

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. IPR2024-00004
U.S. Patent No. 11,491,835

**SUR-REPLY IN SUPPORT OF PATENT OWNER'S RESPONSE
(under 37 C.F.R. §42.23)**

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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	January 17, 2024 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. 11,491,835, retrieved on January 15, 2024 from https://patents.google.com/patent/US11491835B2/en?q=US11491835
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)
2029	Timeline Showing Bazooka's Post-Grant Challenges
2030	January 18, 2023 District Court Order Granting Motion to Lift Stay
2031	Reexamination History of U.S. Patent No. 11,358,425
2032	Screenshots from YouTube of SenwaTec video, retrieved on January 15, 2024, from: https://www.youtube.com/watch?v=ecnlfMf7CH4&t=1s
2033	Printout of Bazooka's webpage for its Wolverine Agitation Boat, retrieved on March 30, 2024 from: https://www.bazookafarmstar.com/equipment/wolverine-agitation-boat/
2034	K. Smith et al., <i>Natural Crusting Of Slurry Storage As An Abatement Measure For Ammonia Emissions On Dairy Farms</i> , 97 Biosystems Engineering 464 (2007)
2035	Brochure for MY2017 of Nuhn's Gen 1 Lagoon Crawler
2036	Operator's/Safety Manual for the MY2017 of Nuhn's Gen 1 Lagoon Crawler
2037	Parts Catalog for Nuhn's Gen 1 Lagoon Crawler

2038	Brochure for Nuhn's Gen 1 Lagoon Crawler
2039	Brochure for MY2018 of Nuhn's Gen 2 Lagoon Crawler
2040	Operator's/Safety Manual for the MY2019 of Nuhn's Gen 2 Lagoon Crawler
2041	Parts Book for the MY2018 of Nuhn's Gen 2 Lagoon Crawler
2042	Brochure for Gen 2 Lagoon Crawler
2043	Brochure for MY2022 of Nuhn's Gen 3 Lagoon Crawler
2044	Operator's/Safety Manual for the MY2020 of Nuhn's Gen 3 Lagoon Crawler
2045	Parts catalog for the MY2021 of Nuhn's Gen 3 Lagoon Crawler
2046	Brochure for Nuhn's Crawler X
2047	Parts Catalog for the MY2022 of Nuhn's Crawler X
2048	U.S. Provisional Patent Application No. 63/040,562 filed June 18, 2020
2049	U.S. Provisional Patent Application No. 63/104,887 filed October 23, 2020
2050	U.S. Patent Application Publication US 2021/0394571 published December 23, 2021
2051	Notice of Allowance in U.S. Application No. 17,590,125, Mailed April 22, 2022.
2052	Notice of Intent to Issue Ex Parte Reexamination Certificate, Control No. 90/019,107, Mailed November 2, 2022.
2053	Print No. 1 of Nuhn YouTube Video - "Nuhn Lagoon Crawler Unrivaled Lagoon Agitation!", accessed at https://www.youtube.com/watch?v=fEgvvq9HZk
2054	Lagoon Crawler Prototype Brochure, Aggressive Agitation
2055	Intentionally Omitted
2056	Intentionally Omitted
2057	Intentionally Omitted
2058	Intentionally Omitted
2059 (Under Seal)	Lagoon Crawler Sales Report - X Models
2060	Print No. 2 of Nuhn YouTube Video - "Nuhn Lagoon Crawler Unrivaled Lagoon Agitation!", accessed at https://www.youtube.com/watch?v=fEgvvq9HZk
2061	<i>New Lagoon Crawler Demos Will Satisfy Curiosity</i> , Canada's Outdoor Farm Show Official Show Guide for September 9-11, 2014 in Woodstock, Ontario

2062	H. Rivers, <i>Farm show opens with a splash</i> , The Beacon Herald (Sept. 10, 2014)
2063	B. Shypula, <i>Transforming farming</i> , The London Free Press (Sept. 9, 2013))
2064	B. Shypula, <i>Crawler makes manure almost sexy</i> , The Beacon Herald (Sept. 6, 2013)
2065	30th Annual AMC Engineering Conference Brochure for May 5-7, 2015 in Waterloo, Iowa
2066	Certificate of Services Awarded to Ian Nuhn
2067	M. Beitz, <i>Crawler is turning heads</i> , The Beacon Herald at A2 (Jan. 30, 2014)
2068	C. Elmore, <i>Innovative Uses of Horsepower – A real crapshoot</i> , Diesel Progress North American Edition (Dec. 2014)
2069	D. Rankin, <i>Nuhn Industries celebrates employees at expansion grand opening</i> , 100th lagoon crawler unveiling, St. Marys Independent (Aug. 7, 2015)
2070	B. Reid, <i>Agitator has reclaimed manure lagoons around the world</i> , Ontario Farmer (Aug. 18, 2015)
2071	L. Cudworth, <i>Nuhn marks major milestone</i> , The London Free Press (Aug. 11, 2015)
2072	L. Cudworth, <i>Marking a major milestone</i> , The Stratford Beacon Herald (Aug. 7, 2015)
2073	J. Algie, <i>Made-in-Sebringville lagoon crawler to be featured on Discovery Channel</i> , Betterfarming.com (Sept. 2, 2015)
2074	B. Reid, <i>Self-propelled</i> , Western Dairy Farmer (Oct. 2015)
2075 (Under Seal)	March 21, 2022 Email to Nuhn re: Licensing Lagoon Crawler Technology
2076 (Under Seal)	Nuhn Invoice to Eldon C. Stutsman, Inc. (Sept. 9, 2015)
2077 (Under Seal)	Nuhn Invoice to Eldon C. Stutsman, Inc. (June 20, 2020)
2078 (Under Seal)	Nuhn Invoice to Eldon C. Stutsman, Inc. (Sept. 28, 2020)
2079	Print of Bazooka's YouTube Video - "Meet the Wolverine Agitation Boat," accessed at https://www.youtube.com/watch?v=ehAHKL442as

