (as in the case of cow manure)
depending on the density of the solid matter and, in
some cases, both conditions obtain. Thus, the mass of
manure in the container must be thoroughly mixed prior 30
to pumping in order to maintain the solid particles in
suspension, otherwise only the liquid matter will be
pumped out while the solid matter accumulates in the
container. Moreover, such solid matter tends to clog the
pump. 35

Hitherto, manure handling pumps consisted of a powerful centrifugal pump disposed near the bottom of the container, the impeller turning about a vertical axis, and a conduit system coupled to the outlet of the pump for either circulating manure within the container or away therefrom into a manure spreader or a different container. The conduit system therefore has a first branch leading out of the container toward another container or toward a tank spreader, and a second branch leading to a suitable nozzle pipe for returning into the container the slurry being mixed. A gate controls the selection of conduit branch in order to either agitate the slurry or pump same out of the reservoir. Examples of such centrifugal systems of which many different designs are currently available from farm equipment manufacturers, are described in U.S. Pat. Nos. 3,905,725 dated Sept. 16, 1975 (R. L. Johnson), 3,446,151, May 27, 1969 (H. G. V. Anderson), 3,456,592, July 22, 1969 (L. L. Nelsen) and 3,966,361, June 29, 1976 (B. L. House). Such devices however provide limited efficiency when the reservoir contains a thick floating crust or heavy bottom sediments. Indeed, the mixing capabilities of centrifugal pump systems are at best limited and time consuming, and no agitation takes place during transfer of the slurry to a different container into a tank spreader. Furthermore, clogging of the pump's impeller and consequential loss of pump efficiency remains a serious shortcoming.

EX2010, 1:24-63. The statements in the patent specification and prior art accurately reflect the understanding of a POSITA because they are by actual inventors of manure agitation equipment and are unbiased since they were not made in connection with the subject proceedings or with hindsight bias. EX2004, ¶105. This record evidence directly contradicts the litigation-induced theory Petitioner and its expert conveniently advance that any fluid pump will do.

- Third, the Carrier reference describes structure (i.e., a screen) that

makes its pumping system unsuitable for pumping manure:

[0063] The tank **201** can preferably have a recessed top for storage of hoses, multiple 100-foot hoses, and a large fill orifice, a screen to filter debris that would otherwise clog hoses, pump **202** to refill the tank **201** from lakes, ponds, or streams. Additionally, the tank **201** includes a master drain for flushing and cleaning the tank. In addition, a water cannon may be provided with vehicle **100** and located adjacent the operator to enable use thereof.

EX1005, ¶63. This screen in Carrier for filtering debris would quickly become clogged by the suspended solids found within liquid manure, rendering the pump inoperable if used to pump liquid manure. EX2004, ¶106.

- Fourth, the prosecution history limits the scope of the claims to a fluid pump “that pumps manure” (i.e., a liquid manure pump). It is not enough for a reference to simply disclose any fluid pump. The assertions of Petitioner’s expert that the pump disclosed in Carrier could theoretically pump manure, even though it was designed and selected for an admittedly different application, relies solely on extrinsic evidence and is irreconcilable with the more pertinent record evidence identified above and the CRU’s finding that the claims require “a fluid pump that pumps manure” as opposed to merely being capable of pumping manure in a theoretical sense.

ii. Carrier Fails to Disclose All of the Wireless Remote Control Limitations of Claim 1

Claim 1 also requires “wireless remote control configured to enable an operator who is remote from the vehicle to ... (2) control a flow of liquid manure from the fluid pump.” Carrier does not disclose a pump that pumps liquid manure so it follows that Carrier also fails to teach wireless remote control of “a flow of liquid manure from the fluid pump.”

iii. Carrier Fails to Disclose The Means-Plus-Function Pump Structure Set Forth in the ‘425 Patent Specification

The pump disclosed in Carrier fails to satisfy any of the structure corresponding with the “fluid pump” means-plus-function limitation, which includes “a pump housing configured for immersion within the liquid manure, the pump housing has a bottom fluid inlet and at least two tangential fluid outlets, and an impeller that draws the liquid manure to be pumped through the bottom fluid inlet of the pumping housing” and therefore cannot anticipate Claim 1 for this additional reason.

iv. Carrier Fails to Disclose The Claimed Combination of Elements, Which When Considered Collectively, Define an Amphibious Manure Lagoon Agitation Vehicle

When the claim elements are considered individually, like in the Petitioner’s analysis, the overall picture is lost. The Patent Owner has not claimed a general-

purpose amphibious vehicle for carrying an onboard operator and various tool attachments like in the cited art. Instead, when the claim elements are considered together as a claimed combination it is clear that what is claimed is an amphibious vehicle that is specially adapted for the particular purpose of disrupting the crust and recirculating liquid manure in a manure lagoon, where the vehicle can drive into, out of, and navigate the manure lagoon by wireless remote control. Carrier discloses nothing of the sort.

IX. GROUND 2: CLAIMS 1-7 AND 12-19 ARE NOT OBVIOUS BASED ON TRUXOR IN VIEW OF YOON OR CARRIER

A. Discretionary Denial Under § 325(d) is Appropriate Because Truxor and Yoon are Cumulative of Carrier, Carrier II, and Bennett

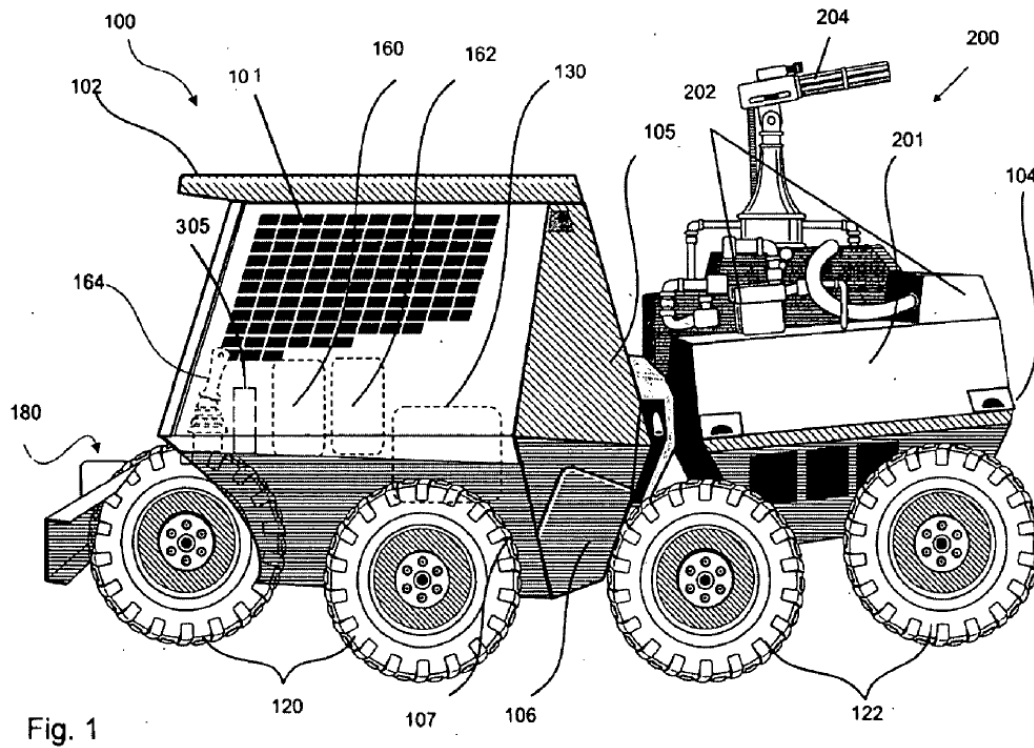
Truxor [EX1006] is non-patent literature in the form of a marketing brochure for an amphibious vehicle made in Sweden that is designed to carry an onboard operator and a number of different tool attachments, including aquatic weed cutters [EX1006, 6-7], rakes [EX1006, 8-9], buckets and log grabbers [EX1006, 9], dredge pumps [EX1006, 10-11], excavators [EX1006, 12], cultivators [EX1006, 13], and oil decontamination tools [EX1006, 14-15]. Because Truxor is a manned vehicle designed to carry and be controlled by an onboard operator, the Petition cites Yoon or alternatively Carrier for the purpose of teaching remote control. Petition, 47, 50. Despite Petitioner's hand waving, the combination of Truxor in view of Yoon or Carrier ("the Truxor Combination") is

merely cumulative of Carrier, Carrier II, and Bennett, all of which were considered during reexamination. EX2001, 2. Notably, Truxor, Carrier, and Carrier II all disclose multi-purpose amphibious vehicles that can carry people and different removeable attachments, including pumps. Carrier and Carrier II additionally disclose that the amphibious vehicle could optionally be remote controlled. A chart illustrating the similarities between Truxor and Carrier, Carrier II, and Bennett is provided below:

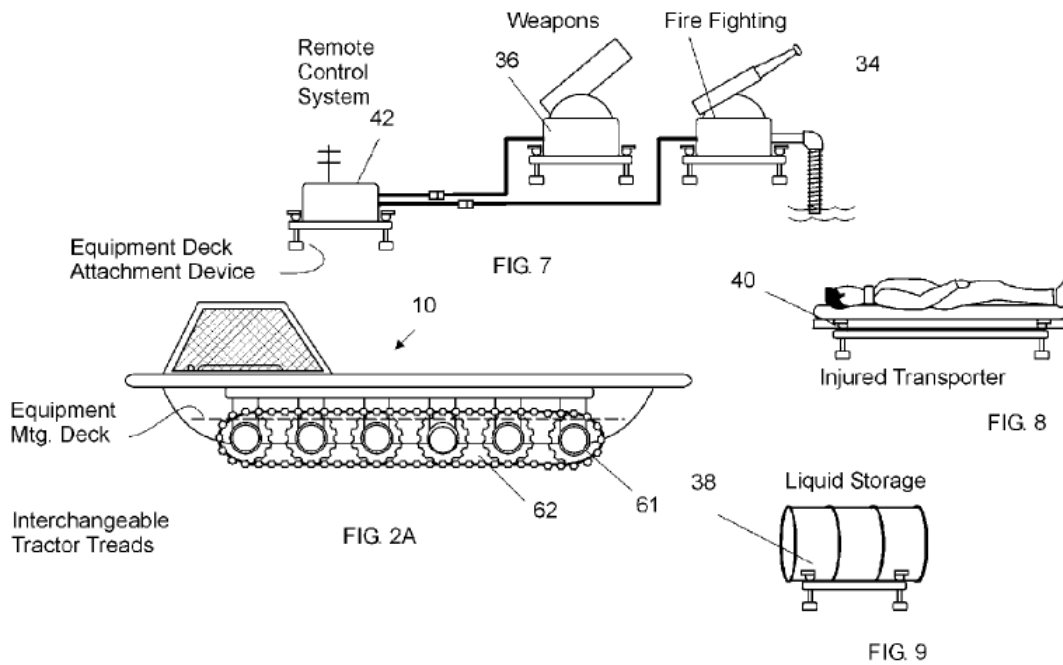
Truxor [EX1006, 11]



Carrier [EX1005, 2]



Carrier II [EX1020, 3]



Bennett [EX1016, 3]

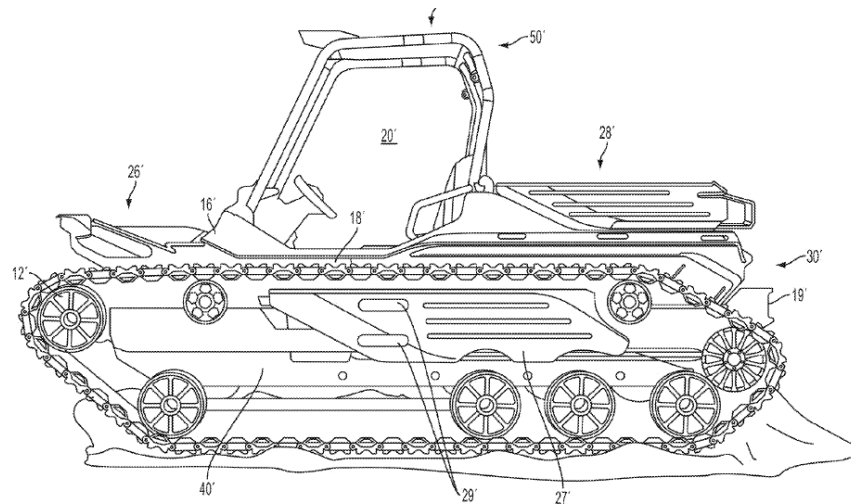


FIG. 2

Truxor's marketing brochure [EX1006] does not teach or even suggest that the Truxor vehicle and one of its pump attachments are used to pump manure. Given that deficiency, the Truxor Combination is no different than Carrier in ways material to the patentability of the '425 Patent claims. Both the Truxor Combination and Carrier teach amphibious vehicles that can be equipped with optional fluid pumps, but neither teach an amphibious vehicle that is specially adapted for the particular purpose of manure lagoon agitation by virtue of being equipped within a fluid pump that pumps liquid manure or that has wireless remote control to control a flow of liquid manure from the fluid pump. Accordingly, discretionary denial is appropriate under § 325(d).

