

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BAZOOKA-FARMSTAR, LLC

Petitioner,

- vs. -

NUHN INDUSTRIES LTD.,

Patent Owner.

Case No: IPR2023-01161

U.S. Patent No. 11,358,425

PETITIONER'S OPPOSITION TO THE MOTION TO AMEND
INTER PARTES REVIEW OF U.S. PATENT NO. 11,358,425

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I. INTRODUCTION

In its Motion to Amend, Patent Owner attempts to avoid invalidating prior art by identifying the location of the pump as its ‘hook for patentability.’ Despite Patent Owner’s after-the-fact, litigation-driven arguments, the ’425 Patent provides no basis for why the location of the pump matters. POSAs understood that centrally orienting weighty objects on a floating vehicle enhances marine vehicle stability. EX1109, ¶152. POSAs would have—and did—understand it to be obvious to apply this known technique to prior art floating vehicles to provide the predictable result of enhanced stability while floating. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (holding that “the mere application of a known technique to a piece of prior art ready for the improvement” does not impart patentability).

The prior art shows that this was not a new discovery, but, instead, what POSAs already understood from the finite number of pump placement choices. Prior art amphibious and manure pumping vehicles used pumps centrally arranged “along the underside” of the vehicles long before the filing date of the Asserted Patents. Patent Owner’s motion to amend should be denied.

II. NUHN’S WITHELD PRIOR ART DEMONSTRATES THAT ITS AMENDED CLAIMS ARE UNPATENTABLE

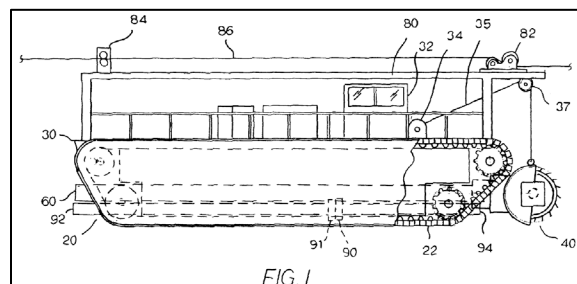
In addition to the prior art in the Petition, Cheramie and Manure Manager both render the claims unpatentable. These references were withheld by the Patent Owner during the prosecution of the ’425 Patent and in its Motion to Amend.

“[U]nder 37 C.F.R. § 42.11 . . . patent owner[s have a] duty to disclose to the Board information that the patent owner is aware of that is material to the patentability of substitute claims[.]” *Amazon.com, Inc. v. Uniloc Luxembourg S.A.*, IPR2017-00948, Paper 34 at 10, n.4 (PTAB Jan. 18, 2019) (precedential). This requires disclosure of primary and secondary references. *VMware, Inc. v. Clouding Corp.*, IPR2014-01292, Paper 23 at 2 (PTAB Apr. 7, 2015). Grounds 1 and 4 below demonstrate that the proposed claims are invalid over Cheramie and Manure Manager (disclosing the “Nuhn Pump”).

Patent Owner was aware of, and withheld, both references. Petitioner relied on Cheramie in its ’425 Patent invalidity contentions in the district court litigation, served on Patent Owner on August 29, 2023. EX1092, 40, 51, 74. Likewise, Petitioner included the Ground 4 combination, with the Nuhn Pump, in its instituted ’708 Patent IPR petition against similar claims. IPR2024-00098, Paper 2 at 108-115.

A. Cheramie

Cheramie describes an amphibious dredging vehicle. EX1087, Abstract.



Id., FIG. 1.

Amphibious Vehicle: Cheramie discloses a floatable vehicle body comprising “sturdy and floatable pontoon[s].” *Id.*, 4:17-18.

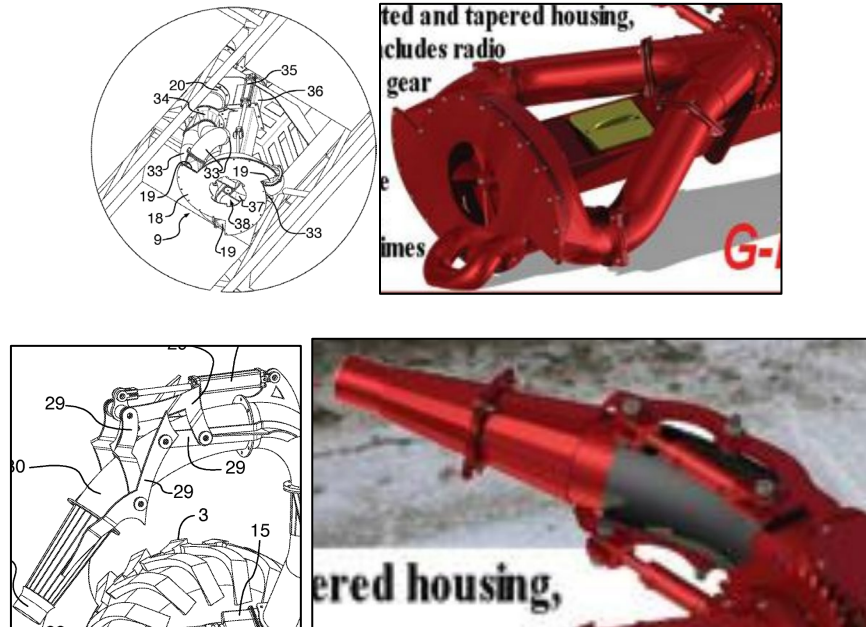
Fluid Pump: Cheramie discloses a dredging pump and a secondary pump that propel the vehicle while floating and are positioned along the underside of the vehicle body, between the vehicle tracks. *Id.*, 3:21-27, FIGS. 1-2. The pumps connect to directable discharges 60, 92 through aluminum pipes with diameters between 4 and 10 inches. *Id.*, 5:24-27, 63-67. Fluid discharged through the directable discharges propels the vehicle while floating. *Id.*, 5:24-30, 6:3-6.