2080	Discovery Channel's Lagoon Crawler Feature (Sept. 3, 2015)
2081	U.S. Provisional Application No. 61/867,598 (filed August 19, 2013) (“the ‘598 Application”)
2082	U.S. Patent No. 3,384,047 to Remley
2083 (Under Seal)	Declaration of Ian Nuhn
2084	U.S. Patent Application Publication 2010/0144220 to Bailey
2085	Intentionally Omitted
2086	Intentionally Omitted
2087	D. Prairie CV and Case List updated April 2, 2024 (cited here for completeness)
2088	Proposed Protective Order (Redline)
2089	Proposed Protective Order (Clean)
2090	U.S. Patent No. 6,922,922 to Cheramie
2091	Dredge Yard Auger Dredger ECO200-A8-brochure, downloaded from https://dredgeyard.com/wp-content/uploads/2021/01/ECO200-A8-brochure.pdf
2092	Hydraulic Dredgers – Dredge Brokers LLC, accessed at https://dredgebrokers.com/equipment/hydraulic-dredgers/dt-horizontal-cutter/
2093	MANURE MANAGER, Jan./Feb. 2011 (Manure-Manager)
2094	July 9, 2024 Expert Declaration of Douglas Prairie Regarding ‘835 Patent (cited here for completeness)
2095	Agriculture – manure storage statistics, eurostat, Sept. 2013, accessed at https://url.us.m.mimecastprotect.com/s/ZSdwCkRw8BHqom10i2tWvf?domain=ec.europa.eu
2096	Bazooka’s brochure for the Bazooka Wolverine Agitation Boat from: https://www.bazookafarmstar.com/wp-content/uploads/2023/01/Cutsheet-Wolverine-1.pdf
2097	H. Landry et al., <i>Physical and Rheological Properties of ManureProducts</i> , Applied Engineering in Agriculture, at 278 (2004)
2098	<i>Hydrostatic Pto’s Run in Reverse</i> , Farm Show, Vol. 1 No. 5, 1977

I. INTRODUCTION

The '835 Patent has four independent claims (Claims 1, 17, 39, and 40), which are all directed to an amphibious manure pumping vehicle with a powered ground engaging propulsion structure, a liquid manure mover/a liquid manure pump, and wireless remote control. The prior art simply does not teach such a vehicle. Petitioner attempts to overcome deficiencies in the prior art by using overgeneralizations to read the claims on other types of equipment designed for different applications from fire-fighting (Carrier) to dredging (Truxor and SenwaTec). Namely, Petitioner argues:

1. Liquid manure has the same consistency and pumping characteristics as water;¹
2. Humans are animals so human waste is the same as animal manure;²
3. Municipal wastewater ponds are the same as manure lagoons;³
4. All water pumps for firefighting are capable of pumping liquid manure;⁴
and
5. All dredge pumps are capable of pumping liquid manure.⁵

¹ Paper 34, 1.

² Paper 34, 22-23.

³ Paper 34, 22.

⁴ Paper 34, 10-11.

⁵ Paper 34, 19.

But these overgeneralizations, which have been interjected by Petitioner's expert, not the references upon which it relies, are contrary to the intrinsic and extrinsic record.

Carrying on this theme, Petitioner now overgeneralizes that all irrigation pumps are capable of pumping liquid manure.⁶ But none of the prior art references found in Grounds 1-5 have "irrigation pumps" so this argument gets Petitioner no closer to proving that the Nuhn claims are unpatentable. The parties agree that the "hydraulically powered liquid manure mover" element recited in each independent claim of the '835 Patent is a means-plus-function limitation that should be interpreted under 35 U.S.C. § 112(f). The parties also agree that the structure associated with this means-plus-function limitation must include the pump disclosed in the '835 Patent specification. The pump described in the '835 Patent specification is an immersible liquid manure pump, so the claims of the '835 Patent are necessarily narrower than the claims of the '425 Patent and Petitioner's overgeneralizations, which attempt to equate the claimed pump with a generic fluid pump, are even more egregious in this IPR.

Petitioner also argues that Nuhn's evidence of secondary considerations is limited to just an inventor declaration. This is incorrect. Nuhn has submitted sales data [EX2059], licensing communications [EX2075], awards and

⁶ Paper 34, 2.

publications praising the invention [EX2060 – EX2074] and [EX2080], expert testimony [EX2004] and [EX2094], and prior art descriptions of long felt need [EX2014], all of which corroborate the inventor’s declaration testimony.

II. FUNDAMENTAL QUESTIONS AT ISSUE IN THIS IPR

There are several fundamental questions the Board must consider:

(1) What makes liquid manure different from water?