B. The Truxor Combination Lacks All Elements of the Challenged Claims

i. Truxor Fails to Disclose or Suggest a Fluid Pump For Pumping Liquid Manure

The Truxor vehicle is not a manure agitation vehicle and its marketing brochure does not teach or suggest that it is. The very cover of Truxor's marketing brochure touts its vehicle as an "Amphibian tool carrier" and "The flexible multi-functional machine." These multiple functions are listed along the bottom of the cover as "Reed cutting & Gathering – Excavation – Dredging":

The flexible multi-functional machine

TRUXOR[®]
Amphibian tool carrier



Reed cutting & Gathering - Excavation - Dredging

EX1006, 1. There are absolutely no references to manure, farm lagoons, or livestock farming in Truxor's marketing brochure. Nor does Truxor's marketing brochure disclose that its dredge pump attachments pump manure:

Tools and accessories

Dredge pumps



The Doro Pump is operated by a hydraulic motor and has a capacity of 10-40 m³/h. The Doro Pump is available with two types of feeds to the pump inlet: wheel feeding or screw feeding. The wheel feeder has a rotating wheel with horizontal cutters and vertical teeth which aerate the sediment and cut off roots to facilitate the feeding into the inlet of the pump. The rotating wheel gives a greater flow of sediment to the pump inlet when the sediment is soft.

When dredging harder sediments, screw feeding can give a more stable flow to the pump inlet. For sediment containing solid objects, e.g. stones, bits of wood, etc., screw feeding is recommended. The in-feed is important to give the pump an even flow of sediment, which can also be facilitated by knives mounted on the suction intake of the pump.

Suction dredging in pure sand is performed with a nozzle mounted on the intake of the pump. The Doro Pump is delivered with a mechanical bracket.

The Doro Pump can be delivered with a hydraulically run telescopic arm as an accessory which will increase the dredging depth and facilitate the manoeuvring.



Wheel feed



Screw feed



Suction mouthpiece

EX1006, 10. Instead, Truxor's documentation clearly states that the Doro pump is designed for pumping light sediments:

The Doro Pump

Page 18

The Doro pump is designed for pumping light sediments and volatile sand. The Doro pump is supplied with a screw feed. The intake can be equipped with a suction nozzle when pumping sand or light floating sediments.

EX1007, 123.

Petitioner improperly attempts to have its expert **add** to the teachings of Truxor by explaining in a single paragraph that the Doro Pump attachment disclosed in Truxor would be capable of pumping manure:

268. The disclosed Doro Pump is capable of pumping liquids, including liquid manure. The capabilities of the Doro Pump of Truxor are far greater than those necessary for pumping liquid manure. The Doro Pump would be capable of pumping slurry and semisolid manure with considerably higher solids content and different (more solid) physical properties than liquid manure, as dredging pumps have long been used for this purpose. EX1058, 2. A POSA would have understood that similar dredging equipment was known in the art for removing solids and sludge that settle to the bottom of manure lagoons. *Id.*

EX1004, ¶268. However, these conclusory statements are insufficient to carry Petitioner’s burden on this claim limitation for at least two reasons:

- First, the opinion that “[t]he capabilities of the Doro Pump of Truxor are far greater than those necessary for pumping liquid manure” is unsupported speculation because there is no discussion comparing the capabilities of the Doro Pump to pumps that actually pump manure.

For example, Petitioner's expert has not provided any comparative analysis of the pumping capacity, pumping head, power requirements, tolerances, or other pumping capabilities or characteristics of the Doro Pump compared to manure pumps. This lack of comparative analysis is fatal in view of the statements contained in the '425 Patent and the prior art explaining that traditional pumps experience clogging when used to pump manure. EX1001, 3:14-21; EX2010, 1:24-63.

- Second, the prosecution history limits the scope of the claims to a fluid pump "that pumps manure." EX1038, 6. The assertions of Petitioner's expert that the Doro Pump disclosed in Truxor could theoretically pump manure, even though it was designed and selected for an admittedly different application, is irreconcilable with the CRU's finding that the claims require "a fluid pump that pumps manure" as opposed to merely being capable of pumping manure in a theoretical sense. EX1037, 25-26.

ii. The Truxor Combination Fails to Disclose The Claimed Combination of Elements, Which When Considered Collectively, Define an Amphibious Manure Lagoon Agitation Vehicle

The Patent Owner has not claimed a general-purpose amphibious vehicle with various tool attachments like in Truxor. Claim 1, when considered as a whole, defines an amphibious vehicle that is specially adapted for the particular

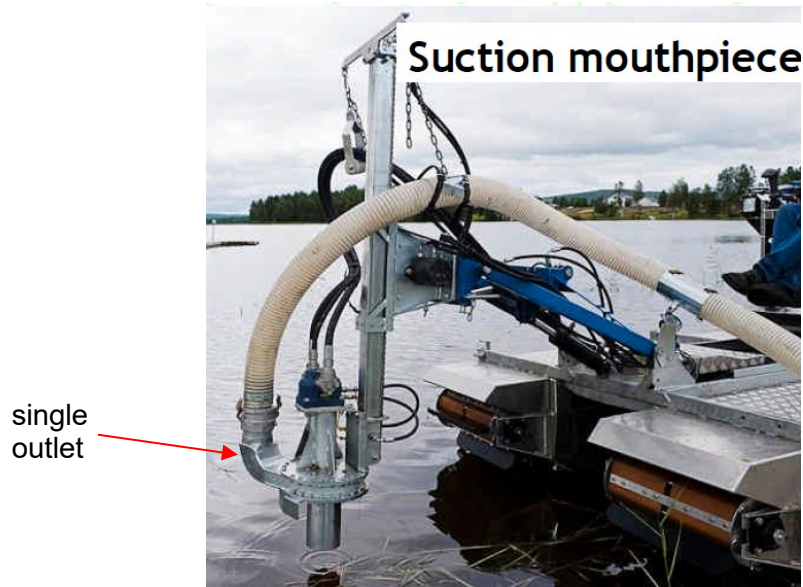
purpose of disrupting the crust and recirculating liquid manure in a manure lagoon, where the vehicle can drive into, out of, and navigate the manure lagoon by wireless remote control. This is not some post-allowance formulation of the invention, but it is precisely described this way in the ‘425 Patent specification. EX1001, 8:5-27.

As the CRU explained at the conclusion of reexamination, “the prior art does not reasonable show an amphibious vehicle that can be mobile on both land and liquid that pumps manure.” EX1038, 6. The Truxor Combination is no different because the Truxor marketing brochure does not reasonably convey to a POSITA a vehicle that pumps manure. EX2004, ¶126. On its face, the Truxor marketing brochure [EX1006] describes a manned amphibious vehicle for weed removal and dredging. Absent impermissible hindsight, a strict combination of Truxor with Yoon or Carrier would result in a remote-controlled amphibious weed clearing and dredging vehicle – not a remote-controlled amphibious manure lagoon agitation vehicle.

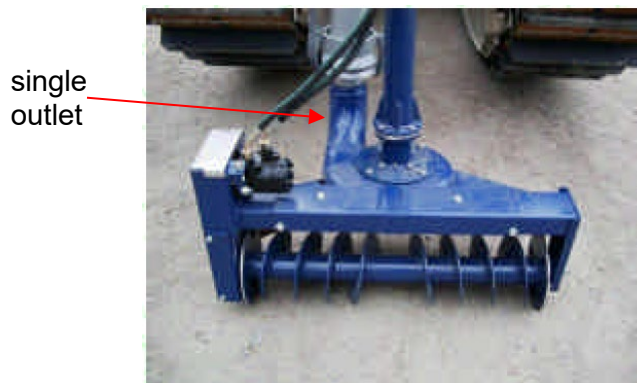
iii. The Truxor Combination Fails to Disclose The Means-Plus-Function Pump Structure Set Forth in the ‘425 Patent Specification

The dredge pumps disclosed in Truxor’s marketing brochure [EX1006] have a single outlet and therefore do not have “at least two tangential fluid outlets” as

required by the structure recited in the '425 Patent specification for the “fluid pump” means-plus-function limitation:



EX1006, 10.



EX1006, 11.

Neither Carrier or Yoon disclose a pump housing with at least two tangential fluid outlets and therefore do not cure this deficiency. The Truxor Combination does not render Claim 1 unpatentable for this additional reason.

**C. Petitioner Has Failed To Carry Its Burden of Demonstrating
That a POSITA Would Have Had a Reasonable Expectation of
Success in Combining Truxor With Yoon or Carrier**

It is, at all times, the Petitioner's burden to show that the claims would have been obvious, including that a skilled artisan would have had a reasonable expectation of success in achieving the claimed invention. *Eli Lilly & Co. v. Teva Pharm. Int'l GmbH*, 8 F.4th 1331, 1348 (Fed. Cir. 2021). Because this is a question of fact, it requires substantiation. *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1359 (Fed. Cir. 2019) ("a conclusory assertion with no explanation is inadequate to support a finding that there would have been a motivation to combine").

The Petition fails to demonstrate that a POSITA would have had a reasonable expectation of success in achieving the claimed invention through a combination of Truxor with Yoon or Carrier.

The amphibious vehicle disclosed in Truxor and its tool attachments are designed to be operated by an onboard operator. Truxor therefore fails to teach the four enumerated wireless remote-control limitations of Claim 1. In Ground 2, Petitioner asserts that a POSITA would **add** wireless remote-control functionality to the amphibious vehicle disclosed in Truxor in view of the remote-control teachings of Yoon or Carrier. Petition, p. 48. While Petitioner discusses at great length why a POSITA would have been motivated to combine these references, it

fails to adequately explain why a POSITA would have had a reasonable expectation of success in making this combination and achieving the claimed invention.

i. Petitioner Has Not Presented Sufficient Evidence Demonstrating That a POSITA Would Have Had a Reasonable Expectation of Success in Adding Remote Control Functionality to Truxor

The words “reasonable expectation of success” do not even appear in the Petition. The only statements that can even remotely be interpreted as discussing this in Ground 2 are the following sentences in the Petition:

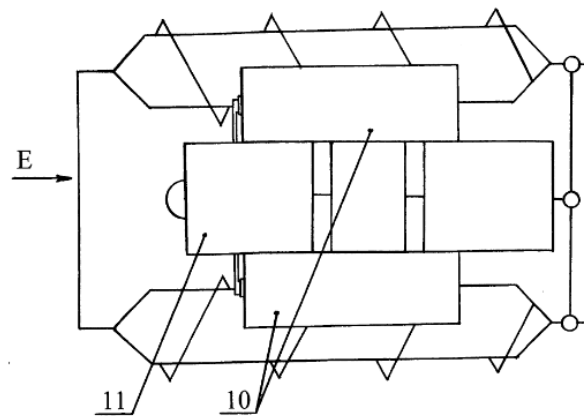
use thereof in conditions dangerous for humans.” EX1025, 4. Melnikov describes adding remote control to Truxor-like amphibious machines with a pump for spraying liquid biopreparations. *Id.*, 4-5. Melnikov describes how the vehicle can be driven and the pump operated by remote control. *Id.* It would have been obvious to apply the known technique of remote control to the known device described by Truxor, which, as recognized by Melnikov, was ready for the improvement. The combination would have yielded the predictable result of permitting operation of the Truxor vehicle while stationing the operator at a safe location. EX1004, ¶¶261-262.

Petition, 51-52. The problem with this argument however is that Petitioner grossly misrepresents what Melnikov teaches. It does not teach adding remote control to Truxor or a similar vehicle – in fact Melnikov teaches the exact opposite.

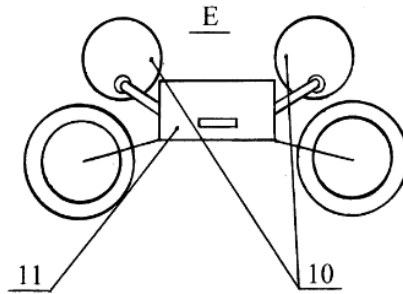
Melnikov only discusses Truxor in its “Background” section as prior art and notes the drawback that it requires an onboard operator:

Truxor — a multifunctional amphibian machine manufactured by the Swedish company *Dorotea Mekaniska AB* is known (www.doroteamekaniska.se). The amphibian is a pontoon machine on caterpillar tracks operated by one operator. On the machine, an oil skimmer, cultivator, excavator, rakes may be quickly mounted as hydraulic attachments. The machine is easily placed on a trailer, which makes it mobile and reduces transport costs. However, **the disadvantages of the machine may include the presence of an operator located on the machine itself**, which limits the use thereof in conditions dangerous for humans.

EX1025, 4. Significantly, Melnikov does not suggest adding remote control to Truxor. Instead of doing that, Melnikov designed a radically different remote-controlled vehicle with a dual-screw propulsion system that looks nothing like Truxor:



Фиг. 11



Фиг. 12

EX1024, 7. These major differences continue with Melnikov's pump, which is illustrated and described as an **onboard** pump for pumping liquid biopreparations and mineral fertilizers from the containers 10 to the spray system 11:

The machine for applying liquid biopreparations and liquid mineral fertilizers includes containers 10 and a pump with a spray system 11 (Fig. 11) mounted on the carrier vehicle.

EX1025, 5. Thus, the device in Melnikov does not pose the same problem as the Truxor Combination, where controlling the positioning and operation of a submerged pump on the end of a boom arm would be problematic given the complexity of the controls and difficulty observing its operation from a remote location.