Hydraulic Power: Cheramie teaches a diesel engine that powers a hydraulic pump to pressurize hydraulic fluid in a hydraulic circuit. *Id.*, 4:36-40. The hydraulic fluid powers hydraulic drive motors for the vehicle tracks and hydraulic motors for the pumps. *Id.*, 4:50-55, 5:44-59.

B. Manure Manager

Manure Manager describes Patent Owner’s Pump—the commercial embodiment of the ’758 Patent (EX1029) (incorporated-by-reference into the ’425 Patent). Patent Owner withheld this prior art during prosecution of the ’425 Patent.





EX1001, FIG. 5; EX1088, 27.

III. CLAIM CONSTRUCTION

A. Liquid Manure Pump

The amended claims replace the term “pump” or “fluid pump,” used nearly a hundred times throughout the specification of the ’425 Patent, with the term “liquid manure pump” which is *never* used in the specification of the ’425 Patent.

The PTAB construed “liquid manure pump” in the ’835 Patent institution decision. *See* IPR2024-00004, Paper 12 at 16-18. The PTAB found that Patent Owner failed to identify any structure required to pump liquid manure. Since the parties agreed that liquid manure includes suspended solids, the PTAB “construe[d] the term ‘liquid manure pump’ only to the extent that it requires a pump with a structure that is capable of pumping liquid with suspended solids.” *Id.* at 18. Patent

Owner still has not identified any structure required to pump liquid manure. And its alleged expert could not or would not provide any opinion on that point either. EX1110, 21:9-20; *see also id.*, 16:21-72:8. Thus, “liquid manure pump should be construed consistently with the ’835 Patent institution decision: “***a pump with a structure that is capable of pumping liquid with suspended solids.***” *Id.* Like the inventor of the ’425 Patent, POSAs would have understood a “mixture of water and manure with less than about 5%” is a “liquid with suspended solids.” EX1108, 256:6-15. POSAs understood that these forms of liquid manure have long been pumped with water pumps. EX1109, ¶¶23-30.

B. Fluid Mover

Patent Owner argues that “fluid mover” should be afforded a means-plus-function construction. If the PTAB applies such a construction, the term should be construed as a “***pump, conduit, and nozzle.***” *Id.*, ¶¶31-40.

Many components in the ’425 Patent could ‘move fluid.’ But claims 28 and 40 also require that “at least one of speed and direction of the vehicle is controlled by the fluid mover when the vehicle is floating.” The ’425 Patent describes that “[t]he fluid pump 9 is . . . fluidically connected to all fluid nozzles of the vehicle via the fluid conduits 20-22.” EX1001, 5:42-48. The ’425 Patent also describes that “[t]he flow rate of the fluid pump 9 may also be adjusted to enhance directional and speed control via the plurality of nozzles while floating.” *Id.*, 6:16-18.

Patent Owner alleges that a “fluid mover” should be interpreted as “valves and nozzles.” However, under this construction, the “fluid mover” lacks any structure that could actually move fluid through the valves and nozzles (i.e. a pump). *See Default Proof Credit Sys. v. Home Depot USA, Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005) (“[C]orresponding structure . . . must include all structure that actually performs the recited function.”). Thus, Patent Owner’s construction should be rejected. EX1109, ¶¶39-40.

IV. GROUND 1: AMENDED CLAIMS 22-25, 27-28, AND 33-40 ARE UNPATENTABLE AS OBVIOUS OVER CHERAMIE IN VIEW OF YOON OR CARRIER.

Cheramie in view of the remote-control teachings of Yoon or Carrier would have rendered claims 22-25, 27-28, and 33-40 obvious.

A. Motivation to Combine Cheramie with Yoon or Carrier

The motivations to combine Cheramie with the remote-control teachings of Yoon or Carrier are identical to those explained in the petition and addressed by the PTAB with respect to Truxor. *See* Paper 1, 48-52; Paper 12, 19-21.

Cheramie teaches an amphibious dredging vehicle used in wetlands, such as degraded marshes. EX1087, 2:14-15. A POSA would have understood that such environments could be dangerous for users of the vehicle. EX1109, ¶51. Yoon and Carrier each disclose remote-control amphibious vehicles. *See* EX1011, Summary, ¶[0048]; EX1005, ¶¶[0059], [0064]-[0065]. A POSA would have been motivated to

combine the amphibious dredging device of Cheramie with remote-control technology, like that of Yoon or Carrier, to eliminate the risk of harm to operators of the vehicle. EX1109, ¶¶49-53; EX1011, ¶¶[0013], [0019], [0041].