It is undisputed that liquid manure not only contains suspended solids, but is also highly corrosive and acts as a non-Newtonian fluid.⁷

(2) What makes a pump a liquid manure pump?

A liquid manure pump must be capable of performing and surviving in liquid manure pumping applications.⁸ Petitioner has not carried its burden of showing that the prior art satisfies the liquid manure pump limitation of the claims; namely, that the prior art pumps could handle the large solids, non-Newtonian behavior, and corrosivity of liquid manure.

While there is no bright-line structure or specification for liquid manure pumps, a POSITA would consider the following types of evidence to determine if a prior art pump was a liquid manure pump:

(i) Was the pump designed to pump liquid manure?

⁷ EX1004, ¶120; EX1110, ¶109; EX2094, ¶¶114-116, 144; EX2097, 2.

⁸ EX2094, ¶¶120-124.

- (ii) Has the pump been described or marketed as a liquid manure pump?
- (iii) Has the pump been tested and validated in liquid manure pumping applications?
- (iv) Does the pump have structure that would become clogged and/or damaged by pumping liquid manure?
- (v) Does the pump have substantially the same structure as the example provided in the '835 Patent?⁹

Other than the pump in Puck, which is described as “a liquid manure pump,”¹⁰ Petitioner has not carried its burden of demonstrating that a POSITA would consider the prior pumps “liquid manure pumps,” as required by Nuhn claims. Indeed, Petitioner has not provided any of the categories of evidence listed above for the pumps described in Carrier, Truxor, or SenwaTec. Instead, Petitioner takes the plainly untenable position that water pumps and manure pumps are synonymous and that manure has the same pumping characteristics as water.¹¹ Those arguments overlook fundamental and obvious differences between liquid manure (highly corrosive and a non-Newtonian fluid) and water (not corrosive and a Newtonian fluid).¹²

⁹ EX2094, ¶¶83-84.

¹⁰ EX1014, ¶0025.

¹¹ Paper 34, 1.

¹² EX1004, ¶120; EX1110, ¶109; EX2094, ¶¶114-116, 144; EX2097, 2.

(3) Would a POSITA understand Carrier, Truxor, and SenwaTec as teaching a liquid manure pumping vehicle with a liquid manure mover/liquid manure pump?

Carrier teaches a vehicle with optional firefighting pumps for “pumping water from a lake or stream”¹³ and Truxor/SenwaTec are vehicles with optional dredge pumps.¹⁴ There is no evidence that Carrier’s water pumps could pump liquid manure (a highly corrosive non-Newtonian fluid)¹⁵ and survive in that application. While Petitioner cites publications discussing the use of dredging equipment in manure lagoons, Petitioner makes an impermissible leap in assuming that the Truxor and SenwaTec pumps are equivalent in capacity, construction, and materials as the dredging equipment described in publications as being used in manure lagoons. That assumption is not factually supported, so Petitioner has not reasonably shown that a POSITA would expect the Truxor and SenwaTec pumps to perform or survive in highly corrosive manure lagoon environments.

(4) Would a POSITA have modified Truxor, SenwaTec, and Puck to arrive at Nuhn’s invention?

¹³ EX1005, Fig. 1, ¶61.

¹⁴ EX1006, 10; EX1012, 2.

¹⁵ EX1004, ¶120; EX1110, ¶109; EX2094, ¶¶114-116, 144; EX2097, 2.

Melinikov [EX1024] shows that POSITAs recognized the challenges in converting Truxor’s manned vehicle to wireless remote control and chose a different direction to avoid implementation obstacles of controlling a boom-mounted dredge pump using wireless remote control.¹⁶ The record also shows that prior to Nuhn’s invention, powered wheels had never been added to agitation boats like Puck.¹⁷ In fact, the record shows that the industry was skeptical of doing so prior to Nuhn’s invention.¹⁸

III. LEVEL OF ORDINARY SKILL

Petitioner’s definition of a POSITA, which emphasizes formal engineering degrees and experience in industries that are different than manure lagoon agitation, is unsupported and contrary to the record. Nuhn’s invention serves a niche market within the farming industry. Petitioner’s “industry experts” tout their years of experience in manure handling – not engineering degrees.¹⁹ A POSITA is most properly defined as “a livestock farmer or commercial manure applicator familiar with manure agitation equipment or an engineer with at least 2 years of

¹⁶ EX2094, ¶¶186-190.

¹⁷ EX2094, ¶¶24-31.

¹⁸ EX2083, ¶¶53-60.

¹⁹ EX1119, ¶¶2-5; EX1120, ¶¶2-6.

experience designing agricultural equipment and knowledge of manure agitation equipment.”²⁰

Petitioner’s suggestion that Nuhn’s expert is not a POSITA under its definition is spurious, overlooking his master’s degree in mechanical engineering, university teaching experience, and job experience, which includes designing trash pumps.²¹ Nuhn’s expert is qualified as a POSITA under both parties’ definitions.