Melnikov clearly knew of the Truxor vehicle and clearly knew that its requirement for an onboard operator was a drawback. If it were both obvious and reasonably feasible to add remote control functionality to Truxor, that is precisely what Melnikov would have done. But Melnikov didn't do that and instead created a device that would be far simpler to operate as a remote-control vehicle – and one

that does not include a submersible pump on the end of a boom arm. This highlights the problem with the Petitioner's evidence. Just because the art teaches that *some* vehicles can be remote controlled does not mean that *all* vehicles can be remote controlled or that a POSITA would have had a reasonable expectation that remote control could be successfully added to Truxor. EX2004, ¶146.

ii. Truxor's Manual Controls Depend on an Onboard Operator and Close Proximity Observation of the Submersed Pump

Petitioner has not carried its burden of showing that a POSITA would have had a reasonable expectation of success by failing to answer a glaring problem – remotely controlling the positioning and operation of a submerged pump on the end of a boom arm would be problematic given the difficulty of observing its operation from a remote location. EX2004, ¶135. This would clearly be an issue given that Truxor's design places a priority on visual observation of its attachments, given the elevated operator's seat:

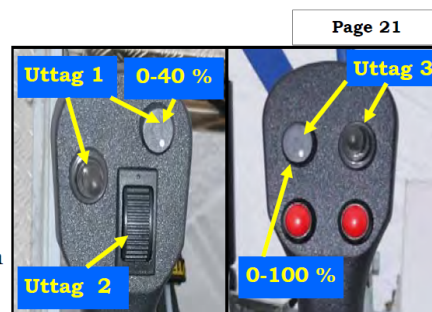


EX1007, 60.

Nor has Petitioner's expert shown that Truxor's manual controls lend themselves to remote control. Truxor's operator's manual discloses two multi-function joysticks that are used to control the positioning and operation of the submersed pump:

The Doro Pump

The Doro pump is regulated with the help of crossbar switches. The left joystick adjusts the screw feed = socket 1. The rotation can be max. 40 %. The upward and downward movement of the telescope extension is controlled using socket 2 (accessory). The right joystick with socket 3 regulates the rotation speed of the pump, which can be 100 % in most cases.

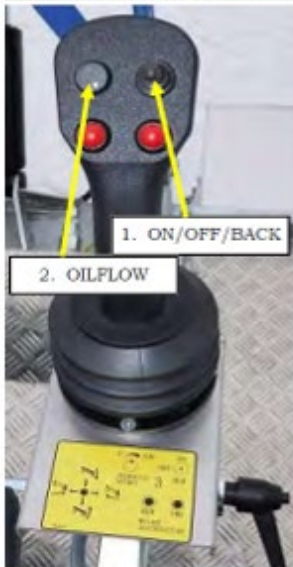


EX1007, 126.



The digging arm may only be moved laterally when the outriggers touch the bottom. The lateral scope of the digging arm with a mounted Doro pump is 4 metres but for safety reasons only a 2-metre range can be used. This means that the permissible working width from the centre is 2 metres in each direction.

Warning! There is a tilting risk if the maximum range is used.



Hydraulic-driven tools mounted on Doro Digger require different oil flows.

Socket 3 that determines the oil flow/pressure to the tools is regulated using the right joystick. The switch (1) controls on/off/back.

The knob (2) adjusts the oil flow. Turn the control clockwise to end position for maximum oil flow (100%).

The rotation speed of the diesel motor also affects the maximum flow of the hydraulic pump. Higher rotation speed is required when many hydraulic functions are running at the same time.

Recommended oil flows for the different tools (2):

Doro Pump V380-100 %

Slaghack Orsi 80-100 %

Doro Cutter ESM 1900 40-60 %

Doro Mill50-70 %



EX1007, 128-129. Hydraulic controls of this type provide tactile feedback to the onboard operator. EX2004, ¶131. The difficulties with converting these types of hydraulic controls to wireless remote control is well documented and would be known to a POSITA. *Id.* Petitioner's expert has not shown or even attempted to explain how remote control over the various functions could be implemented, how a POSITA could overcome these difficulties when making this combination, or that the resulting combination would actually work in the manure lagoon environment. Indeed, real-world evidence points away from this combination. Even today, some ten years later, there is no evidence that a remote-control option has been added to the Truxor vehicle. EX2004, ¶¶133-134.

Also, as highlighted above, Truxor’s operator’s manual warns of a known “tilting risk.” EX1007, 128. Petitioner’s expert even acknowledges that the vehicle disclosed in Truxor has a tilting (i.e., rollover) risk:

Potential Rollover Risk EX1006, 5; <i>see also</i> EX1021-EX1022, 1; EX1023, 8.	Cold Weather/Hypothermia EX1006, 6.
	

EX1004, ¶257. This tilting risk would dissuade a POSITA from adding remote-control functionality to Truxor because remote-control is less precise and is much more difficult for the operator to perceive tipping and counter-steer. EX2004, ¶139. While the operator might not get hurt if a remote-control vehicle tips, tipping creates a considerable set back as the remote-control vehicle can become damaged by tipping and manned heavy-equipment would likely be necessary to extract/right the vehicle. *Id.* Petitioner’s expert completely overlooks Truxor’s known instability problem from a reasonable expectation of success standpoint.

Manure lagoons typically have steep embankments that can be covered in manure, mud, sand, and/or ice and are therefore extremely slippery. EX2004, ¶140; EX1004, Winkel Decl., ¶¶334, 336. A POSITA would recognize that Truxor’s known instability issues would be exacerbated by remote-control. *Id.* As a result, a POSITA would not have a reasonable expectation that adding remote-control functionality to Truxor would be successful in producing an amphibious remote-controlled vehicle that could operate in a manure lagoon environment without tipping. EX2004, ¶146.

X. GROUND 3: CLAIMS 1-7 AND 12-19 ARE NOT OBVIOUS BASED ON SENWATEC IN VIEW OF YOON OR CARRIER

A. Discretionary Denial Under § 325(d) is Appropriate Because SenwaTec and Yoon are Cumulative of Carrier, Carrier II, Bennett, and Gaither

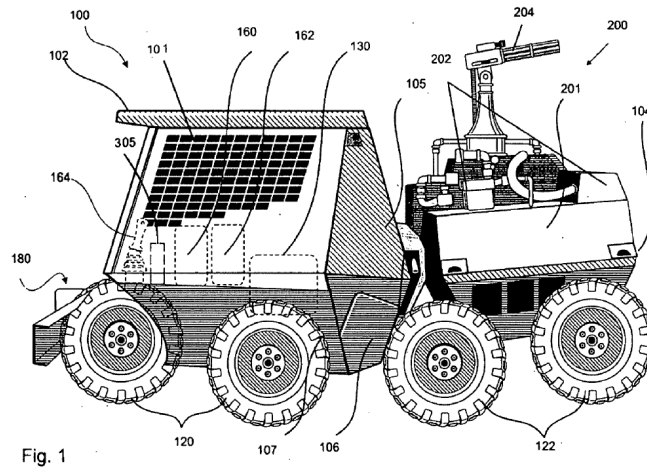
SenwaTec [EX1012] is non-patent literature in the form of a marketing brochure for an amphibious vehicle made in Germany that is designed to carry an onboard operator and a number of different tool attachments, including aquatic weed cutter bars, tree cutters, rakes, mowing buckets, excavating buckets, hydraulic augers, suction augers, and centrifugal pumps. EX1012, 2. Because SenwaTec is a manned vehicle designed to carry and be controlled by an onboard operator, the Petition re-cites Yoon and Carrier, for the purpose of teaching remote-control. Petition, 62-63, 67. But Petitioner’s combination of SenwaTec in view of Yoon or Carrier (“the SenwaTec Combination”) is cumulative of Carrier,

Carrier II, Bennett, and U.S. Pat. No. 7,833,071 to Gaither [EX2011], all of which were considered during reexamination of the '425 and/or '557 Patents. As shown in the chart below, SenwaTec, Carrier, Carrier II, Bennett, and Gaither all disclose manned multi-purpose amphibious vehicles and SenwaTec, Carrier, and Carrier II all include removeable attachments, including pumps:

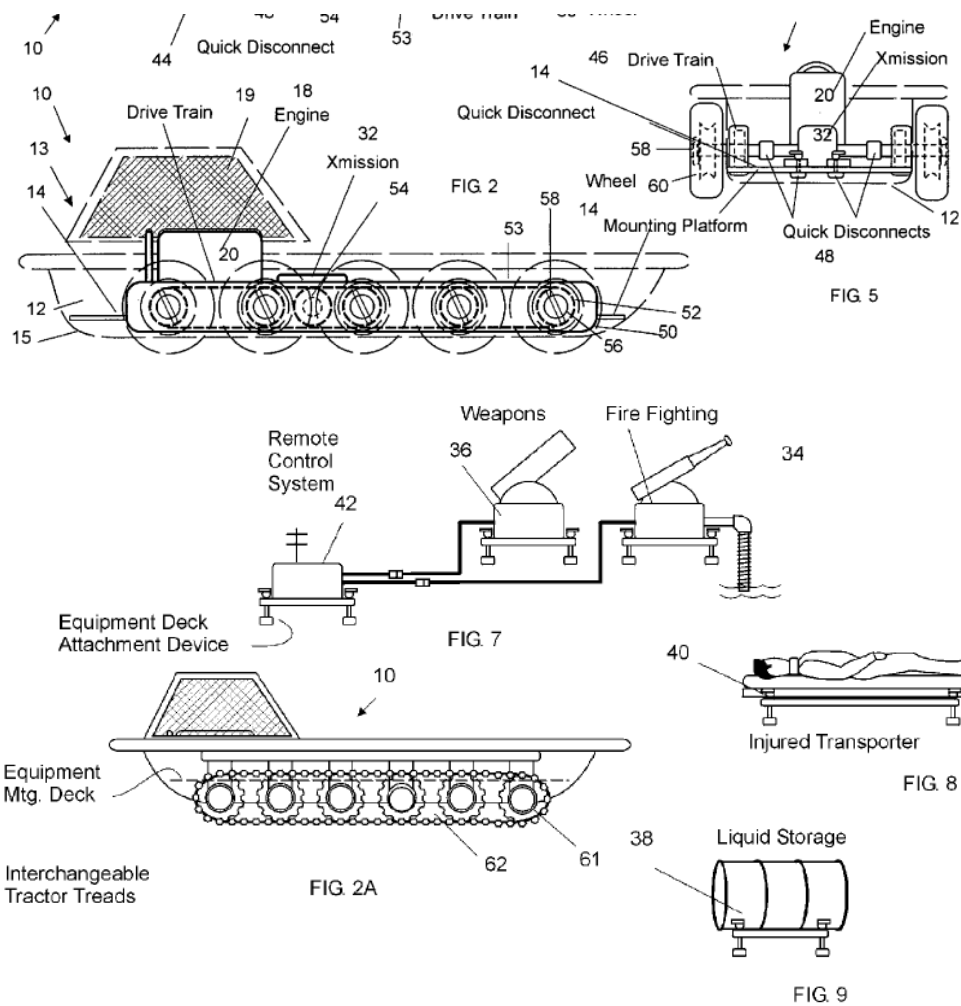
SenwaTec [EX1006, 11]



Carrier [EX1005, 2]



Carrier II [EX1020, 2-3]



Bennett [EX1016, 3]

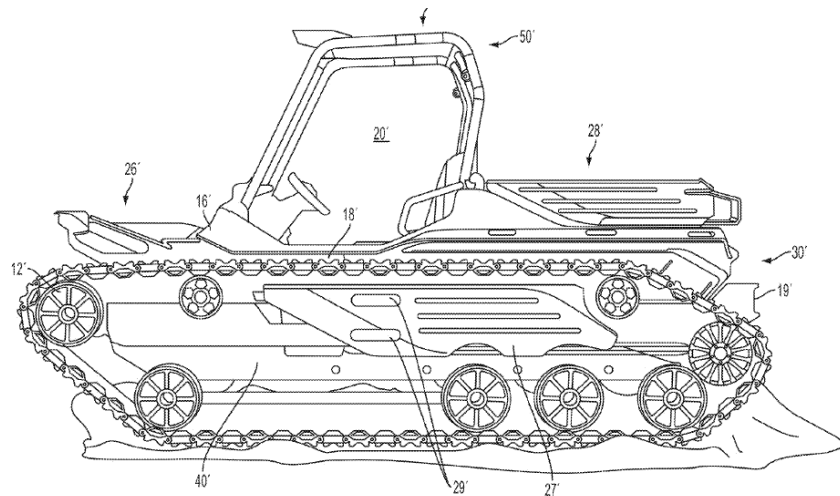


FIG. 2

Gaither [EX2011, 2]

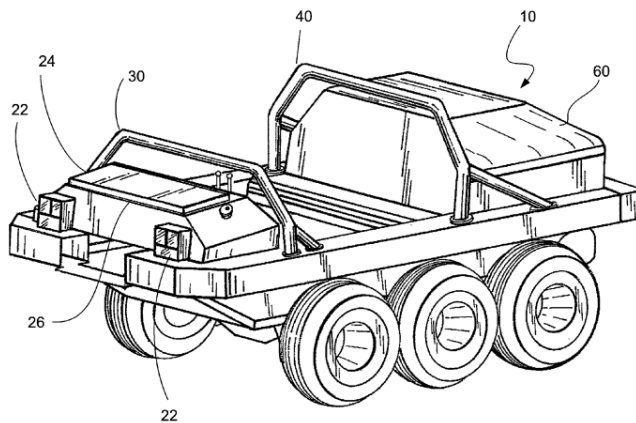


FIG. 1

SenwaTec's marketing brochure [EX1012] does **not** teach or suggest that the SenwaTec vehicle and one of its pump attachments are used to pump manure. Petitioner improperly attempts to **add** to the disclosure of the printed publication itself and show through outside evidence that the SenwaTec vehicle was **publicly used** to pump manure prior to the Patent Owner's filing date. But the Board does

not have jurisdiction under 35 U.S.C. § 311(b) to consider evidence of prior public uses. Aside from that, Petitioner's outside evidence, i.e., the Lonnemann Declaration [EX1013] and its attached exhibits [EX1026-28], are fraught with evidentiary problems and are therefore unreliable.