POSAs were motivated to combine remote-control technology with amphibious vehicles such as Cheramie, Truxor, and SenwaTec before the filing date of the '425 Patent. In 2012, Melnikov recognized the disadvantages of amphibian machines including “the presence of an operator located on the machine itself, which limits the use thereof in conditions dangerous for humans.” EX1025, 4. While Melnikov teaches adding remote controls to Truxor, a POSA would have recognized that teaching applies equally to Cheramie. EX1109, ¶54. A POSA would have been motivated to combine the remote-control technology of Yoon or Carrier with the teachings of Cheramie for the same reasons. *Id.*

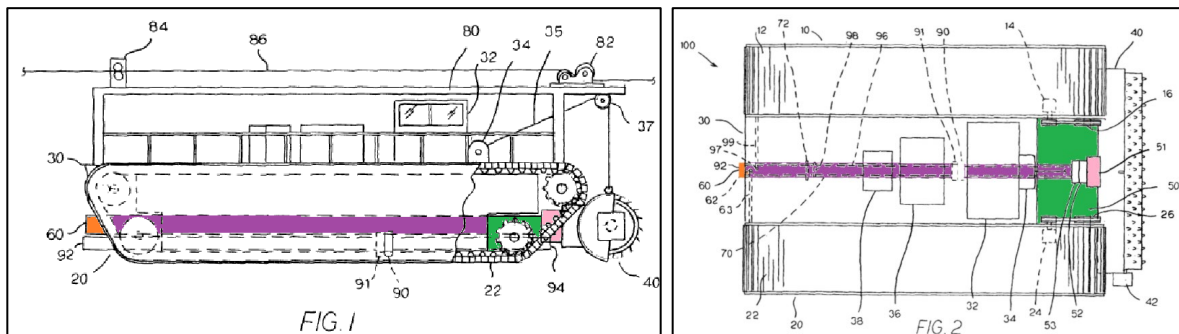
B. Claim 22

Element [22.0]: Cheramie discloses an amphibious vehicle. EX1087, Abstract.

Element [22.1]: Cheramie discloses a base comprising two floatable pontoons. *Id.*, 3:59-63.

Element [22.2]: Cheramie discloses first and second tracks that are powered by a hydraulic motor. *Id.*, 4: 13-16; 48-53.

Element [22.3]: Cheramie discloses a dredge pump 50 (green) with an impeller housing 51 (pink) for pumping degraded marsh material to propel the vehicle. *Id.*, 2:54-59, 4:25-27. The dredge pump 50 (green) and impeller housing 51 (pink) are located along the underside of the vehicle between the tracks and the front and back of the vehicle. *Id.*, FIGS. 1-2. The dredge pump 50 is connected to discharge plumbing 70 (purple), which is connected to a directable discharge 60 (orange) at a rear end of the vehicle. *Id.*, 5:24-27. POSAs would have understood that when floating, fluid would flow through the cutterhead 40 into the impeller housing 51 (pink) and immerse the impeller in the fluid. *Id.*, FIG. 1, 4:24-27; EX1109, ¶60. When the pump 50 (green) is switched on, the impeller would rotate in the impeller housing 51 (pink) to drive the fluid through the discharge plumbing 70 out the directable discharge 60. EX1087, 4:24-27, 5:1-43; EX1109, ¶60.



EX1087, FIGS. 1-2 (annotated).

POSAs would have understood that dredge pumps, such as the dredge pump 50, are capable of pumping liquid manure, as they have long been used for this purpose. EX1109, ¶61 (collecting references).

Element [22.4]: Cheramie teaches a “diesel engine 36 that powers pump 37 that pressurizes hydraulic fluid in a conventional hydraulic circuit 137[.]” EX1087, 4:36-40. The hydraulic circuit 137 powers hydraulic drive motors 14, 24 for the tracks and the hydraulic motor 53 for the dredge pump 50. *Id.*, 4:36-47.

Element [22.5]: Cheramie teaches an amphibious vehicle with tracks that vary the speed and direction of the vehicle on land and water, and a dredge pump that can be used to pump liquid manure. *Id.*, 3:59-4:19, 5:44-59.