IV. CLAIM INTERPRETATION

A. “Liquid Manure Mover”

Both the Petitioner and the Patent Owner, and their respective experts, agree that the term “liquid manure mover” does not have a sufficiently definite meaning such that § 112(f) applies. It is also undisputed that the function of the term “liquid manure mover” is to “move liquid manure.” With respect to the means for performing the recited function, the parties appear to agree that the means disclosed in the specification for “liquid manure mover” is at least “a pump, a conduit, and a nozzle.” Where the parties disagree and where Petitioner’s definition is overgeneralized is that the specification of the ‘835 Patent does not disclose that any general purpose or generic pump will do. Rather, the specification of the ‘835 Patent describes an immersible liquid manure pump and discusses problems

²⁰ EX2094, ¶64.

²¹ EX2094, ¶¶4-13.

associated with other types of pumps that can become plugged by solid materials and lose prime.²² The ‘835 Patent specification explains that liquid manure pump of the liquid manure mover must be immersible and capable of handling solids.²³ In addition, a POSITA would understand that a liquid manure pump would need to withstand the corrosiveness and shear properties of the liquid manure being pumped through it.²⁴ Petitioner’s definition of “liquid manure mover” as simply requiring a generic “pump” is overgeneralized and incorrect.

B. “Liquid Manure Pump”

Petitioner’s intended use argument lacks merit and has been rejected by the Board, which found in its institution decision, that at a minimum, the liquid manure pump limitation required a pump capable of pumping fluid with suspended solids.²⁵ But it is not enough for the pump to simply have “structure that is capable of pumping liquid with suspended solids” because this overlooks that fact that liquid manure is a highly-corrosive, non-Newtonian fluid.²⁶ The pump must withstand the corrosiveness and shear properties of the fluid being pumped through it. Petitioner’s own expert acknowledges that studies report that “several

²² EX1001, 2:65-3:20; 7:20-46.

²³ *Id.*

²⁴ EX2094, ¶¶114-116, 144.

²⁵ Paper 12, 18.

²⁶ EX2094, ¶¶114-116, 144.

millimeters of material could be lost from a metallic plate in a year’s time” when placed in a manure lagoon and “describe some metal samples losing the entirety of their metal mass in less than 30 months of exposure to the lagoon surface.”²⁷ Petitioner does not address this issue at all when asserting that the liquid manure pump limitation simply requires a “high volume water pump for pumping water from lakes and streams.”²⁸

V. GROUND 1: CLAIMS 1-10, 13-26, and 29-40 ARE NOT ANTICIPATED BY CARRIER

A. Independent Claims 1, 17, 39, and 40: Carrier Fails to Teach Both a “Liquid Manure Mover” and a “Liquid Manure Pump”

Petitioner admits it relies on inherency in arguing that Carrier anticipates the ‘835 Patent claims, but inherent anticipation does not give Petitioner license to read a limitation out of the claims. A POSITA would not have considered Carrier’s firefighting water pumps 202 to be liquid manure pumps or liquid manure movers. There is no evidence that Carrier’s water pumps: (1) were designed to pump liquid manure; (2) have been described as liquid manure pumps; (3) were tested and validated in manure pumping applications; or (4) have substantially the same structure as the example provided in the ‘835 Patent. Carrier’s pumping

²⁷ EX1004, ¶120; EX1049, 5; EX1050; 8.

²⁸ Paper 34, 7.

system also has structure (a screen) that would become clogged if Carrier were used to pump liquid manure.²⁹

Petitioner relies on an overgeneralization that any “high volume water pump” is capable of pumping liquid manure based on the incorrect premise that “liquid manure” in ‘835 Patent claims refers to “water and manure mixtures with solid contents lower than about 5%.”³⁰ But Petitioner’s reliance on delineated ranges of percent total solids (%TS) is flawed because it is based on extrinsic evidence and fails to account to the size and nature (e.g., hardness, shear behavior, etc.) of the solids.³¹ It is undisputed that Carrier’s water pumps 202 are small closed units (i.e., no open or semi-open impeller), are mounted high up on the top side of the vehicle, and are designed to pump water from a lake or stream.³² It is also undisputed that Carrier discloses that its pumping system has a screen.³³ A POSITA would have recognized that this screen would become clogged in liquid manure pumping applications.³⁴

Petitioner also overlooks the highly corrosive nature of liquid manure – a fact on which both experts agree.³⁵ There is no evidence that Carrier’s water

²⁹ EX2094, ¶154.

³⁰ Paper 34, 9.

³¹ EX2094, ¶¶86-99.

³² EX1005, Fig. 1, ¶61.

³³ EX1005, ¶63.

³⁴ EX2094, ¶154.

³⁵ EX1004, ¶120; EX2094, ¶144.

pumps and constituent components (e.g., impellers, diaphragms, pistons, seals, bushings, and bearings) could withstand the corrosiveness of liquid manure. Petitioner therefore fails to satisfy its burden that Carrier teaches a liquid manure mover and liquid manure pump.

B. Independent Claims 1, 17, 39, and 40: Carrier Fails to Teach a “Wireless Remote Control Configured to . . . Control a Flow of Liquid Manure From . . . the Liquid Manure Mover/Liquid Manure Pump”

A POSITA would not understand Carrier as disclosing any pump that is capable of pumping liquid containing suspended solids, let alone any structure that “control[s] a flow of liquid manure.”³⁶ Accordingly, it necessarily follows that a POSITA would not understand Carrier as teaching a wireless remote control of “a flow of liquid manure from a liquid manure pump/the liquid manure mover,” as required by the Challenged Claims.³⁷

VI. GROUNDS 2-5: CLAIMS 1-40 ARE NON-OBVIOUS

A. SECONDARY CONSIDERATIONS WEIGH STRONGLY AGAINST OBVIOUSNESS

i. Nexus

Petitioner argues that nexus is lacking between Nuhn’s sales numbers and the ‘835 Patent because Nuhn’s Crawler X includes “unclaimed features” that are

³⁶ EX2094, ¶151.