Given these deficiencies, the SenwaTec Combination is no different than Carrier in ways that are material to the patentability of the '425 Patent claims. Both the SenwaTec Combination and Carrier teach amphibious vehicles that can be equipped with optional fluid pumps, but neither teach an amphibious vehicle that is specially adapted to pump liquid manure. Accordingly, discretionary denial is appropriate under § 325(d).

B. Petitioner's Analysis Extends Impermissibly Beyond SenwaTec's Printed Publication [EX1012] in Violation of 35 U.S.C. § 311(b) And Must Be Disregarded

i. The Lonnemann Declaration [EX1013] Cannot Add to the Teachings of SenwaTec's Marketing Brochure

The Lonnemann Declaration goes well beyond the issues of authentication and publication. For example, Lonnemann claims that one of SenwaTec's customers, UD Umweltdienste, **used** the SenwaTec vehicle "for pumping manure and agitating manure lagoons":

5. **One of SenwaTec's customers** of the Amphi-King was a company called UD Umweltdienste GmbH ("UD Umweltdienste"). **UD Umweltdienste used the Amphi-King for pumping manure and agitating manure lagoons.**

EX1013, ¶5. But there are two glaring problems with this testimonial evidence:

- First, invalidity challenges based on evidence of prior public use are ineligible for consideration in IPR proceedings under 35 U.S.C. § 311(b), which unequivocally limits the scope of IPR proceedings to “prior art consisting of patents or printed publications.”
- Second, Lonnemann’s statement is wholly unsupported and unsubstantiated.

Lonnemann states that he was employed by SenwaTec and then by SenwaTec’s current owner, Berky. EX1013, ¶¶1-2, 9. The Lonnemann Declaration does not provide any foundation for why Lonnemann has personal knowledge to testify about how UD Umweltdienste, a different company altogether, used the SenwaTec vehicle. Lonnemann does not state that he personally observed UD Umweltdienste using the SenwaTec vehicle for pumping manure and agitating manure lagoons or when. If this statement is based on what someone from UD Umweltdienste told him, it is inadmissible hearsay. And Lonnemann does not state that his basis for making this statement is what is shown in Exhibits A and B to his Declaration, nor can he because those Exhibits do not, on their face, demonstrate that UD Umweltdienste used the SenwaTec vehicle for pumping manure for the reasons explained below.

ii. Exhibit A [EX1026-27] to the Lonnemann Declaration Does Not Support The Statement That SenwaTec's Pump Was Used To Pump Manure

Lonnemann claims that a news article published prior to the Patent Owner's filing date described the manure pumping capabilities of SenwaTec's vehicle:

6. SenwaTec's amphibious vehicle products and their associated manure pumping capabilities were the subject of news publications prior to August 19, 2013. *See e.g., Exhibit A* (accessible at <https://www.hna.de/lokales/rotenburg-bebra/frosch-vorbild-1376974.html>). SenwaTec appreciated its products being published in news publications because they helped to raise awareness for SenwaTec's products.

EX1013, ¶6. But the news article attached as Exhibit A to Lonnemann's

Declaration does not, on its face, support this statement for at least three reasons:

- First, the article [English translation at EX1027] contains no references to manure or livestock and instead states that SenwaTec vehicle was being used in a "sewage pond." The article itself does not suggest that this sewage pond contained animal manure, explaining that there was **no fecal matter** left in this sewage pond:

This idea is not that far off: "After all, **it's not fecal matter that's in the sewage sludge,**" explains the vehicle operator of the frog-like machine, **"it's just dead bacteria that previously ate the fecal matter."** Thus, **what floats in the pond is anything but toilet waste.**

EX1027, 3. Furthermore, the article suggests that the “fecal matter” that used to be in the “sewage pond” was human waste through its reference to “toilet waste.” So Exhibit A [EX1026-27] does not actually teach the SenwaTec vehicle being operated in “manure” as Lonnemann incorrectly claims.

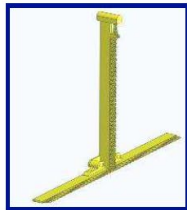
- Second, sewage ponds and manure lagoons are very different. EX2004, ¶34. A large amount of the solids and debris found in manure lagoons is bedding material, such as straw and sand, that sticks to the manure and gets washed into the manure lagoon. *Id.* Human waste is transported to sewage treatment plants by sewer and therefore does not have straw or sand mixed in with the waste. *Id.* Human waste is also treated at a sewage treatment plant before going into a storage pond and therefore has much less debris than a manure lagoon. *Id.* A POSITA would understand that the requirements for pumping human waste in a sewage pond are different than the requirements for pumping manure in a manure lagoon. *Id.*
- Third, the article does not reference a “pump” or “pumping.” In the photograph included with the article, which is reproduced below, the end of the boom arm is not visible and therefore does not illustrate whether the SenwaTec vehicle in the picture is equipped with a pump attachment:



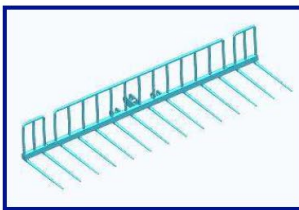
With the movements of an amphibian: Eckhard Funck cleans the sewage pond in Mecklar with a new and environmentally friendly technology while sailing and swimming. His frog-like device produces 60 horsepower. Photo: Kaschik

EX1027, 2. Nothing in the article tells us whether the SenwaTec vehicle in this “sewage pond” was actually equipped with a pump attachment as opposed to one of the other non-pump attachments available from SenwaTec, such as the excavating bucket:

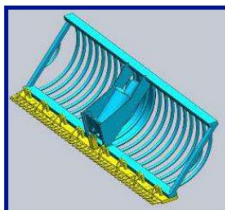
Available working tools and attachment units:



T-Shaped Cutter-Bar



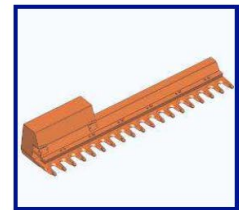
Clearing & Collecting Rake



Mowing Bucket



Excavating Bucket



Tree Cutter

EX1012, 2. So Exhibit A [EX1026-27] does not actually demonstrate that SenwaTec’s vehicle had “manure pumping capabilities” as Lonnemann claims.

**iii. Exhibit B [EX1028] to the Lonnemann Declaration
Cannot Serve as a “Printed Publication” Because
Petitioner Has Not Provided a Copy of the Video**

Lonnemann states that Exhibit B is a compilation of screenshots of a video that its customer UD Umweltdienste made of the SenwaTec vehicle:

15. Exhibit B is a compilation of screenshots of a marketing video created by UD Umweltdienste that shows the Amphi-King pumping manure and agitating a manure lagoon.

EX1013, ¶15. But Exhibit B itself [EX1028] cannot be considered a “printed publication” within the scope of 35 U.S.C. § 311(b) because it is just 9 screenshots of a video that someone compiled. This video and therefore the screenshots shown in Exhibit B [EX1028] cannot be considered as prior art because the Petitioner has not satisfied its duty to provide a copy of the video in violation of 35 U.S.C. § 312(a)(3)(A), which requires “copies of patents and printed publications that the petitioner relies upon in support of the petition.” Nor has Petitioner provided a link by which the video can be viewed and retrieved, a transcript of any voiceover or audio, or an English language translation (if applicable). EX1028 does not satisfy Petitioner’s burden because providing a compilation of 9 screenshots of a video that is apparently more than 10 minutes in length does not give the Patent Owner a meaningful opportunity to review the content of what was allegedly published, including what might have been shown in other parts of the video or what might

have been said in the audio or a voiceover. Exhibit B [EX1028] and related statements in the Lonnemann Declaration [EX1013] cannot be considered for at least this reason.

iv. Exhibit B [EX1028] to the Lonnemann Declaration Cannot Serve as a “Printed Publication” Because Petitioner Has Not Demonstrated That The Video Was Publicly Accessible or Publicly Distributed

Petitioner unsuccessfully attempts to demonstrate that the video its customer UD Umweltdienste made of the SenwaTec vehicle was “publicly available” and therefore a “printed publication” through the following sworn statements:

18. The video of Exhibit B was publicly accessible on the internet in 2012.

19. The video of Exhibit B was distributed by UD Umweltdienste to the public prior to August 19, 2013, including in 2012. For example, the video of Exhibit B was distributed by UD Umweltdienste to SenwaTec at least as early as May 3, 2012.

EX1013, ¶¶18-19. These statements fall short of demonstrating that the video was publicly accessible for at least two reasons:

- First, the Lonnemann Declaration does not lay sufficient foundation to establish that Lonnemann has personal knowledge that the video was publicly accessible on the internet in 2012. Lonnemann and his company SenwaTec admittedly did not create the video – UD Umweltdienste did.

EX1013, ¶15. No URL, screenshot, or other corroborating evidence is provided showing that this video was actually published on the internet, where it was published (i.e., which website it was published on), or the actual date of publication. Lonnemann does not state that he personally accessed this video on the internet in 2012. Lonnemann does not state that he personally posted this video on the internet in 2012 or that his company SenwaTec did. Petitioner bears the burden of proving public accessibility and the unsubstantiated statements found in the Lonnemann Declaration are not sufficient. *See Medtronic, Inc. v. Barry*, 891 F.3d 1368, 1380, 127 USPQ2d 1208, 1216-17 (Fed. Cir. 2018) (holding that petitioner failed to carry its burden of proving public accessibility of the allegedly invalidating reference); *Samsung Electronics Co. v. Infobridge PTE Ltd.*, 929 F.3d 1363, 1366–67 (Fed. Cir. 2019) (rejected testimony that a document was publicly accessible because the declarant did not have personal knowledge of such accessibility); *Salpeter v. ARP Manufacturing, LLC*, 2019 WL 7282091 (PTAB 2019) (rejecting a petitioner’s reliance on a video to supplement a product manual in attempted §102 and §103 rejections where no link or verifiable publication date was provided). Notably, the Board in *Salpeter* explained that because the video “did not have a verifiable publication date,

[it was] neither a patent nor a printed publication” and could not be

considered a prior art patent or printed publication under §311(b). *Id.*

- Second, the statement in Paragraph 19 of the Lonnemann Declaration, that UD Umweltdienste distributed the video to SenwaTec is insufficient to demonstrate public accessibility. Cases have consistently held that the standard for public accessibility is whether a person of ordinary skill in the art could, after exercising reasonable diligence, access a reference. *Samsung Elecs.*, 929 F.3d at 1374 (citing *Jazz Pharmaceuticals, Inc. v. Amneal Pharmaceuticals*, 895 F.3d 1347, 1355–56 (Fed. Cir. 2018) (A reference is considered publicly accessible upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it)). Here, the mere fact that a customer (UD Umweltdienste) made a video using a manufacturer’s product and sent that video to the manufacturer (SenwaTec) does **not** demonstrate that “persons interested and ordinarily skilled in the subject matter or art” could access the video at all, let alone after “exercising reasonable diligence.” Indeed, there are no cases standing for that proposition. Lonnemann has not testified to any disclosure of the video by UD Umweltdienste to anyone other than SenwaTec (i.e., anyone outside the

customer-manufacturer relationship). Nor has Lonnemann testified to how many people the video was distributed to at SenwaTec or when. There is simply no evidence here demonstrating that UD Umweltdienste's act of providing the video to SenwaTec was made outside of a private exchange, such as through a private web share.

v. Lonnemann's Declaration [EX1013] Cannot Be Used To Add To The Disclosure Provided in Exhibit B [EX1028]

Lonnemann claims that the UD Umweltdienste video shows the "manure pumping and agitation capabilities" of the SenwaTec vehicle:

7. The Amphi-King was also featured in its customers' advertisements, which showcased the amphibious and manure pumping and agitation capabilities of the Amphi-King. See e.g., Exhibit B.

15. Exhibit B is a compilation of screenshots of a marketing video created by UD Umweltdienste that shows the Amphi-King pumping manure and agitating a manure lagoon.