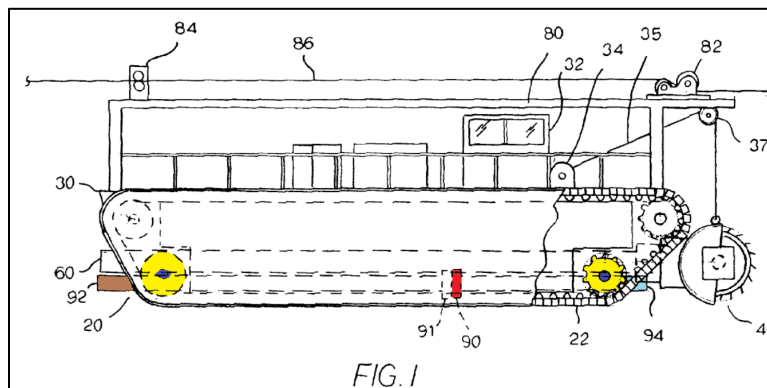
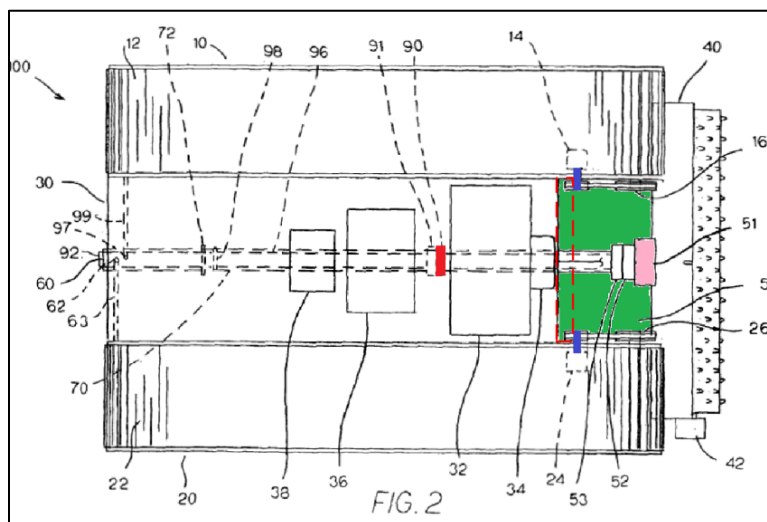
Yoon and Carrier disclose amphibious pumping vehicles enabling operators to control the vehicle and attachments using remote control. *See* EX1011, ¶[0048], EX1005, ¶¶[0059], [0064], [0065]. As explained above, POSAs would have been motivated to implement the remote-control systems of Yoon or Carrier to control the vehicle and attachments of Cheramie from a safe location. *Supra* Section IV.A.

C. Claims 23-25

Cheramie discloses that the dredge pump 50 is connected to “discharge plumbing 70[.]” EX1087, 5:24-27. Cheramie also discloses a “directable-discharge-control means” for “changing and maintaining the aim of the directable discharge 60” to create jets of fluid for steering the vehicle. *Id.*, 5:36-43. POSAs would have understood that the combination of Cheramie and Yoon or Carrier would yield an amphibious vehicle that could be steered by remote control by changing the orientation of the directable-discharge-control means. EX1109, ¶¶73-74.

D. Claim 27

Cheramie depicts sprockets (yellow) attached to axels (blue) to drive tracks. EX1087, FIG. 1. Cheramie also mentions the interchangeability of tracks with wheels. *Id.*, 1:54-58. POSAs substituting the tracks for wheels would have been motivated to attach ground engaging wheels to the axles (blue). EX1109, ¶¶75-76. Substituting the sprockets for wheels at the axles would result in the dredge pump 50 (green) being rearward of the front set of spindles and forward of the rear set of spindles (see red dashed region in annotated FIG. 2, below). *Id.* ¶77.



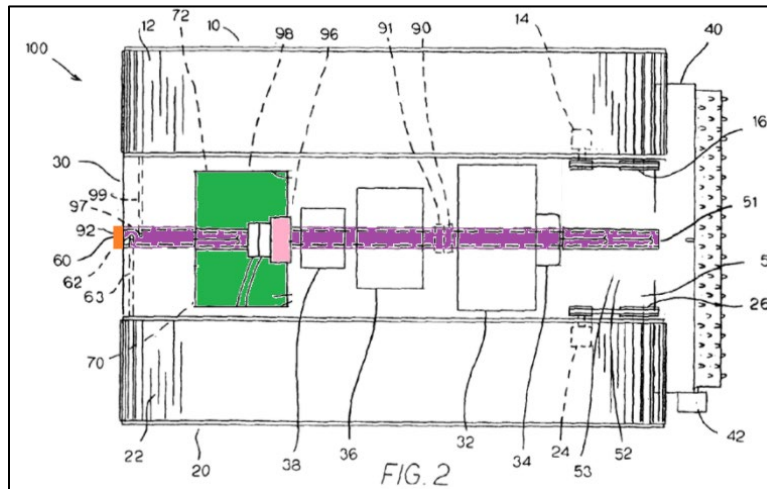
EX1087, FIGS. 1-2 (annotated).

Cheramie also teaches a water pump 90 (red, above) between the axles. Like the dredge pump 50, the water pump 90 (red) is between an intake 94 (turquoise) at the front of the vehicle and used to pump fluid from the intake 94 to the directable discharge 92 (brown). EX1087, 5:44-59. A POSA would have understood that the logical choice for the water pump 90 would be a pump with an impeller because it would be best suited to provide the propulsion functionality described by Cheramie. EX1109, ¶78. POSAs would have understood that such impeller-equipped water pumps are capable of pumping liquid manure. *Id.*

Furthermore, POSAs would have understood that like the water pump 90, the location of the dredge pump 50 between the cutterhead 40 and the directable discharge 60 may be varied without impacting the performance of the dredge pump 50. *Id.*, ¶¶79-80. Thus, a POSA would have understood that the dredge pump 50 could be moved even further rearwardly of the front spindles, which would move the center of gravity towards the center of the vehicle. *Id.*

Specifically, a POSA would have understood that in this configuration, dredged material would enter the cutterhead 40 and into a section of discharge plumbing 70 (purple, below) between cutterhead 40 and impeller housing 51 (pink) of the dredge pump 50 (green). The dredged material would move through the impeller housing 51 (pink) and into another section of discharge plumbing 70

(purple). Finally, the dredged material would be directed out of the directable discharge 60 (orange). EX1109, ¶¶79-80. A Petitioner-modified FIG. 2, illustrating this arrangement of the dredge pump 50 (green) is provided below:



EX1087, FIG. 2 (annotated and modified).