³⁷ EX2094, ¶155.

not present in the ‘835 Patent claims.³⁸ But Petitioner does not identify what these “unclaimed features” are or explain how they destroy the nexus between Nuhn’s secondary consideration evidence and the ‘835 Patent, when Patent Owner has shown that the ‘835 Patent claims are coextensive with Nuhn’s Crawler X.³⁹ Petitioner’s argument is illogical – it makes little sense that nexus cannot be proven when a commercial product is covered by multiple continuation patents of differing scope.

ii. Commercial Success

Nuhn does not rely solely on Ian Nuhn’s statements regarding commercial success without providing data, as Petitioner argues. Petitioner overlooks and ignores the sales data Nuhn provided in its sales report [EX2059], which corroborates Ian Nuhn’s statements about commercial success. Petitioner provides no evidence that Nuhn’s sale data is incorrect, misleading, or that it reflects insignificant sales in this niche market.

Nor is Nuhn’s commercial success attributed to marketing and aesthetics as Petitioner argues. Instead, Nuhn provided overwhelming evidence of the Lagoon Crawler’s superior maneuverability and lagoon agitation performance, as well as evidence of Nuhn’s minimal advertising expenditures.⁴⁰ Petitioner attempts to

³⁸ Paper 34, 13-14.

³⁹ EX2096, ¶¶298-326.

⁴⁰ EX2083, ¶¶17-20, 28-32.

seize on the anecdotal comments in one or two of the articles about bright red paint and knobby tires to argue that farmers only buy this product because of the way it looks, but nearly all farm equipment (e.g., tractors) have bright paint and knobby tires. Newspaper accounts of how members of the general public react to Nuhn’s Lagoon Crawler do not reflect why farmers/manure applicators purchase the expensive piece of machinery. EX2061 states that “[f]or farmers who have seen or purchased a Crawler, their expectations have been exceeded” and empathizes how it “impresses farmers with its ability maneuver within the lagoons, agitate solids from the bottom surfaces.”⁴¹ In the Discovery Channel segment featuring Nuhn’s Lagoon Crawler, a customer stated that with Nuhn’s Lagoon Crawler “what usually takes me 3-4 hours to get to this point. . . we’re there in 10-15 minutes” and that he “never thought it could be done. This is good.”⁴² That record clearly shows that customers purchase Nuhn’s Lagoon Crawler for its maneuverability and manure agitation performance – not its looks.⁴³

iii. Long Felt Need

Existing floating agitation boats did not fulfill the industry’s long-felt need, as Petitioner asserts. Instead, the unrebutted evidence demonstrates that

⁴¹ EX2083, ¶¶41; EX2061.

⁴² EX2083, ¶¶50; EX2080.

⁴³ EX2083, ¶¶38, 40, 41, 50, 51; EX2061; EX2067; EX2074; EX2080.

Nuhn’s Lagoon Crawler quickly overtook Puck as the market share leader.⁴⁴ In addition, Nuhn demonstrated the undisputed problems with floating agitation boats that existed before the Nuhn inventions, including that: (1) they require more time and effort to launch and retrieve; (2) they get stuck (“beached”) on sandbars and in the shallows and muck of manure lagoons and cannot chew through thick surface crust; and (3) there were problems controlling manure agitation boats, as many required guidewires to control and those that didn’t experienced issues (e.g., Puck’s boat sprayed the crowd at a demonstration).⁴⁵

iv. Copying

Petitioner’s statement that the only evidence Nuhn provides of copying is from a discussion with a Stutsman’s mechanic is incorrect.⁴⁶ Petitioner overlooks evidence showing access [EX2076-2078 – Stutsman’s invoices], the comparison made by Nuhn’s expert,⁴⁷ and the evolution of Petitioner’s Wolverine into a copy-cat product, which is documented in Petitioner’s patent filings [EX2048-2050].⁴⁸ Petitioner’s addition of propellers does not negate its copying of Nuhn’s design.

⁴⁴ EX2083, ¶¶11-15, 17-20, 27; EX2083, ¶38, EX2067 (“[s]ome people have tried mounting pumps on boats” but “there’s nothing else like the crawler on the market.”)

⁴⁵ EX2094, ¶¶113, 327-329; EX2083, ¶¶11-15, 17-20; EX1120; EX1153; EX1154; EX1156.

⁴⁶ Paper 34, 15.

⁴⁷ EX2094, ¶¶335-354.

⁴⁸ EX2094, ¶¶349-353.