EX1013, ¶¶7, 15. But without a copy of the video, including any audio, voice-over, or in-video text, there is simply no verifiable information in the record proving that the video informs a POSITA that the SenwaTec vehicle was used to pump manure as opposed to mud, human sewage, or something else. Lonnemann has not testified that he is the operator in the video, that he filmed the video, or that he was present during filming, so he has no personal knowledge of the substance

being pumped. Moreover, the scope of prior art for an IPR, and particularly a video publication, is limited to statements expressly disclosed **in the video itself**. *Cartessa Aesthetics v. Serendia*, 2022 WL 3337271, 11 (PTAB 2022) (holding that any statements about the device not expressly disclosed in the video did not qualify as a “printed publication” under 35 U.S.C. § 311(b) for purposes of the IPR). As *Cartessa* explains, the Petitioner cannot rely on the unsubstantiated statements of Lonnemann to add to the disclosure provided by the video itself. In other words, Lonnemann’s statements claiming that the SenwaTec vehicle has “manure pumping and agitation capabilities” cannot be considered when that information is not expressly disclosed in the video or the collection of screenshots included in Exhibit B. Accordingly, even if the UD Umweltdienste video was a publicly accessible “printed publication,” the screenshots in Exhibit B alone are insufficient to prove the existence of the relevant features and cannot be augmented by Lonnemann’s testimony.

The alleged public uses of the SenwaTec vehicle and related evidentiary issues the Petition raises clearly demonstrates that the District Court presiding over the underlying litigation is THE appropriate forum for these invalidity challenges, which further supports discretionary denial.

**C. The SenwaTec Combination Lacks All Elements of the
Challenged Claims**

**i. SenwaTec Fails to Disclose or Suggest a Fluid Pump For
Pumping Liquid Manure**

Like Truxor, the SenwaTec vehicle is not a manure agitation vehicle and its marketing brochure does not teach or suggest that it is. SenwaTec's marketing brochure prominently advertises at the top of the first page its expertise in the following areas "Ditch Cleaner And Slope Mowers," "Moving and Clearing Boats," "Weed Harvesters," "Amphibious Vehicles," and "Cutter Suction And Excavating Dredges":



40 YEARS OF EXPERIENCE IN THE DEVELOPMENT OF:

- DITCH CLEANER AND SLOPE MOWERS
- MOWING AND CLEARING BOATS
- WEED HARVESTERS
- AMPHIBIOUS VEHICLES
- CUTTER SUCTION AND EXCAVATING DREDGES

SCHRÖER ENVIRONMENT AND WATER TECHNOLOGY

Light Amphibious Boat/Vehicle

"Amphi-King®" SWT-AB380

- ❖ Light and strong aluminum construction, approximately 2480 kg (5,500 lbs.), without attachments
- ❖ 6-wheel drive or track drive system (track drives are patented system)
- ❖ Forward crane ready for many attachments with available power for up to 50 KW (67 HP)
- ❖ Heavy duty Diesel engine certified to the latest standards of Tier IV emission and fuel consumption
- ❖ Optimal configuration of power requirements and hydraulic unit (less operating costs)
- ❖ Low ground pressure and good clearance on terrain, marches and swamps during on-land drives
- ❖ Shallow vessel draft with, low center of gravity for safe on-water maneuvering
- ❖ High working range and wide swing radius of the hydraulic crane arm, ready for many attachments
- ❖ Operating controls conveniently placed and adjustable to suite operator's seat position
- ❖ Vehicle construction & safety configuration according to European & International standards



A compact muscular vehicle with tracks



6-Wheel driven unit with stabilizer pontoons

With a powerful centrifugal pump and 8" suction- and 6" discharge ports, hydraulically driven, delivering 40 kW of pumping power



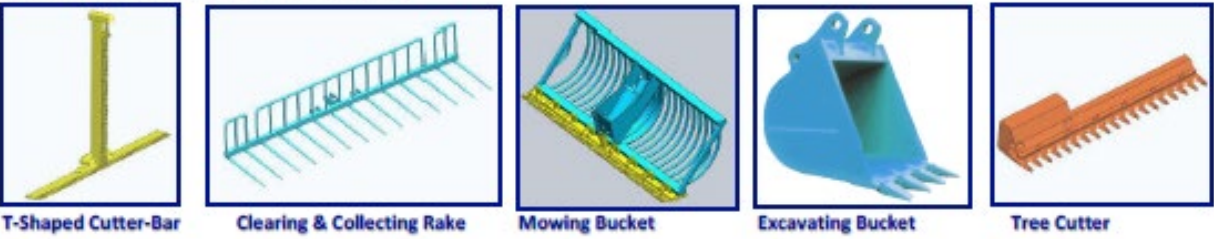
- Ergonomic arrangement of the operating and monitoring elements



-A compact transport package on the tilt deck trailer

EX1012, 1. SenwaTec’s marketing brochure advertises several attachments that can be installed on the end of its vehicle’s excavator arm (boom arm) for use in weed and brush removal and dredging:

Available working tools and attachment units:



Working units:	❖ T-Cutter bar, Clearing & collecting – rake (also available with fine screen) Excavating bucket, Centrifugal pump with HARDOX inner casing, 6" suction x 6" discharge, Tree cutter, Tree saw (check with factory), Mowing bucket
----------------	---

EX1012, SenwaTec, pp. 2-3. There is no reference to manure, farm lagoons, or animal husbandry (livestock farming) in SenwaTec’s marketing brochure. Nor does SenwaTec’s marketing brochure disclose that its dredge pump attachments pump manure.

Petitioner improperly attempts to use Exhibit A [EX1026-27 – the Berky news article] and Exhibit B [EX1028 – screenshots from the UD

Umweltdienste video] to **add** to the teachings of SenwaTec’s marketing brochure [EX1012]:

XII.B, [1.3]; EX1004, ¶¶302-303. The pump described in the SenwaTec publication (“Centrifugal pump with HARDOX inner casing, 6” suction x 6” discharge,) would be capable of pumping liquid manure, as the Amphi-King was shown pumping manure in various pre-2013 publications and advertisements. EX1027, 2; EX1028.

Petition, 65. But that evidence is fatally flawed and cannot be relied upon as teaching a POSITA that the SenwaTec vehicle has “manure pumping capabilities” for the reasons explained in the previous section. The conclusory statements found in the cited paragraphs of the Winkel Declaration [EX1004, ¶¶302-303] rely on this same flawed evidence, provide no comparative analysis of the pumping capabilities or characteristics of SenwaTec’s pump compared to manure pumps, and is at odds with the prosecution history, which limits the scope of the claims to a fluid pump “that pumps manure.” EX1037, 26. As a result, Petitioner has not carried its burden of demonstrating that the SenwaTec Combination discloses “a fluid pump for pumping liquid manure.”

ii. The SenwaTec Combination Fails to Disclose The Claimed Combination of Elements, Which When Considered Collectively, Define an Amphibious Manure Lagoon Agitation Vehicle

The claims are not directed to a general-purpose amphibious vehicle with various tool attachments like SenwaTec's vehicle, but rather define an amphibious vehicle that is specially adapted for the particular purpose of disrupting the crust and recirculating liquid manure in a manure lagoon, where the vehicle can drive into, out of, and navigate the manure lagoon by wireless remote control. EX1001, 8:5-27. The SenwaTec Combination is no different than the Truxor Combination or the other art that was previously considered by the Examiner and the CRU because the SenwaTec's marketing brochure [EX1012] does not reasonably convey a vehicle that pumps manure to a POSITA. On its face, SenwaTec's marketing brochure [EX1012] describes a manned amphibious vehicle for weed removal and dredging, so absent impermissible hindsight, a strict combination of SenwaTec with Yoon or Carrier would result in a remote-controlled amphibious weed clearing and dredging vehicle – not a remote-controlled amphibious manure lagoon agitation vehicle. This is not just a difference in the intended application, but a different collection and arrangement of components and systems.

iii. The SenwaTec Combination Fails to Disclose The Means-Plus-Function Pump Structure Set Forth in the ‘425 Patent Specification

The dredge pumps disclosed in SenwaTec’s marketing brochure have a single outlet and therefore do not have “at least two tangential fluid outlets” as required by the structure recited in the ‘425 Patent specification for the “fluid pump” means-plus-function limitation:



EX1012, 2. Neither Carrier or Yoon disclose a pump housing with at least two tangential fluid outlets and therefore do not cure this deficiency. The SenwaTec Combination does not render Claim 1 unpatentable for this additional reason.

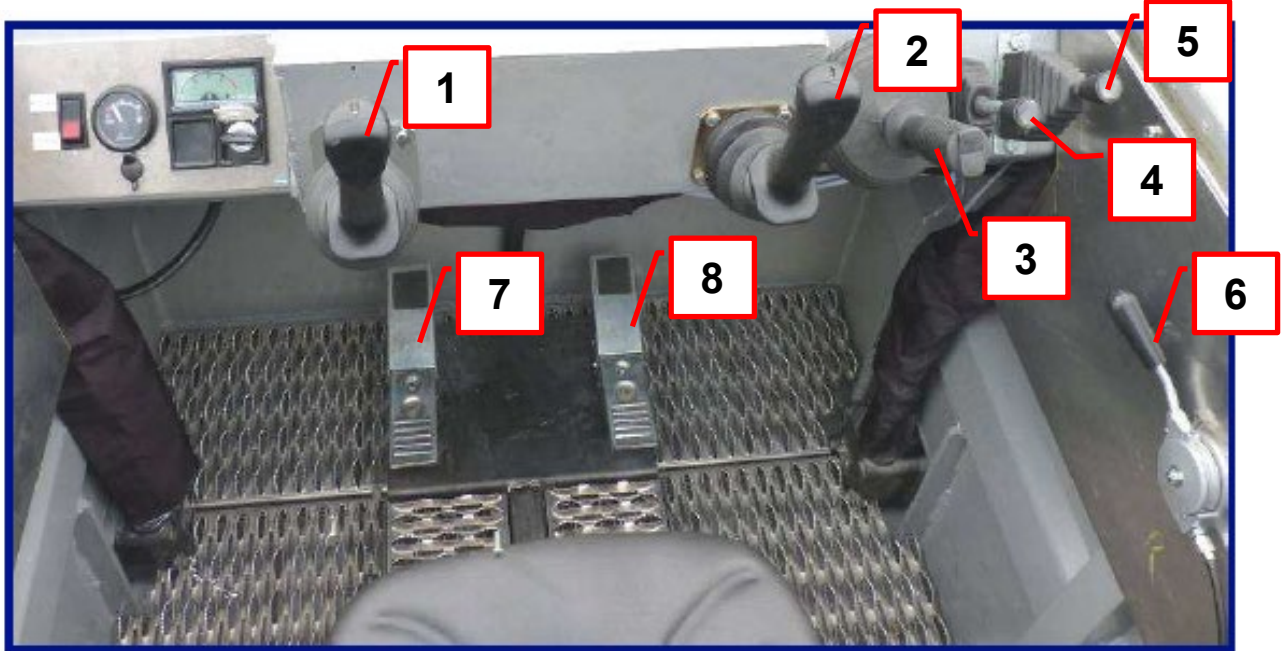
D. Petitioner Has Failed To Carry Its Burden of Demonstrating That a POSITA Would Have Had a Reasonable Expectation of Success in Combining SenwaTec With Yoon or Carrier

The Petition is fatally deficient by failing to demonstrate that a POSITA would have had a reasonable expectation of success in achieving the claimed invention through a combination of SenwaTec with Yoon or Carrier.

Like Truxor, the amphibious vehicle disclosed in SenwaTec and its tool attachments are designed to be operated by an on-board operator. SenwaTec therefore fails to teach the four enumerated wireless remote-control limitations of Claim 1. In Ground 3, Petitioner asserts that a POSITA would **add** wireless remote-control functionality to the amphibious vehicle disclosed in SenwaTec in view of the remote-control teachings of Yoon or Carrier. Petition, 62. But the Petitioner cites **ZERO evidence** in Ground 3 explaining why a POSITA would have had a reasonable expectation of success in making this combination and achieving the claimed invention. Fatally, the Petitioner and its expert focus **solely** on why a POSITA would have been motivated to combine the references, without addressing a reasonable expectation of success or predictable results. Petition, 62-63; EX1004, ¶¶295-297. The references to Melnikov in these sections are made

solely within the context of motivation to combine, but even if they are taken to incorporate all of the arguments that Petitioner made regarding its analysis of Truxor and Melnikov, they are still deficient and do not prove a reasonable expectation of success. As explained above, if it was easy to add remote-control to a vehicle like that disclosed in Truxor, Melniknov would have done that instead of creating a radically different vehicle to add remote-control to. EX2004, ¶142. Even today, some ten years later, there is no evidence that a remote-control option has been added to the Truxor or SenwaTec vehicles. EX2004, ¶¶133-134, 168-169.

SenwaTec's manual controls clearly depend on an onboard operator and close proximity observation of the submersed pump. The vehicle disclosed in SenwaTec has at least 8 different control interfaces – 5 separate joysticks, 2 foot pedals, and 1 hand-lever:



EX1012, 1. Petitioner has not carried its burden of showing that a POSITA would have had a reasonable expectation that all these controls, which must be operated by both hands and both feet, could successfully be carried over to wireless remote-control without significant effort and adaptation. EX2004, ¶¶165, 167, 170. This is fatal in view of the backdrop that the difficulties with converting manual excavator-like controls is known in the art. EX2004, ¶166.

Petitioner also fails to carry its burden of showing that a POSITA could reasonably expect success in operating the SenwaTec vehicle from a remote location where the positioning and operation of the submerged pump would be difficult to observe.