E. Claim 28

While floating, the speed and direction of the vehicle is controlled by discharging fluid from the pump, through discharge plumbing, out the directable discharge. EX1087, 4:66-5:5. POSAs would have been motivated to add a nozzle to the directable discharge to accelerate fluid from the directable discharge and better propel the vehicle, as was commonly done in the marine industry. EX1109, ¶81.

F. Claim 33

Cherame discloses a “powerplant in the form of diesel engine 36 . . . powers pump 37A that pressurizes hydraulic fluid in a conventional hydraulic circuit 137[.]” EX1087, 4:32-38. POSAs would have understood that diesel engines include an

output shaft. EX1004, ¶277. POSAs would have further understood that hydraulic pumps include an input shaft to drive the pump. *Id.* Thus, POSAs would have understood Cheramie discloses a mechanical drive between the diesel engine and hydraulic pump. *Id.*

Cheramie further discloses a “mechanical transmission[] driven . . . by [the] central powerplant . . . driving the dredge pump 50.” EX1087, 5:11-16.

G. Claim 34

Cheramie and Yoon or Carrier render obvious claim 34. *Supra* Section IV.B, [22.5]; EX1029, ¶¶86-87.

H. Claim 35-38

Cheramie discloses a tracked vehicle and discusses the interchangeability of wheels and tracks. EX1087, 1:54-59. It would have been obvious to POSAs to replace the tracks with wheels, with one at each corner of the vehicle, which is the typical arrangement of wheels on a four-sided vehicle. EX1109, ¶88. It would have been obvious to provide each wheel with its own variable speed hydraulic motor to provide enhanced traction, as Cheramie and Carrier teach separate hydraulic motors for each ground engaging element. EX1087, 4:40-47; EX1005, ¶[0045]. POSAs would have understood that hydraulic motors are operable at variable speed. *Id.*

I. Claim 39

Cheramie discloses a directable discharge 60 to propel the vehicle. EX1087, 5:1-5. A POSA would have found it obvious to include a nozzle at the end of the directable discharge. *Supra*, Section IV.E; EX1109, ¶89.

J. Claim 40

Cheramie and Yoon or Carrier render obvious Claim 40. *Supra* Section IV.E.

V. GROUND 2: AMENDED CLAIMS 22-25, 27-28, AND 33-40 ARE UNPATENTABLE AS OBVIOUS OVER SENWATEC IN VIEW OF YOON OR CARRIER.

SenwaTec in view of the remote-control teachings of Yoon or Carrier would have rendered claims 22-25, 27-28, and 33-40 obvious. As explained in the petition and addressed by the PTAB in the institution decision, a POSA would have been motivated to combine SenwaTec with the remote-control teachings of Yoon or Carrier. Paper 1, 62-63; Paper 12, 22-26.

A. Claim 22

Elements [22.0]-[22.2] and [22.4]-[22.5]: SenwaTec in view of Yoon or Carrier render obvious Elements [22.0]-[22.2] and [22.4]-[22.5]. Paper 1, 63-67.

Element [22.3]: SenwaTec discloses a liquid manure pump. EX1081-EX1082 is the full video and translation of EX1028. This video was publicly shown and distributed prior to the filing date of the '425 Patent. EX1094, ¶¶10-13; EX1096, ¶¶7-10. As shown in EX1081 at 8:54-10:18, the Amphi-King vehicle pumped

manure from a holding reservoir, which was then applied to agricultural fields. POSAs would have understood that manure—not mud—is commonly applied to agricultural fields as fertilizer, and would therefore have understood the material pumped by the vehicle to be manure. EX1109 ¶93.

Furthermore, EX1083-EX1084 specifically depict and describe the Amphi-King vehicle pumping manure. And while Patent Owner attempts to distinguish between human waste and other types of animal manure based on its method of treatment, Patent Owner’s support for these arguments is based purely on a single *US* EPA document. EX2029, ¶34. Mr. Funk, the operator of the vehicle in EX1081-EX1084, described how the human waste that he pumped in *Germany* using the Amphi-King was *not* artificially processed and included debris such as condoms, tampons, and toilet paper. EX1094, ¶32. Even still, the method of processing human waste versus other animal forms of manure makes no difference. Humans are animals. The term “liquid manure pump” covers a “liquid human manure pump” just as it covers a “liquid cattle manure pump.” Thus, regardless of how the term is construed, SenwaTec includes a liquid manure pump.

SenwaTec discloses a centrifugal pump (EX1012, 1 (“powerful centrifugal pump”)) including a housing and impeller. EX1109, ¶95; EX1094, ¶28; EX1096, ¶12. POSAs would have understood that the location of the pump on the vehicle is a matter of design choice, which is further evidenced by the pump being mounted

on articulating arm configured to change the location of the pump with respect to the vehicle. EX1109, ¶¶96, 102-105; EX1012.

A POSA would have also understood that the pump could be moved by the articulating arm to a position along the underside of the vehicle body. EX1109, ¶97. Mr. Funck testified that he has operated the Amphi-King vehicle to do exactly this. EX1094, ¶33.1. POSAs would have understood that when in this position, the pump would be between the front wheels (*see* dashed red region below).



EX1012, 2 (annotated).

