



BAZOOKA-FARMSTAR, LLC (PETITIONER)
v. NUHN INDUSTRIES LTD. (PATENT OWNER)

Case No. IPR2024-00004

U.S. Patent No. 11,491,835

**PATENT OWNER'S REVISED MOTION TO AMEND
DEMONSTRATIVES**

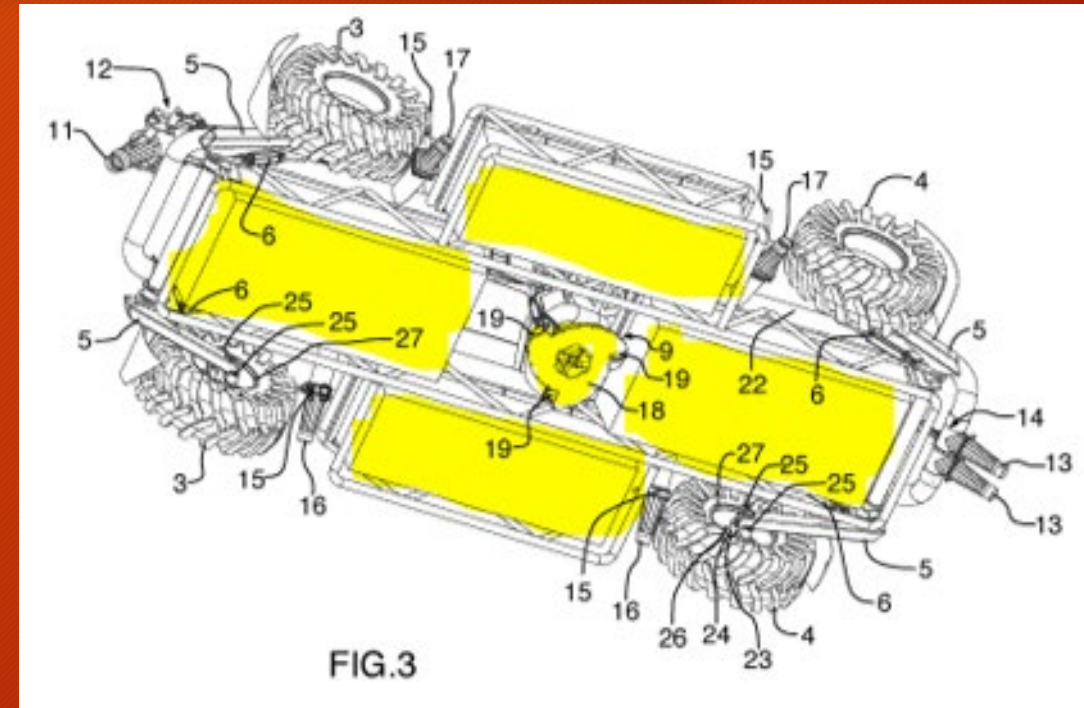
February 13, 2025



Substitute Claims 41-80 Recite a Novel and Non-Obvious Location for the Submersible Manure Pump

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Further, when viewed without hindsight, the teachings of these four prior art references plainly point to a different configuration, where the pump is positioned at the far end of a pivoting boom-arm. EX2106, ¶¶141-151. The Puck Combination fails to teach the claimed configuration where the liquid manure pump: (i) has a substantially vertical drive shaft and a constant angular orientation, (ii) has a pumping housing and impeller that are positioned along / mounted to the underside of the floatable vehicle body, and (iii) submerged components/portions of the vehicle positioned to the right, left, front, and rear of the pump housing, as required by Claims 41, 57, 79, and 80.



EX2106, ¶73; EX1001, Fig. 3, p. 5.

Paper 50, p. 1.