Nor is it relevant that the Wolverine's wheels do not raise and lower, as that feature is not in the '835 Patent claims.

v. Unexpected Results

Petitioner overstates what the record shows when it argues that it was known to use amphibious vehicles with hydraulically-driven wheels in manure lagoons.⁴⁹ Contrary to Petitioner's assertions, Truxor/SenwaTec not only differ from the claims with respect to remote control,⁵⁰ but there is also no evidence that Truxor or SenwaTec had ever been used in an animal manure lagoon. Further, Petitioner has not countered Nuhn's affirmative evidence that industry veterans in fact expressed skepticism when Nuhn developed and launched the invention.⁵¹

vi. Skepticism

Petitioner's argument that others used and marketed amphibious vehicles with hydraulically-driven wheels in manure and corrosive environments before Nuhn's Lagoon Crawler is wrong.⁵² In particular, the prior art emphasizes the light-weight, low-ground pressure characteristics of vehicles like Carrier, Truxor, and SenwaTec, which are designed to leave little disturbance when traversing sensitive

⁴⁹ Paper 34, 15-16.

⁵⁰ Paper 34, 16.

⁵¹ EX2083, ¶¶53-5.

⁵² Paper 34, 16.

marsh lands.⁵³ These vehicles are not vehicles that are used and marketed as being used in manure lagoon environments.

Petitioner's argument that Nuhn's evidence of skepticism is unsupported because Ian Nuhn only identified Dennis Nuhn is also wrong.⁵⁴ In his declaration, Ian Nuhn recants the skepticism/criticism that he repeatedly received at tradeshow when Nuhn first launched its Lagoon Crawler.⁵⁵

vii. Praise

Petitioner's attempts at discrediting Nuhn's evidence of industry praise, including a litany of awards and news articles, lack sensibility.⁵⁶ Petitioner again attempts to seize on the anecdotal comments in one or two of the articles about bright red paint and knobby tires as an irrelevant distraction. Instead, Nuhn's invention was ground-breaking, innovative, and created an entirely new product category in the market for manure lagoon agitation equipment.⁵⁷ The revolutionary

⁵³ EX1005, ¶5 (“[prior art vehicles] are often too large, slow moving, or ill-equipped to handle a variety of potential deployment needs in which now require relatively light weight, fast moving, highly mobile, low profile signature vehicles”); EX1006, 2 (“Driven with care and with its minimal ground pressure, damage to river banks and sensitive areas can be minimised making the Truxor ideal for working on golf courses, nature reserves and public parks where larger, heavier machines have difficulty operating”); EX1012, 1 (advertising SenwaTec's “Low ground pressure”).

⁵⁴ Paper 34, 17.

⁵⁵ EX2083, ¶¶53-60.

⁵⁶ Paper 34, 17.

⁵⁷ EX2083, ¶¶35-37 (innovation awards), EX2083, ¶38 (EX2067 – article entitled “Transforming farming”); EX2083, ¶45 (EX2070 – article acclaiming Nuhn's

nature of the product is what made Nuhn’s Lagoon Crawler newsworthy in the first place – not its aesthetic appearance. Most farm tractors sport bright paint and large knobby tires, but they do not receive the level of media attention that Nuhn’s invention received.

viii. Licensing

Petitioner’s attempt to downplay the relevance of Puck’s licensing email [EX2075] overlooks the significance of Puck’s prior market position. This email shows that the prior market share leader wished to license Nuhn’s Lagoon Crawler patents.⁵⁸

Petitioner makes an unsupported and misleading argument that this email was really about a different patent family covering Nuhn’s tractor-mounted, PTO-driven manure pumps.⁵⁹ But there is no reference to tractor-mounted pumps in the email. Instead, Puck sought to license Nuhn’s patents for “a new boat”.⁶⁰ Nuhn’s testimony remains unrebutted. Again, it is significant that Petitioner submitted a declaration [EX1119] made by the owner of Puck Enterprises and that declaration failed to rebut the characterization Nuhn has made of that email. Surely Puck

product launch as “the unveiling of a revolutionary piece of farming technology.”)

⁵⁸ EX2083, ¶¶27, 64-67.

⁵⁹ Paper 34, 18.

⁶⁰ EX2075.

would have pointed out any inaccuracies in Ian Nuhn’s statements if its licensing discussions were about a different patent family.

VII. GROUNDS 2 AND 3: CLAIMS 1-5, 7-21, and 23-40 ARE NOT OBVIOUS BASED ON TRUXOR/SENWATEC IN VIEW OF YOON OR CARRIER

A. A POSITA Would Not Have Been Motivated to Combine These References With a Reasonable Expectation of Success

As Nuhn has pointed out, Petitioner’s argument hinges on the false premise that a POSITA would have found it obvious to:

- (1) put the Truxor/SenwaTec vehicle in an environment (manure lagoons) and application (manure lagoon agitation) that they were not designed for and have never been used in – either before Nuhn’s patent or since; and
- (2) modify the Truxor/SenwaTec vehicle to arrive at Nuhn’s invention.⁶¹

The evidence does not support either premise. It is undisputed that the Truxor and SenwaTec vehicles were designed and advertised as amphibious vehicles for clearing weeds and dredging sediment from shallow lakes, ponds, and streams.⁶² There is no evidence that the Truxor vehicle was used outside of this application. The evidence Petitioner cites for SenwaTec [EX1013] only shows use in municipal wastewater ponds – not highly corrosive manure lagoons. Nor has Petitioner rebutted Nuhn’s evidence that the Truxor/SenwaTec vehicles required close

⁶¹ EX2094, ¶¶173-191, 204-218.