The photographs in SenwaTec’s marketing brochure suggest to a POSITA that remote-control of SenwaTec’s pumping functionality from a distance would

be a **major problem** given that the operators in the photographs are **STANDING**
UP to get a better view of the submerged pump even though the operator's seat
can't be more than 10 feet from the pump:



EX1012, 2. This reinforces what a POSITA would readily appreciate – it would be difficult if not impossible to control and operate this type of vehicle and pump (i.e., those disclosed in SenwaTec or Truxor) from a remote location. EX2004, ¶172.

Finally, Petitioner fails to address another problem that a POSITA would face if they attempted to add remote-control functionality to SenwaTec – remote-control increases the likelihood of a rollover. EX2004, ¶173. One of the video screenshots in Exhibit B to the Lonnemann Declaration illustrates that the SenwaTec vehicle, like Truxor, has a rollover risk:



EX1028, 1. A POSITA would recognize that instability issues with the SenwaTec vehicle would be exacerbated by remote-control. EX2004, ¶175. A POSITA would not have a reasonable expectation that adding remote-control functionality to SenwaTec would be successful in achieving the claimed invention – a remote-

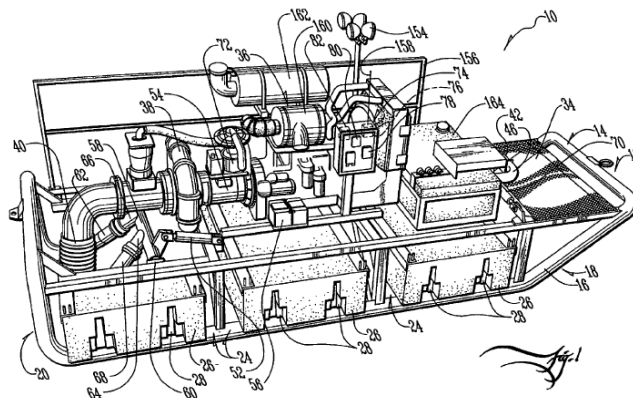
controlled amphibious manure agitation vehicle that has to traverse steep and slippery embankments with entering and exiting manure lagoons. EX2004, ¶176.

XI. GROUND 4: CLAIMS 1-21 ARE NOT OBVIOUS BASED ON PUCK IN VIEW OF BRYHAM

A. Discretionary Denial Under § 325(d) is Appropriate Because The Puck-Bryham Combination is Cumulative of Previously Applied Art

Ground 4 of the Petition is cumulative of prior art combinations the Examiner applied during prosecution and simply re-packages Ground 4 of Petitioner's reexamination request using cumulative art. EX1036, 31; EX2001, 2. Discretionary denial is appropriate because Puck has been considered repeatedly and Petitioner has not carried its burden of showing that Bryham is non-cumulative of at least U.S. Pat. No. 5,176,098 to Royle [EX2012] and Carrier II, which also disclose manned amphibious vehicles with retractable wheels:

Puck [EX1014, 2]



Bryham [EX1015, 2]

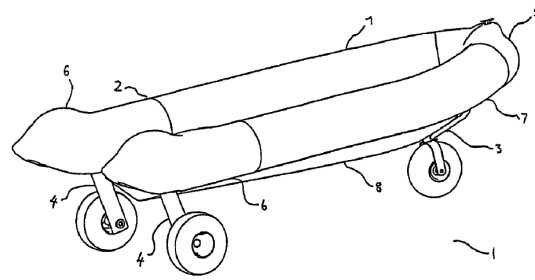


Figure 1

Royle [EX2012, 2]

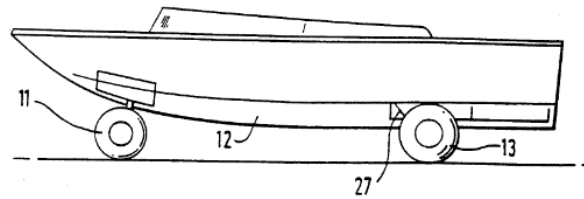


FIG. 1.

Carrier II [EX1020, 4]

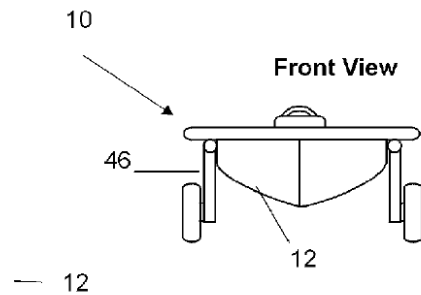


FIG. 4A

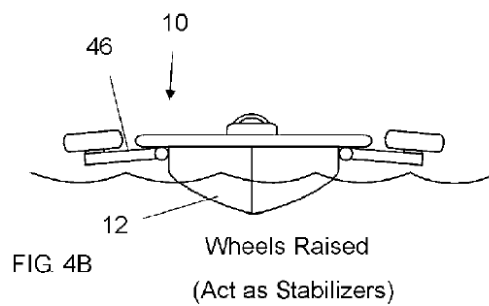


FIG. 4B

Aside from the fact that these references are clearly cumulative, Petitioner has failed to carry its burden of showing that the Examiner erred in allowing the ‘425 Patent over his applied combination of Royle, Remley, and Puck (EX1036, 31) and that the CRU erred in confirming the claims of the ‘425 Patent over Bazooka’s proposed combination of Carrier II in view of Puck.

The CRU found that a POSITA would not have combined a device like Carrier II (i.e., a general-purpose amphibious vehicle) with a device like Puck (i.e., a traditional manure agitation boat):

Reexamination

STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

The following is an examiner’s statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding: claims 1-21 are allowed over the art cited with the request. The examiner has considered and found persuasive the arguments that a pump that pumps manure has different requirements than one that pumps water. These arguments were submitted with the response to the first action in reexamination 90/019,076 that stems from the grandparent application of this patent. Further, without impermissible hindsight, there would not be proper motivation to combine a device like Carrier with a device like Puck. Therefore, the examiner has determined that the prior art does not reasonably show an amphibious vehicle that can be mobile on both land and liquid that pumps manure, in combination with the other claimed elements.

EX1038, 6.

The Puck-Bryham Combination is no different than the Examiner's combination of Royle, Remley, and Puck or Petitioner's prior combination of Carrier II and Puck (Ground 4 of Petitioner's reexamination request). Accordingly, discretionary denial is appropriate under § 325(d).

B. The Puck-Bryham Combination Does Not Disclose All Elements of the Challenged Claims

i. The Puck-Bryham Combination Fails to Disclose or Suggest a “Power Source Configured to Provide Power to Both the Ground Engaging Propulsion Structure And the Fluid Pump”

Neither Puck nor Bryham disclose “a power source that provides power to **both** a manure pump and a ground engaging propulsion structure” as required by the language of Claim 1. Petitioner's sole basis for alleging that this element is met is its expert's conclusory statement that a POSITA would be motivated to use Puck's power source to also power the wheels being added from Bryham:

348. A POSA would have been motivated to use the same internal combustion engine of Puck to power the land-based propulsion system of Bryham because it would be less expensive, more efficient, take up less space, and weigh less than providing two separate engines, one for the fluid pump and one for the hydraulic pump for land-propulsion. Further, the diesel engine of Puck would be more than sufficient to power the land-based propulsion, which Puck teaches could be as high as 2000 HP. EX1014, ¶[0024].

EX1004, ¶348. But Petitioner's expert does not actually show or explain why the

claimed arrangement “would be less expensive, more efficient, take up less space, and weigh less” than using separate electric motors to power Bryham’s wheels, which is one of the preferred embodiments expressly disclosed in Bryham.

EX1015, 16:13-27.

Petitioner has not met its burden with respect to this limitation because its expert’s statement is conclusory, relies on impermissible hindsight, and cites no evidence.

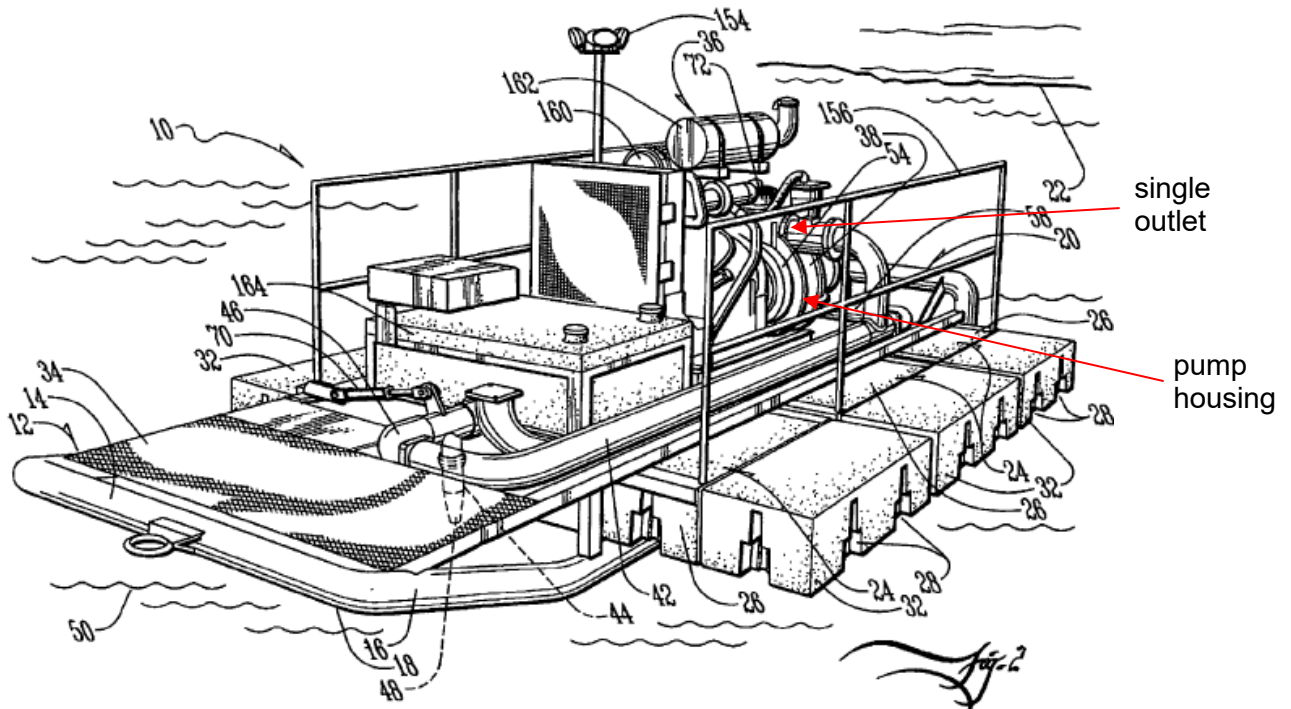
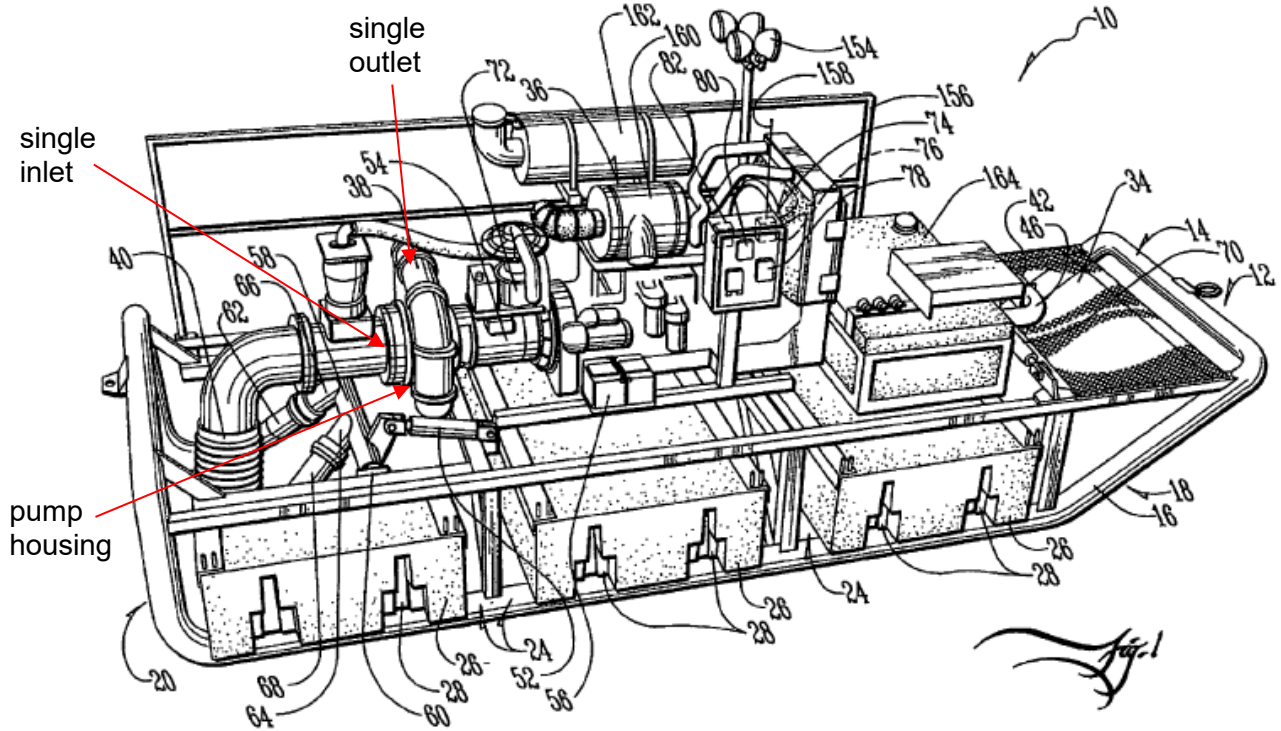
**ii. The Puck-Bryham Combination Fails to Disclose
“Wireless Remote Control Configured to ... (1) Control
The Ground Engaging Propulsion Structure”**