Substitute Claims 41-80 Recite a Novel and Non-Obvious Location for the Submersible Manure Pump

(i) the liquid manure pump has a substantially vertical drive shaft and a constant angular orientation

Substitute Claim 41	Substitute Claim 57	Substitute Claim 79	Substitute Claim 80
[II] the immersible liquid manure pump of the liquid manure mover including a substantially vertical drive shaft powering an impeller that is positioned in a pump housing ... [IV] and has a constant angular orientation relative to the floatable vehicle body;	[II] the immersible liquid manure pump of the liquid manure mover including a substantially vertical drive shaft powering an impeller that is positioned in a pump housing ... [IV] and has a constant angular orientation relative to the floatable vehicle body	[II] the immersible liquid manure pump of the liquid manure mover including a pump housing and an impeller that is driven by a substantially vertical drive shaft ... [IV] and has a constant angular orientation relative to the floatable vehicle body	[II] the immersible liquid manure pump of the liquid manure mover including a drive shaft powering an impeller that is positioned in a pump housing ..., where the drive shaft is substantially vertical [IV] and has a constant angular orientation relative to the floatable vehicle body

EX2106, ¶102.

Substitute Claims 41-80 Recite a Novel and Non-Obvious Location for the Submersible Manure Pump

(ii) the liquid manure pump has a pumping housing and impeller that are positioned along / mounted to the underside of the floatable vehicle body

Substitute Claim 41	Substitute Claim 57	Substitute Claim 79	Substitute Claim 80
[V] <u>the pump housing and the impeller of the immersible liquid manure pump are positioned along</u> the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body	[V] where <u>the pump housing and the impeller are positioned along</u> the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body	[V] where <u>the pump housing is mounted to</u> the underside of the floatable vehicle body [VI] <u>in a space collectively defined between the four ground engaging wheels</u> such that the pump housing is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body	[V] <u>the pump housing is mounted to</u> the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body

EX2106, ¶102.

Substitute Claims 41-80 Recite a Novel and Non-Obvious Location for the Submersible Manure Pump

(iii) submerged components/portions of the vehicle positioned to the right, left, front, and rear of the pump housing

Substitute Claim 41	Substitute Claim 57	Substitute Claim 79	Substitute Claim 80
[VII] wherein <u>components of the vehicle</u> that are submerged when the vehicle is floating are spaced from and positioned to <u>each side</u> of the pump housing and are spaced from and positioned <u>directly forward</u> of and <u>directly rearward</u> of the pump housing <u>along the longitudinal centerline</u> of the floatable vehicle body to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.	[VII] wherein <u>portions of the vehicle</u> that are submerged when the vehicle is floating are spaced from and positioned to the <u>right and left</u> of the pump housing and are spaced from and positioned <u>forward</u> of and <u>rearward</u> of the pump housing <u>along the longitudinal centerline</u> of the floatable vehicle body to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.	[VII] wherein <u>portions of the vehicle</u> that are submerged when the vehicle is floating are spaced from and positioned to <u>each side</u> of the pump housing and are spaced from and positioned <u>directly forward</u> of and <u>directly rearward</u> of the pump housing to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.	[VII] wherein <u>components of the vehicle</u> that are submerged when the vehicle is floating are spaced from and positioned to the <u>right and left</u> of the pump housing and are spaced from and positioned <u>directly forward</u> of and <u>directly rearward</u> of the pump housing to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.

EX2106, ¶102.

Claim Construction

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1. “along the longitudinal centerline” (substitute claims 41 and 57)
2. “liquid manure pump” (substitute claims 41, 57, 79, and 80)

Claim Construction

1. “along the longitudinal centerline” (substitute claims 41 and 57)

Petitioner’s Expert:

13. It is my opinion that the term “along the longitudinal centerline” should be interpreted as “on or next to the longitudinal centerline.” The ’835 Patent analogizes this term with language of approximation: “substantially in the middle of the vehicle.” EX1001, 7:52-54. Furthermore, Merriam-Webster’s dictionary defines the term “along” as “in a line matching the length or direction of.” EX1175, 1. Based on this definition, a POSA would have understood that the term “along” permits positionality “in a line matching the length or direction” of the longitudinal centerline (i.e. a line on or next to the longitudinal centerline). For example, POSAs would have understood the usage of the term “along” as used in the phrase “walking along the river” to have referred to one walking “next to” the river—not necessarily in it. Thus, POSAs would have understood that “along” means “on or next to.”