⁶² EX1006, 1; EX1012, 1.

proximity observation of the dredge pump by an onboard operator and were prone to instability/rollover, which would have discouraged conversion to remote control operation.⁶³

B. Claims 1, 17, 39, and 40: Truxor and SenwaTec in View of Yoon or Carrier Do Not Disclose Either a Liquid Manure Pump or a Liquid Manure Mover

It is undisputed that the Truxor and SenwaTec references themselves do not teach or suggest that their optional dredge pumps would work in liquid manure. A POSITA would not have considered the dredge pumps in Truxor and SenwaTec to be a liquid manure pump or a liquid manure mover because there is no evidence that the Truxor and SenwaTec dredge pumps: (1) were designed to pump liquid manure; (2) were described, advertised, or sold as liquid manure pumps; (3) were tested and validated in manure pumping applications; or (4) have substantially the same structure as the example provided in the ‘835 Patent.

Truxor’s Doro Pump is advertised as a “pump . . . for pumping light sediments and volatile sand.”⁶⁴ Petitioner’s evidence regarding SenwaTec’s pumping capabilities also focuses solely on pumping water with suspended solids.⁶⁵ Petitioner overlooks that fact that manure acts as a non-Newtonian fluid and therefore behaves differently than water with suspended solids (e.g., sediment)

⁶³ EX2094, ¶¶173-191, 204-218.

⁶⁴ EX1007, 123.

⁶⁵ EX1110, ¶155.

when pumped. Petitioner attempts to remedy this by relying on an overgeneralization that any “dredge pump” is capable of pumping liquid manure because the art discusses the use of cutterhead dredges to dredge manure lagoons.⁶⁶ But there is no evidence that Truxor and SenwaTec pumps are comparable in size, capacity, construction, or materials to the dredging equipment (cutterhead dredges) used to dredge manure lagoons. So this generalization alone does not carry Petitioner’s burden.

Petitioner also overlooks the highly corrosive nature of liquid manure – a fact on which both experts agree.⁶⁷ A liquid manure pump and its constituent components, must survive (i.e., not be damaged by) the highly corrosive environment of manure lagoons.⁶⁸ There is no evidence that Truxor’s pumps could withstand the corrosiveness of liquid manure and Petitioner has not demonstrated that the decommissioned municipal wastewater ponds that SenwaTec operated in were highly corrosive. The undisputed fact that on-board human operators drove the SenwaTec vehicle into these ponds in Germany – a country with stringent health and safety requirements, suggests that these decommissioned wastewater ponds were not highly corrosive environments like manure lagoons, as does the un rebutted fact that wastewater ponds are placed at the end of the wastewater

⁶⁶ EX1110, ¶103.

⁶⁷ EX1004, ¶120; EX2094, ¶144.

⁶⁸ EX2094, ¶83.

treatment process to disinfect the water before it is released back into the environment.⁶⁹ Petitioner therefore fails to satisfy its burden in demonstrating that a POSITA would have had an expectation that Truxor and SenwaTec's dredge pumps could pump liquid manure and survive in that application.

C. Claims 1, 17, 39, and 40: Truxor and SenwaTec in View of Yoon or Carrier Do Not Disclose A Liquid Manure Mover Positioned Within Liquid Manure when the Vehicle is Floating

Petitioner ignores the fact that neither Truxor nor SenwaTec's dredge pumps are ever positioned within liquid manure and thus cannot disclose a liquid manure mover positioned within liquid manure.⁷⁰

Further, the claim language is absolute in its requirement of a "liquid manure mover positioned within liquid manure when the vehicle is floating." The claim language does not say that the liquid manure mover "may be positioned," is "sometimes positioned," is "configured to be positioned," or is "positionable" within liquid manure when the vehicle is floating. Instead, the claim language requires the liquid manure mover to be positioned on the vehicle such that it is necessarily positioned within liquid manure (i.e., is always submersed) when the vehicle is floating. Stated differently, this limitation requires the liquid manure mover to be mounted in a location that is always below the "waterline" of the

⁶⁹ EX2094, ¶35; EX2022, 7.

⁷⁰ Paper 34, 20.

vehicle when the vehicle is floating. Petitioner's argument that the Truxor and SenwaTec pumps can be lowered to a submerged position does not satisfy the language of the '835 Patent claims.

D. Claims 1, 17, 39, and 40: Truxor and SenwaTec in View of Yoon or Carrier Do Not Disclose a Wireless Remote Control Configured to Control a Flow of Liquid Manure from the Liquid Manure Mover/Liquid Manure Pump

Petitioner again ignores the fact that neither Truxor nor SenwaTec's dredge pumps are liquid manure pumps.⁷¹ Further, SenwaTec's marketing brochure suggests that an on-board operator is necessary, showing operators standing-up to get a better view (direct line-of-sight) of the dredge pump during operation.⁷² Modifying the Truxor or SenwaTec vehicles to include remote control would eliminate the possibility of the operator observing the dredge pump with a direct line-of-sight. Petitioner does not address this problem and merely states that adding remote control would be within the ability of a POSITA.⁷³ However, even if a POSITA would think to modify either Truxor or SenwaTec with remote control, any alleged combination would still fail to describe a wireless remote control configured to control a flow of liquid manure, as recited in the allowed claims,

⁷¹ Paper 34, 20, 21, 23, 24.