In a similarly conclusory fashion, Petitioner argues that a “POSA would have been motivated to configure the remote-control steering system of Puck to control the speed and direction of the ground engagement means of Bryham while the vehicle is ground engaging” and cites paragraphs 349-350 of the Winkel Declaration. But Puck’s remote-control system is limited to turning the engine on and off, controlling engine speed, turning the nozzles on and off, and controlling nozzle direction. EX1014, ¶¶32-33. So the Petitioner is **not** arguing **simple plug-and-play substitution** here, but instead argues that a POSITA would modify the remote-control system in Puck to control Bryham’s steering and drive system. The problem with Petitioner’s theory is that substantial modifications to Puck’s remote-control system would have to be made and there is no discussion in the references

or even the Winkel Declaration as to how a POSITA could make those modifications to arrive at a successful combination. The Petition repeats Dr. Winkel's general proposition that vehicles with wireless remote-control systems are generally known in the art, but just because the art teaches that *some* vehicles can be remote controlled does not mean that *all* vehicles can be remote controlled or that a POSITA would have had a reasonable expectation that Puck's remote-control could be easily modified to control Bryham's steering and drive system. EX2004, ¶182.

iii. The Puck-Bryham Combination Fails to Disclose The Means-Plus-Function Pump Structure Set Forth in the '425 Patent Specification

The slurry pump 38 disclosed in Puck has a single inlet and a single outlet and therefore does not have "a pump housing configured for immersion within the liquid manure" or "at least two tangential fluid outlets" as required by the structure recited in the '425 Patent specification for the "fluid pump" means-plus-function limitation:



EX1014, 2-3. Bryham does not cure this deficiency as it does not disclose a pump for pumping liquid manure. The Puck-Bryham Combination does not render Claim 1 unpatentable for this additional reason.

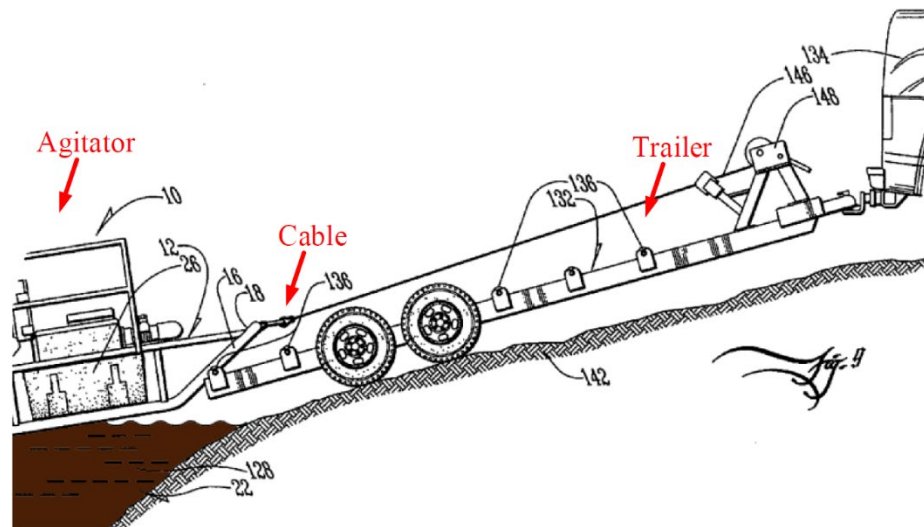
C. Petitioner Has Failed To Carry Its Burden of Demonstrating That a POSITA Would Have Been Motivated to Combine Puck and Bryham With a Reasonable Expectation of Success

The manure agitation boat disclosed in Puck is designed to be launched and retrieved using a trailer. EX1014, 9-10. Thus, Puck fails to teach the limitation of Claim 1 reciting “ground engaging propulsion structure comprising a plurality of ground engaging elements powered by a hydraulic motor.” In Ground 4, Petitioner asserts that a POSITA would add Bryham’s wheels to the manure agitation boat disclosed in Puck. Petition, 76. But the Petition fails to demonstrate that a POSITA would have been motivated to make the Puck-Bryham Combination and would have had a reasonable expectation of success in achieving the claimed invention.

i. Petitioner Has Not Presented Sufficient Evidence Demonstrating That a POSITA Would Have Been Motivated to Combine Puck and Bryham

Petitioner incorrectly asserts that a POSITA would have been motivated to combine the teachings of Puck with the teachings of Bryham “to make transporting, launching, and retrieving the Puck boat easier, safer and without having to put the trailer (let alone one’s feet) in the corrosive manure lagoon.”

Petition, 73; EX1004, ¶331. Neither of these reasons/flaws in Puck’s design are actually supported by Puck’s disclosure. EX2004, ¶189. As shown in the annotated image below from the Petition, Puck actually discloses a system where the manure agitation boat can be launched and retrieved **without backing the trailer** into the manure lagoon:



(*Id.*, FIG. 9 (annotated).)

Petition, 74. A POSITA would therefore recognize that the process of launching and retrieving Puck’s boat does not “require a user stepping in a lagoon” or “exposing a trailer (or vehicle) to highly corrosive environments” in a manure lagoon as Defendant incorrectly argues. Petition, 75. Indeed, neither the trailer nor the operator is shown entering the lagoon when Puck’s boat is launched in the manure boat demonstration video published by Progressive Dairyman. EX2004, ¶192. In view of the foregoing, POSITA would not have seen any problem with Puck’s design that needed fixing. EX2004, ¶193.

Furthermore, if a POSITA were concerned about “exposing a trailer (or vehicle) to highly corrosive environments” as Petitioner suggests, they certainly would not have looked to substitute Puck’s trailer, which did not need to be submersed in a manure lagoon, for a ground engaging propulsion structure that would be submersed in a manure lagoon the entire time the manure agitation vehicle was operating in the lagoon. EX2004, ¶194. In other words, if a POSITA were concerned that the “corrosive” environment of a manure lagoon might damage Puck’s trailer and trailer wheels/bearings, that concern would lead them away from adding Bryham’s wheels to Puck’s manure lagoon agitation boat because the wheels, bearings, etc. of Bryham’s ground engaging propulsion structure would be immersed and remain in the corrosive manure lagoon for the entire period of time during regular agitation sessions, which often take multiple hours. *Id.* Contrary to Petitioner’s arguments, the purported Puck-Bryham Combination would not actually solve the alleged problem of equipment exposure to corrosive manure lagoon environments.

ii. Petitioner Has Not Presented Sufficient Evidence Demonstrating That a POSITA Would Have Had a Reasonable Expectation of Success in Adding Bryham’s Wheels to Puck

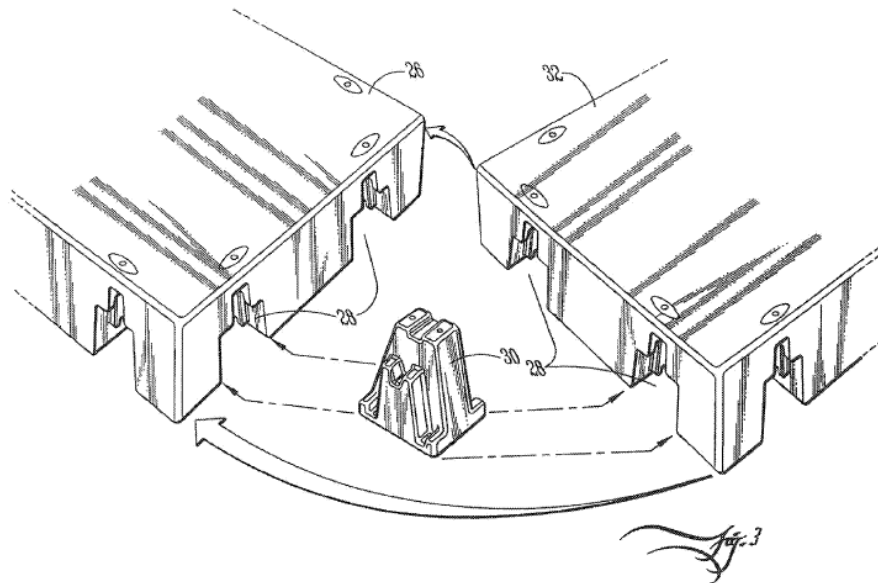
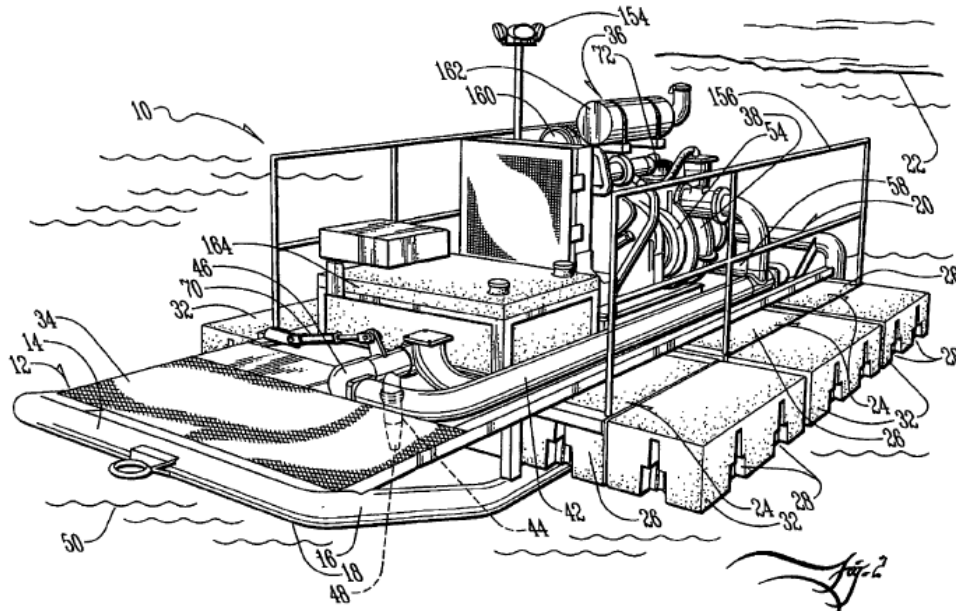
Petitioner cites **ZERO evidence** in Ground 4 explaining why a POSITA would have had a reasonable expectation of success in adding Bryham’s wheels to the manure agitation boat disclosed in Puck to achieve the claimed invention.

Like Royle, Bryham discloses a vee-hull boat with three wheels (one at the bow and two at the stern) that can retract and extend into and out of the boat hull. Unlike Royle and Bryham, Puck is more barge-like and is constructed from modular floating dock sections 26 that are placed in a plurality of receiver slots 24 in a ladder-like frame 14:

(10) from a manure lagoon (22). (FIGS. 1-2). The frame (14) defines a plurality of receiver slots (24) into which are provided modular dock sections (26), such as those known in the art. In the preferred embodiment, the dock sections (26) are 1000 series dock components manufactured by Connect-A-Dock, Inc. of Atlantic, Iowa.

[0023] The modular dock sections (26) are provided with connector slots (28) to fit into interlocking mating engagement with connector pins (30). The connector pins (30) allow the modular dock sections (26) to connect to additional dock sections (32) in a manner such as that known in the art. (FIGS. 1 and 3). The use of interlocking additional dock sections (32) allows for the buoyancy of the vessel (12) to be increased and allows the additional dock sections (32) to be removed to reduce the overall width of the agitator (10) for transport and storage. If desired, pontoons, inflatable components or any

EX1014, ¶¶22-23. The modular dock sections 26 are held together with connector pins 30:



EX1014, 3-4. Petitioner has failed to carry its burden of explaining why a POSITA would reasonably expect that Bryham's wheels could be successfully added to Puck's vessel, when Puck does not have a conventional boat hull structure like that disclosed in Bryham and Puck. Adding Bryham's wheels would seemingly interfere with the modular dock sections required in Puck for floatation

and the two cannot occupy the same space. EX2004, ¶201. Moreover, Puck's vessel is designed so that its weight is evenly distributed when it is on shore and on the trailer. EX2004, ¶203. Puck's vessel is not designed so that its entire weight can be carried at 3 discrete points (one in the front and two in the rear) as it would be if Bryham's wheels were added. EX2004, ¶202. In addition, the connector pins 30 slide into the modular dock sections 26 from the bottom and are wider at the bottom than they are at the top. This gives the connection between the modular dock sections good weight carrying ability when they are floating, but it is not designed to hold the modular dock sections together when they are suspended above the ground, as they would be if Bryham's wheels were added. EX2004, ¶203.

iii. A POSITA Would Expect The Puck-Bryham Combination to Have Steering and Stability Problems That Would Render it Inoperable as a Manure Agitation Vehicle

Petitioner also fails to carry its burden of explaining why a POSITA would reasonably expect that Puck's vessel could successfully drive into and out of manure lagoons if Bryham's wheels even could be added. Petitioner's own expert readily acknowledges that manure lagoons – the environment in which Puck's vessel operates – often have steep and slippery embankments:

a vehicle and trailer designed for paved roads. EX1015, 1:55-60. A POSA would have understood that manure lagoons often do not have a designated paved ramp for launching and retrieving vehicles and that the embankments surrounding lagoons are often steep and may be muddy or covered in vegetation. EX1040, 55. The Northeast Regional Agricultural Engineering Service notes that outside bank slopes may be as steep as 3:1. *Id.* An illustration of a manure lagoon with a steep inside slope and a

EX1004, ¶334. But Petitioner does not explain why a POSITA would have expected the 3-wheel design disclosed in Bryham to provide Puck's vessel with the capability of traversing these steep and slippery embankments, when a POSITA would expect:

- Bryham's 3-wheel design to be inherently unstable, i.e., prone to tipping if used on steep lagoon embankments. EX2004, ¶205.
- Bryham's 3-wheel design, with only two powered wheels at the stern, to have poor traction if used in a manure lagoon and would likely get stuck. *Id.*
- The one small steerable front wheel in Bryham to be prone to sliding in a manure lagoon and would be ineffective in turning the vehicle. *Id.*

Thus, Petitioner has failed to demonstrate that a POSITA would reasonably expect that Puck's vessel could successfully traverse the steep and slippery embankments when entering and exiting manure lagoons if Bryham's wheels were added to Puck. *Id.*

**XII. GROUND 5: CLAIMS 1-21 ARE NOT OBVIOUS BASED ON PUCK
IN VIEW OF BRYHAM AND BENNETT-II**

Petitioner admits that Puck and Bennett were previously considered.