Patent Owner’s Expert:

41. Dr. Winkel asserts that phrase “along the longitudinal centerline” means “on or next to the longitudinal centerline.” EX1174, ¶13. I disagree with this interpretation because it eviscerates the geometric position claimed. The phrase “or next to” in Dr. Winkel’s construction expands this limitation to cover structure that is positioned to the right or left of the longitudinal centerline. In my opinion, this is contrary to how a POSITA would understand the phrase “along the longitudinal centerline.” A POSITA would understand that the language requiring a submerged component/portion of the vehicle to be “along the longitudinal centerline” to mean that the component/portion of the vehicle is centered between / with respect to the right and left sides of the vehicle. In my opinion, a POSITA would not understand components or portions of the vehicle positioned to the right or left of the longitudinal centerline to be positioned “along the longitudinal centerline” within the meaning of the claims. If a component or portion of the vehicle is to the

EX2106, ¶41.

EX1174, ¶13.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE



Claim Construction

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1. “along the longitudinal centerline” (substitute claims 41 and 57)

Petitioner’s Expert:

13. It is my opinion that the term “along the longitudinal centerline” should be interpreted as “on or next to the longitudinal centerline.” The ‘835 Patent

EX1174, ¶13.

Patent Owner’s Expert:

43. Dr. Winkel’s construction is inconsistent with Petitioner’s own dictionary evidence, which defines “along” as “at a point or points on.” EX1175. The words “or next to” is not part of the definitions found in EX1175.

45. In view of the language in the ‘835 Patent quoted above and the dictionary definition set forth in EX1175, it is my opinion that the proper construction of the claim term “along the longitudinal centerline” is “on the longitudinal centerline.”

EX2106, ¶¶43, 45.

Merriam-Webster [EX1175]:

along 1 of 2 **preposition**

ə-ˈlɒŋ

[Synonyms of along >](#)

- 1 : in a line matching the length or direction of
| walking *along* the road
also : at a point or points on
| a house *along* the river

Claim Construction

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1. “along the longitudinal centerline” (substitute claims 41 and 57)

Patent Owner’s Expert:

45. In view of the language in the ‘835 Patent quoted above and the dictionary definition set forth in EX1175, it is my opinion that the proper construction of the claim term “along the longitudinal centerline” is “on the longitudinal centerline.”

EX2106, ¶¶43, 45.

‘835 Patent:

20 teristics of the vehicle while floating. The center of gravity may be located along the longitudinal centerline of the vehicle. The center of gravity may be located substantially in the middle of the vehicle, for example at an intersection of longitudinal centerline of the vehicle and the transverse centerline of the vehicle. The center of gravity may be located rearward of the transverse centerline of the vehicle. The center of gravity may be located forward of the transverse centerline of the vehicle. Thus the ground engaging

EX1001, col. 4, ln. 20-28.

Claim Construction

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2. “liquid manure pump” (substitute claims 41, 57, 79, and 80)

Patent Owner’s Expert:

49. POSITAs understand that a “liquid manure pump” is a particular type/class of pump that you can go out and buy / select for manure pumping applications. Indeed, references to “manure pumps” are scattered throughout various advertisements and articles in the Manure-Manager publications (EX1112 and EX1113), demonstrating that this is a term known and used by POSITAs in the art to reference to a particular type / class of pumps. Liquid manure pumps differ from ordinary pumps in that the materials and components of a liquid manure pump must be capable of withstanding the highly corrosive environment of liquid manure lagoons and the shear behavior / forces associated with pumping a non-Newtonian fluid. They must also have components and tolerances that will perform in liquid manure pumping applications without failure or clogging.

EX2106, ¶49.

Petitioner’s Expert:

B. “Liquid Manure Pump”

50. Nuhn and Mr. Prairie assert that the institution decision, which preliminarily found that a “liquid manure pump” is a “pump with a structure that is capable of pumping liquid with suspended solids,” overgeneralizes and impermissibly broadens the scope of the “liquid manure pump.” Paper 23, 14. Nuhn asserts that this preliminary finding no longer requires a pump that is capable of pumping liquid manure. *Id.* I disagree; the PTAB was correct.