B. Claims 23-25, 28, and 33-40

Claims 23-25, 28, and 33-40 are obvious over SenwaTec in view of Yoon or Carrier. Paper 1, 67-92. It would have been an obvious matter of design choice to use four wheels on the vehicle as opposed to six wheels. EX1109, ¶99. And a POSA would have understood that the pump, conduit, and nozzle of the vehicle would be a ‘fluid mover’ and could control movement of the vehicle while floating. *Id.*, 100.

C. Claim 27

SenwaTec discloses wheels mounted on spindles. EX1012, 2. A POSA would have understood that, to the extent that the articulating arm is not already able to move the pump to such a location, it would be obvious to arrange the pump between the front spindles and the rear spindles, as described in claim 27, or to have configured the articulating arm of SenwaTec to permit the pump to be moved to such a location. EX1109, ¶¶101-105. Positioning the pump in such a central location on the vehicle allows for a more centrally located center of gravity, a primary consideration when designing a floating vehicle. *Id.*, ¶103 Furthermore, a POSA would have understood that positioning the pump in this centralized location would mitigate negative effects on the stability of the vehicle caused by reaction forces generated by the pump. *Id.*, ¶¶ 104-105.

VI. GROUND 3: AMENDED CLAIMS 22-25, 27-28, AND 33-40 ARE UNPATENTABLE AS OBVIOUS OVER TRUXOR IN VIEW OF YOON OR CARRIER.

Truxor in view of the remote-control teachings of Yoon or Carrier would have rendered claims 22-25, 27-28, and 33-40 obvious. As explained in the petition and addressed by the PTAB in the institution decision, a POSA would have been motivated to combine Truxor with the remote-control teachings of Yoon or Carrier. Paper 1, 48-52; Paper 12, 18-21.

A. Claim 22

Elements [22.0]-[22.2] and [22.4]-[22.5]: Truxor in view of Yoon or Carrier would have rendered obvious Elements [22.0]-[22.2] and [22.4]-[22.5]. Paper 1, 52-55.

Element [22.3]: Truxor discloses a pump that is capable of pumping liquid manure. The Doro Pump is a dredging pump capable of pumping “sediment”, “cut off roots”, “stones”, “bits of wood”, and “sand[.]” EX1006, 10. A POSA would have understood that this pump would be capable of pumping liquid with suspended solids and would be properly understood as a liquid manure pump. EX1109, ¶111. Furthermore, POSAs would have understood dredging pumps, like the Doro Pump, were long used to pump manure. *Id.*, ¶112 (collecting references).

A POSA would have understood that the Doro Pump is a centrifugal pump including a housing and impeller. *Id.*, ¶¶109-110. POSAs would have understood that the location of the pump on the vehicle is a matter of design choice, as further evidenced by the pump being mounted to the articulating arm configured to change the location of the pump with respect to the vehicle. *Id.*, ¶113; EX1006, 10.

POSAs would have understood that the pump could be moved by the articulating arm to a position along the underside of the vehicle. EX1109, ¶114. And POSAs would have understood that the mounting point of the articulating arm could be moved rearwardly to permit the pump to be moved rearward of the front of the

vehicle body while arranged along the underside of the vehicle. *Id.* A POSA would have understood that such an arrangement of the pump with respect to the vehicle body would be beneficial for the center of gravity and stability reasons articulated above with respect to Ground 2. *Id.*, ¶¶114-117; *Supra* Section V.C.

B. Claims 23-25, 28, and 33-40

Claims 23-25, 28, and 33-40 are obvious over Truxor in view of Yoon or Carrier. Paper 1, 67-72. A POSA would have understood that the pump, conduit, and nozzle of the vehicle would be a ‘fluid mover’ and could be used to control movement of the vehicle while floating. EX1109, ¶¶118-120.

C. Claim 27

Truxor discloses a vehicle with tracks EX1006, 3. Yoon or Carrier disclose an amphibious vehicle having multiple wheels. EX1011, ¶¶[0033], [0054]; EX1005, ¶[0026]. A POSA would have understood that wheels, as opposed to tracks, do not “result in a difference in function or give unexpected results.” EX1004, ¶283; *Ex parte BN Intell. Props., Inc.*, No. 2022-001188, at 6 (PTAB Jan. 28, 2022). A POSA would have recognized that wheels and tracks can be used interchangeably, and it would have been a matter of design choice to substitute the tracks of Truxor with the wheels of Yoon or Carrier. EX1004, ¶283. It would have been obvious to a POSA to replace the tracks with wheels, with one wheel at each corner of the vehicle, which is the typical arrangement of wheels on a four-sided vehicle. EX1109, ¶121.

A POSA would have understood it to be obvious to arrange the pump between the front and rear spindles, as described in claim 27, or to have configured the articulating arm of Truxor to permit the pump to be moved to such a location. EX1109, ¶¶122-126. As described above, such a location of the pump would provide for a more central location of the center of gravity and would serve to mitigate negative effects on vehicle stability caused by the pump. *Id.*; *Supra* Section V.C.