⁷² EX1012, 2.

⁷³ Paper 34, 23-24.

since none of the references teach or suggest use of the Truxor and SenwaTec vehicles in manure pumping/agitation applications.

VIII. GROUNDS 4 and 5: CLAIMS 1-40 ARE NOT OBVIOUS BASED ON PUCK IN VIEW OF BRYHAM OR IN FURTHER VIEW OF BENNETT-II

A. A POSITA Would Not Have Been Motivated to Combine These References With a Reasonable Expectation of Success

A POSITA would not have realistically considered adding Bryham's wheels to Puck because they would not have found such a combination feasible for manure lagoon environments.⁷⁴ Petitioner's combination of Puck and Bryham is based on a false premise – that a POSITA concerned about exposing Puck's trailer to highly corrosive manure lagoons would have been motivated to ditch the Puck's trailer in favor of Bryham's powered wheels.⁷⁵ The opposite is true. It is undisputed that Puck discloses a system where the trailer is designed to remain high and dry when Puck's boat is being launched and retrieved.⁷⁶ Puck's trailer is not designed to be submersed in manure lagoons, so the very problem underlying Petitioner's motivation to combine argument – corrosion of Puck's trailer – was not actually a problem that needed solving.⁷⁷ Moreover, the last thing a POSITA would do is mount powered wheels on

⁷⁴ EX2094, ¶¶243-252.

⁷⁵ EX1004, ¶¶332-342.

⁷⁶ EX2094, ¶¶235-241.

⁷⁷ EX2094, ¶¶235-241.

Puck's boat (where they would be submerged in corrosive liquid manure for hours at a time) if they were concerned about exposing Puck's trailer (with its unpowered wheels) to corrosive manure lagoon environments.⁷⁸ This is consistent with other record evidence showing that POSITAs did not find it obvious to add powered ground engaging propulsion structures to manure agitation boats prior to Nuhn's invention and were skeptical of doing so.⁷⁹ In particular, industry veterans had concerns that ground engaging propulsion structures (e.g., wheels powered by hydraulic motors) would not survive in highly corrosive manure lagoons, that manure would leak into the hydraulic system and motors, rendering them inoperable, and that hydraulic fluid would leak out into the manure lagoon – leading to environmental contamination issues (e.g., prohibiting later use of the manure as fertilizer for crops).⁸⁰

Even setting corrosion aside, a POSITA would have immediately discarded Bryham from consideration due to the instability and tractions problems inherent in its 3-wheeled configuration.⁸¹ Petitioner recognizes this weakness, jettisoning its prior position that Bryham's wheels are simply added to Puck, and now argues that Bryham's wheels would be placed at all four

⁷⁸ EX2094, ¶240.

⁷⁹ EX2094, ¶¶24-30; EX2083, ¶¶53-63.

⁸⁰ EX2083, ¶¶53-63.

⁸¹ EX2094, ¶¶282-291.

corners of the vehicle – an arrangement that is clearly driven by impermissible hindsight.⁸²

B. Claims 1, 17, 39, and 40: The Puck Combinations Would Not Result In “A Power Source Configured to Provide Power to Both the Ground Engaging Propulsion Structure And the Liquid Manure Mover”

Petitioner’s argument that a POSITA would have arrived at the claimed arrangement, where the power source provides power to both the ground engaging propulsion structure and the liquid manure pump, in order to realize better efficiency and cost savings ignores portions of Puck’s disclosure that would have discouraged such an arrangement.⁸³ Puck’s hydraulic system uses linear actuators and a hydraulic pump powered by a 12-Volt electrical system.⁸⁴ Unlike linear actuators in a closed-loop hydraulic system, hydraulic wheel motors require continuous hydraulic fluid flow, and an open-loop hydraulic system. A POSITA would have understood that Puck’s hydraulic system would not have been capable of powering hydraulic wheel motors, such as those disclosed in Bryham.⁸⁵

C. Claims 1, 17, 39, and 40: Bryham’s Wheels Would Not Use the Same Wireless Remote Control Structure As Puck

Puck’s remote control system is only capable of controlling the power

⁸² Compare Paper 1, 80-83 to Paper 34, 29.

⁸³ Paper 34, 25; EX1004, ¶351.

⁸⁴ EX1014, ¶27.

⁸⁵ EX2094, ¶226.

source and valves/linear actuators – not hydraulic wheel motors.⁸⁶ A POSITA would have to modify or replace Puck’s remote-control system to control Bryham’s powered wheels on top of Puck’s other system, which require different control theories.⁸⁷ Petitioner’s expert fails to explain how Puck’s wireless remote-control system could be modified to control Bryham’s wheels and that such a modification would have been routine work for a POSITA.

IX. CONCLUSION

The Board should issue a final written decision upholding the validity of the Challenged Claims.

⁸⁶ EX2094, ¶264.

⁸⁷ EX2094, ¶¶227-228.

Dated: November 12, 2024

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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 5,067 words, inclusive of textboxes, footnotes and headers 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.

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. 42.6(e), I certify that on this 12th day of November, 2024, a true and correct copy of the foregoing **Sur-Reply In Support of Patent Owner's Response** was served by electronic mail on Petitioner's lead and backup counsel at the following addresses:

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