EX1110, ¶50.



What makes liquid manure different than water?

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Highly Corrosive:



Paper 1,11.

What makes liquid manure different than water?

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Highly Corrosive - Experts Agree

Petitioner's Expert

120. Animal waste is also known to exhibit corrosive characteristics and metal exposed to liquid animal wastes, such as those in manure lagoons, can result in significant material loss. One study reports that as much as several millimeters of material could be lost from a metallic plate in a year's time. EX1049, 5. Other studies describe some metal samples losing the entirety of their metal mass in less than 30 months of exposure to the lagoon surface. EX1050, 8. A POSA would have been motivated to avoid exposing certain types of metal equipment, such as vehicle trailers, to corrosive lagoon liquids.

EX1004, ¶120.

Patent Owner's Expert

144. Moreover as asserted by Petitioner and Dr. Winkel, a POSITA would have understood that liquid manure lagoon is highly corrosive. See EX1004, Winkel Decl. ¶ 120. Dr. Winkel asserts that "[a] POSA would have been motivated to avoid exposing certain types of metal equipment, such as vehicle trailers, to corrosive lagoon liquids." *Id.* He's entirely correct on this point, and for that very reason a POSITA would have never looked to using an amphibious vehicle in a liquid manure lagoon. Thus a POSITA would not have utilized an amphibious vehicle with

EX2029, ¶144.



What makes liquid manure different than water?