VII. GROUND 4: AMENDED CLAIMS 22-42 ARE UNPATENTABLE AS OBVIOUS OVER PUCK IN VIEW OF BRYHAM AND MANURE MANAGER.

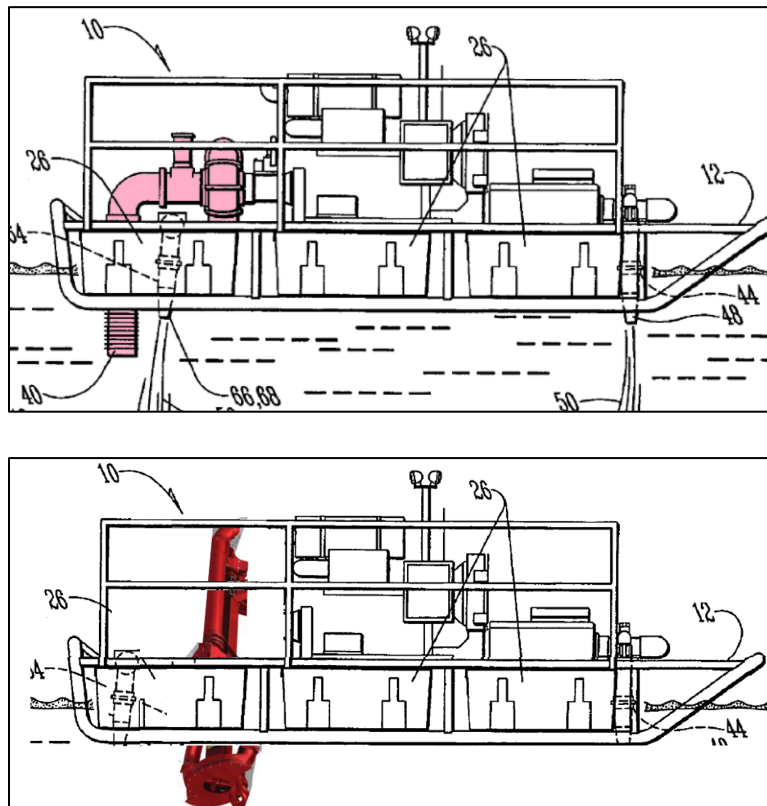
Puck in view of Bryham and Manure Manager would have rendered claims 22-42 obvious. As explained in the petition of the instituted '708 Patent IPR, a POSA would have been motivated to combine Puck, Bryham, and Manure Manager. *See* IPR2024-00098, Paper 1, 108-109; EX1109, ¶¶128-137.

A. Claim 22

Elements [22.0]-[22.2] and [22.4]-[22.5]: Puck in view of Bryham would have rendered obvious Elements [22.0]-[22.2] and [22.4]-[22.5]. Paper 1, 76-79.

Element [22.3]: Puck teaches a vehicle with a pump located forward of the rear end of the vehicle body. A POSA would have been motivated to have substituted the Puck pump with Patent Owner's pump described in Manure Manager, to take advantage of Patent Owner's self-described improved efficiency and manure pumping capabilities of the Nuhn Pump, which includes a housing and immersible

impeller. EX1088, 27; EX1109, ¶¶128-137. As illustrated below, when substituting the Puck pump for the Nuhn Pump, a POSA would have located the Nuhn Pump in the same location as the location in which Puck's pump was arranged, as the vehicle already includes an access point through which the pump could extend into the liquid of the manure lagoon. EX1109, ¶143.



EX1014, FIG. 4; EX1088, 27 (modified and annotated).

A POSA would have also understood that the most logical location for attaching the wheels of Bryham would have been to place one wheel at each corner of the steel frame (EX1014, ¶[0022]) of the Puck vehicle, which is the typical arrangement of wheels on a four sided vehicle. EX1109, ¶144. A POSA would have

understood that when the wheels and pump were arranged in the vehicle in such a configuration, the impeller would be immersed, and the pump would be located between the wheels. *Id.*

B. Claims 23-25, 28-30, and 33-40

It would have been obvious to a POSA to connect the Nuhn Pump on the Puck vehicle in the same manner in which the Puck pump was connected to the transport pipe 42 on the Puck vehicle. *Id.*, ¶145. Therefore, claims 23-26, 28-30, and 33-40 are obvious over Puck in view of Manure Manager. Paper 1, 79-88.

C. Claims 26, 29, 31-32, and 41-42

Puck describes a plurality of fluid nozzles arranged about the body of the vehicle to steer, propel, and agitate. Puck describes how directing fluid from the nozzle (48) to the starboard side of the vehicle steers the vehicle to the port direction. Puck, ¶[0032]. Thus, it would have been obvious to a POSA to have added additional fluid nozzles to each of the left side of the vehicle and the right side of the vehicle to better facilitate steering and maneuverability of the vehicle, not to mention better agitation. EX1109, ¶¶146-148. Such a combination would result in two rear fluid nozzles (already provided as reference numbers 66 and 68), two side fluid nozzles on each side of the vehicle, and a front fluid nozzle (already provided as reference number 48), thereby rendering obvious claims 26, 29, 31, and 41. *Id.* Puck further teaches a remote-control system for opening and closing the valves that direct fluid

to each of the nozzles to propel and steer the vehicle, thereby rendering obvious claims 32 and 42. EX1014, ¶[0033].

D. Claim 27

As noted above, a POSA would have been motivated to have substituted the Puck pump with the Nuhn Pump and would have been motivated to extend the Nuhn Pump into the fluid in a similar arrangement as the Puck’s pump.