Petition, 88. Bennett-II is a continuation of Bennett with the same specification and Bryham is cumulative of other previously applied art, including Royle and Carrier II. As a result, discretionary denial is appropriate.

Moving to the merits, Ground 5 is largely the same as Ground 4. Therefore, it is not reasonably likely that Petitioner will prevail under Ground 5 for the reasons explained above. *See* Section XI. Petitioner cites Bennett-II for the sole purpose of disclosing additional teachings of remote-control:

Puck in combination with Bryham renders obvious claims 1-21. Should the Board find that the remote-control steering system of Puck would not have been obviously modified to control the Bryham wheels (*supra* Section XIV.B, [1.5]), Bennett-II teaches remote control of the ground engaging propulsion structure.

Petition, 89. But **this solves nothing**. Bennett-II teaches an amphibious vehicle 10 with a pair of tracks 12, 14 that are driven by two drive wheels 590, 592 through a transmission 550 that is powered by a single engine 502:

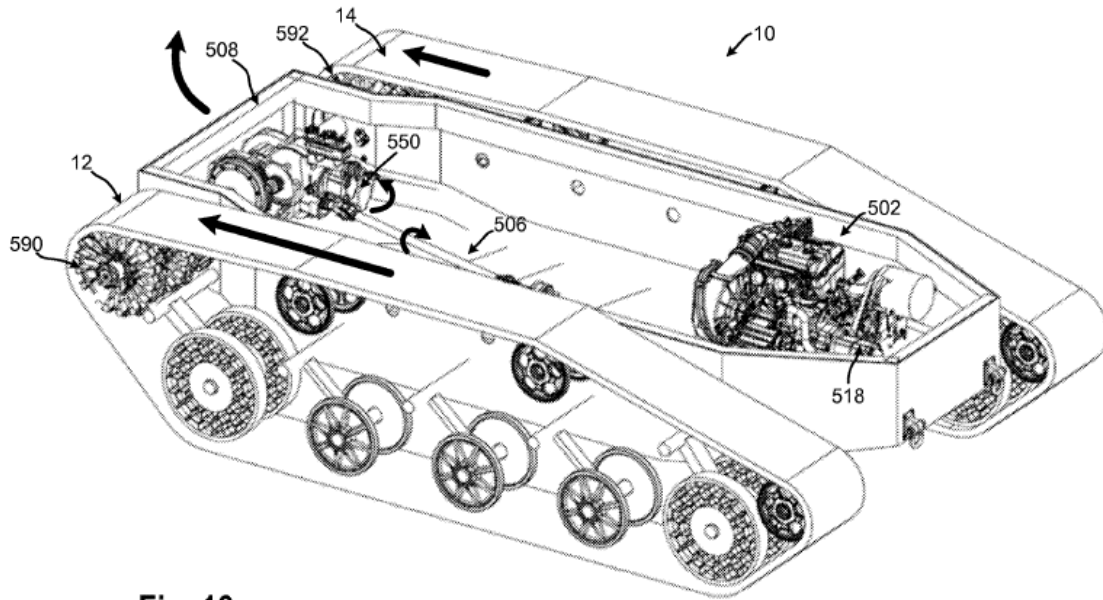


Fig. 16

EX1017, 22. The fact that Para. [0043] of Bennett-II provides the generalized statement that “vehicle 10 may be operated by remote control” tells a POSITA nothing about how one could modify Puck’s remote-control system to control Bryham’s 3-wheeled ground engagement system, which is quite different from Bennett’s drivetrain. EX2004, ¶214. Nor has Petitioner provided evidence on this point.

XIII. GROUND 6: CLAIMS 1-21 ARE NOT ANTICIPATED BY LYSENG

Ground 6, which cites an August 29, 2013 article [EX1019] describing the Patent Owner’s own commercial embodiment of the patented vehicle, relies on the faulty premise that the ‘425 Patent cannot claim priority to the Patent Owner’s August 19, 2013 provisional application due to a typographical error

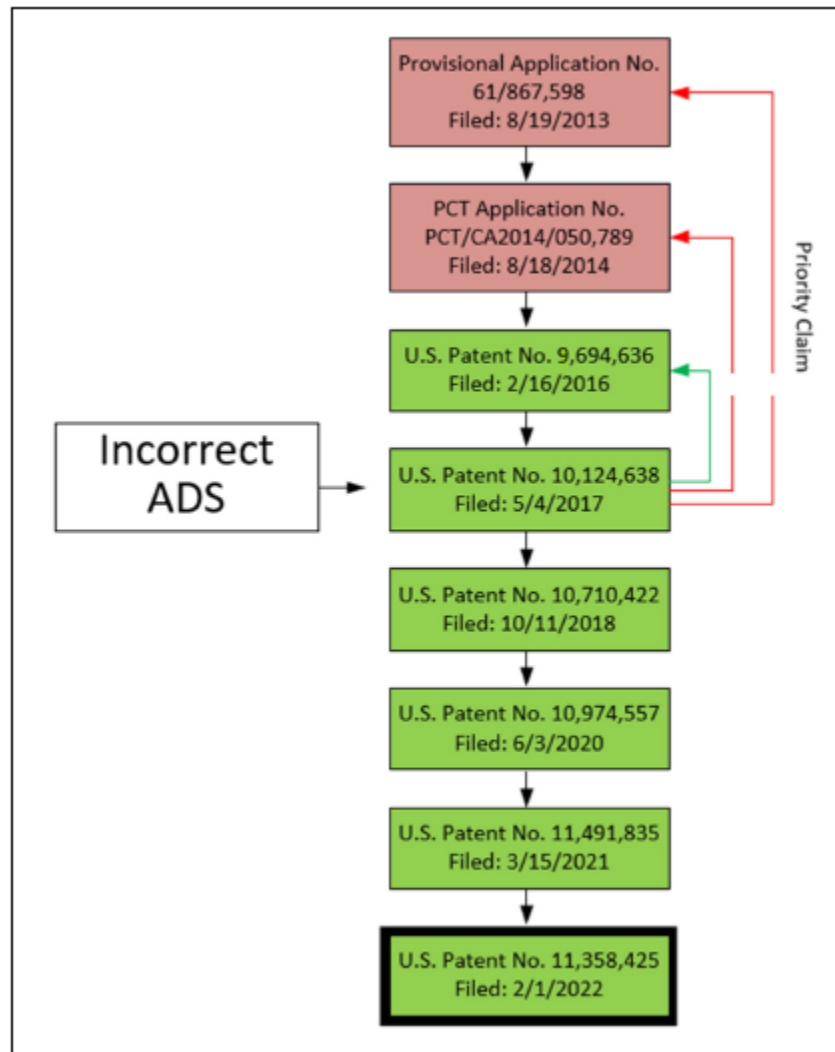
that was made in the ADS filed with the application that matured as the ‘638

Patent:

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15044905	Continuation of	PCT/CA2014/050789	2014-08-18
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/CA2014/050789	Claims benefit of provisional	61867598	2013-08-18
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			

PCT Application No.
PCT/CA2014/050,789
Filed: 8/18/2014

Provisional Application No.
61/867,598
Filed: 8/19/2013



Petition, 29-30. This Ground is a red herring because the ADS setting forth the priority claim for the '425 Patent does **not** contain any errors and the Patent Office has granted the Patent Owner's petition to accept an unintentionally delayed priority claim under 37 C.F.R. 1.78 for the '638 Patent, which corrects the inadvertent error contained in the ADS for the '638 Patent. A copy of the decision granting the Patent Owner's petition is enclosed as EX2002. Because the '425 Patent properly claims priority to the Patent Owner's August 19, 2013 provisional application, the August 29, 2013 Lyseng article [EX1019] does not qualify as prior art to the '425 Patent under 35 U.S.C. § 102.

XIV. CONCLUSION

For the foregoing reasons, Petitioner has not established a reasonable likelihood that any of the Challenged Claims will be found unpatentable.

Dated: October 10, 2023

Respectfully submitted,

By: /James B. Luchsinger/
James B. Luchsinger, Reg. 73,705
HARNESS DICKY & PIERCE, P.L.C.
5445 Corporate Drive, Suite 200
Troy, MI 48098
Phone: 248-641-1600
Fax: 248-641-0270
bluchsinger@harnessip.com

Matthew L. Cutler, Reg. No. 43,574
HARNESS DICKY & PIERCE, P.L.C.
7700 Bonhomme Ave., Suite 400
St. Louis, MO 63105
Phone: 314-726-7500
Fax: 314-726-7501
mcutler@harnessip.com

Attorneys for Nuhn Industries Ltd.

CERTIFICATE OF COMPLIANCE

The undersigned hereby certifies that this brief complies with the type volume limitations of 37 C.F.R. § 42.24(b)(1). This brief contains 13,921 words as calculated by the “Word Count” feature of Microsoft Word for Microsoft 365 MSO, the word processing program used to create this brief.

The undersigned further certifies this brief complies with the typeface requirements of 37 C.F.R. § 42.6(a)(2)(ii) and typestyle requirements of 37 C.F.R. § 42.6(a)(2)(iii). This brief has been prepared in a proportionally spaced typeface using Microsoft Word for Microsoft 365 MSO in Times New Roman 14-point font.

Dated: October 10, 2023

Respectfully submitted,

By: /James B. Luchsinger/
James B. Luchsinger, Reg. 73,705
HARNESS DICKY & PIERCE, P.L.C.
5445 Corporate Drive, Suite 200
Troy, MI 48098
Phone: 248-641-1600
Fax: 248-641-0270
bluchsinger@harnessip.com

Matthew L. Cutler, Reg. No. 43,574
HARNESS DICKY & PIERCE, P.L.C.
7700 Bonhomme Ave., Suite 400
St. Louis, MO 63105
Phone: 314-726-7500
Fax: 314-726-7501
mcutler@harnessip.com

Attorneys for Nuhn Industries Ltd.

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. 42.6(e), I certify that on this 10th day of October, 2023, a true and correct copy of the foregoing **Patent Owner's Preliminary Response** was served by electronic mail on Petitioner's lead and backup counsel at the following addresses:

Lead Counsel

Thomas J. Leach
MERCHANT & GOULD P.C.
150 South Fifth Street, Suite 2200
Minneapolis, MN 55402
Phone: 612-336-4665
Fax: 612-332-9081
tleach@merchantgould.com
USPTO Reg. No. 53,188

Back-up Counsel

Robert A. Kalinsky
MERCHANT & GOULD P.C.
150 South Fifth Street, Suite 2200
Minneapolis, MN 55402
Phone: 612-336-4771
Fax: 612-332-9081
rkalinsky@merchantgould.com
USPTO Reg. No. 50,471

Jeffrey D. Blake
MERCHANT & GOULD P.C.
191 Peachtree Street NE, Suite 3800
Atlanta, GA 30303
Phone: 404-954-5040
Fax: 612-332-9081
jblake@merchantgould.com
USPTO Reg. No. 58,884

Michael A. Erbele
(*pro hac vice* forthcoming)
MERCHANT & GOULD P.C.
150 South Fifth Street, Suite 2200
Minneapolis, MN 55402
Phone: 612-336-4670
Fax: 612-332-9081
merbele@merchantgould.com

Taylor R. Stemler
MERCHANT & GOULD P.C.
150 South Fifth Street, Suite 2200
Minneapolis, MN 55402
Phone: 612-371-5215
Fax: 612-332-9081
tstemler@merchantgould.com
USPTO Reg. No. 79,777

/James B. Luchsinger/
JAMES B. LUCHSINGER
HARNES DICKY & PIERCE, P.L.C.