A POSA would have also understood that the most logical location for attaching the wheels of Bryham would have been to place one wheel at each corner of the steel frame (EX1014, ¶[0022]) of the Puck vehicle. EX1109, ¶150.

To the extent that the Nuhn Pump would not already be arranged forward of the rear spindles and rearward of the front spindles when arranged within the vehicle of Puck, as explained above, POSA would have considered it obvious to have located the pump in such a way so as to centrally locate the center of gravity and mitigate the effect of any negative forces generated by the operation of the fluid pump. *Id.*, ¶¶151-154. *See supra* Section V.C.

VIII. THE AMENDED CLAIMS LACK SUPPORT UNDER § 112(a)

Patent Owner’s amended claims seek to replace the term “fluid pump for pumping liquid manure” with “liquid manure pump.” This term lacks written description support in the specification.

“What is claimed by the patent application must be the same as what is disclosed in the specification.” *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 736 (2002). Thus, according to 35 U.S.C. § 112(a), “[t]he specification shall contain a written description of the invention . . . in such full, clear, concise, and exact terms as to enable any [POSA] . . . to which it pertains to make and use the same.” *Knowles Elecs. LLC v. Cirrus Logic, Inc.*, 883 F.3d 1358, 1365 (Fed. Cir. 2018). “The test requires an objective inquiry into the four corners of the specification from the perspective of a [POSA].” *Id.*

Knowles Electronics is instructive. *Id.* There, the Federal Circuit affirmed the PTAB’s denial of the patent owner’s motion to amend its claims to include claim language requiring solder pads configured to electrically connect components using a “solder reflow process.” *Id.* at 1369. While the specification described solder pads for electrical connections, the specification did not specifically describe that pads could connect components using a “solder reflow process.” *Id.* at 1366. Because other processes were known for soldering electrical components to pads, the Federal Circuit affirmed the PTAB’s conclusion that the claims lacked written support in the specification. *Id.*

Here, like in *Knowles*, aside from the claims of its litigation driven continuation claims—filed well after Patent Owner’s claimed priority date—the ’425 Patent never describes what a “liquid manure pump” is. Patent Owner argues,

without support, that a “fluid pump” is different from a “liquid manure pump” attempting to create claims that are malleable and only cover “*“a pump that pumps liquid manure”* rather than simply a pump that might be able to pump liquid manure[.]” IPR2024-00004, Paper 9 at 34. But the disclosed pump is only generically described as a “pump” or a “fluid pump” used for “pumping fluid from rivers, ponds, [and] lakes” in addition to liquid manure. EX1029, 4:7-8 (incorporated-by-reference into the ’425 Patent). The Specification does not structurally differentiate a “liquid manure pump” from any standard “fluid pump.” Even Patent Owner’s alleged expert cannot identify the structure of a liquid manure pump. EX1110, 21:9-20; *see also id.*, 16:21-72:8. At the time of the invention, there were numerous types of pumps—including conventional irrigation pumps or conventional water pumps—that were used to pump liquid manure. EX1109, ¶157. Thus, to the extent that “liquid manure pump” is understood to mean anything other than “a fluid pump” the claims are invalid under 35 U.S.C. § 112(a) as failing to sufficiently describe the claimed invention.

IX. CONCLUSION

For at least the reasons stated above, Petitioner asks that the PTAB deny Patent Owner’s motion to amend.

Respectfully submitted,

MERCHANT & GOULD P.C.

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/Thomas J. Leach/
Thomas J. Leach
Registration No. 53,188
Robert A. Kalinsky
Registration No. 50,471
Michael A. Erbele
(pro hac vice)
Taylor R. Stemler
Registration No. 79,777
MERCHANT & GOULD P.C.
150 South Fifth Street, Suite 2200
Minneapolis, MN 55402
TLeach@merchantgould.com
RKalinsky@merchantgould.com
MErbele@merchantgould.com
TStemler@merchantgould.com

Jeffrey D. Blake
Registration No. 58,884
MERCHANT & GOULD P.C.
191 Peachtree Street NE, Suite 3800
Atlanta, GA 30303
JBlake@merchantgould.com

(Trial No. IPR2023-01161)

ATTORNEYS FOR PETITIONER

CERTIFICATION OF SERVICE

The undersigned certifies, in accordance with 37 C.F.R. § 42.6(e), that service was made on Counsel for Patent Owner as detailed below.

Date of service: June 27, 2024

Manner of service: Electronic mail addressed to:
bluchsinger@harnessip.com
syackey@harnessip.com
mcutler@harnessip.com

Documents served: Petitioner's Opposition to the Motion to Amend
Inter Partes Review of U.S. Patent No. 11,358,425

Persons served: James B. Luchsinger
HARNESS, DICKY & PIERCE P.L.C.
5445 Corporate Dr., Suite 200
Troy, MI 48098
Phone: 248-641-1600
Fax: 248-641-0270
bluchsinger@harnessip.com

Scott E. Yackey
HARNESS, DICKY & PIERCE, P.L.C.
2801 Network Blvd., Suite 600
Frisco, TX 75034
syackey@harnessip.com

Matthew L. Cutler
HARNESS, DICKY & PIERCE, P.L.C.
7700 Bonhomme, Suite 400
Clayton, MO 63105
mcutler@harnessip.com

/Thomas J. Leach/
Thomas J. Leach, Reg. No. 53,188