13

A Non-Newtonian Fluid With Suspended Solids

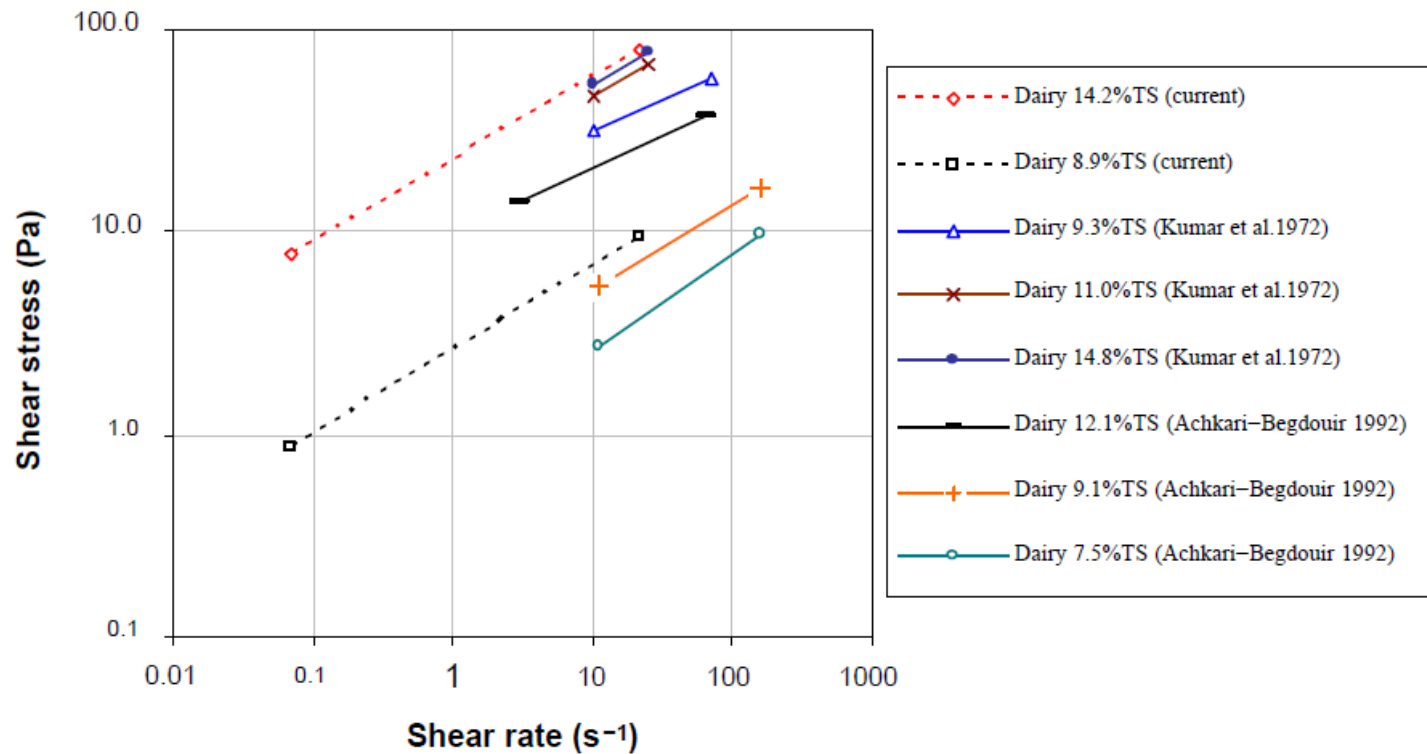


Figure 6. Shear stress – shear rate curves for dairy cattle manure (current study and other published results).

EX2097, 9.

What makes liquid manure different than water?

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A Non-Newtonian Fluid - Experts Agree (at least above 5 %TS)

Petitioner's Expert

109. A POSA would have understood that some higher concentrations of manure exhibit non-Newtonian behaviors, specifically shear-thinning characteristics. See, e.g., EX2097, 8. A POSA would have understood that non-Newtonian behavior begins to manifest at higher solids concentrations, higher than the few percent or less solids that are typically found in liquid manures contained in manure lagoons. For example, in a study involving manure from lactating cows and samples taken from a manure storage tank containing bedding, urine, fresh and old manure, and water, Kumar reports that “[w]hen the slurry was below five percent total solids, it showed Newtonian flow properties, and above six percent it showed non-Newtonian (pseudo-plastic) flow properties.” EX1151, 3. Kumar concludes that

Patent Owner's Expert

particular characteristics of the liquids.” EX1038 at 12 (emphasis added). Dr. Winkel entirely ignores that cattle manure—even at 1 to 2% total solids content—has been found to act as a non-Newtonian fluid. See, e.g., EX2097 at 2, H. Landry et al., *Physical and Rheological Properties of Manure Products*, APPLIED ENGINEERING IN AGRICULTURE, at 278 (2004) (discussing study by Chen (1982) that “included rheological properties for TS ranging from 1% to 14%. Beef cattle slurries were described as non-Newtonian pseudoplastic fluids, the deviation from Newtonian behavior increasing with TS”); *id.* at 2 (“Achkari-Begdouri and Goodrich (1992) studied the rheological properties of Moroccan dairy cattle manure with total solids concentrations ranging from 2.5% to 12% at temperatures between 20°C and 60°C. Their results showed that in the ranges

EX2094, ¶115.

EX1110, ¶109.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE



Claim Construction

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2. “liquid manure pump” (substitute claims 41, 57, 79, and 80)

Patent Owner’s Expert:

49. POSITAs understand that a “liquid manure pump” is a particular type/class of pump that you can go out and buy / select for manure pumping applications. Indeed, references to “manure pumps” are scattered throughout various advertisements and articles in the Manure-Manager publications (EX1112 and EX1113), demonstrating that this is a term known and used by POSITAs in the art to reference to a particular type / class of pumps. Liquid manure pumps differ from ordinary pumps in that the materials and components of a liquid manure pump must be capable of withstanding the highly corrosive environment of liquid manure lagoons and the shear behavior / forces associated with pumping a non-Newtonian fluid. They must also have components and tolerances that will perform in liquid manure pumping applications without failure or clogging.

EX2106, ¶49.



Claim Construction

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2. “liquid manure pump” (substitute claims 41, 57, 79, and 80)

Manure Injection Equipment





HOSE
Snap-tite Drag
4 1/2", 5", 5 1/2", & 6"
6" G&H Feeder
200 & 250 PSI
New 8" Supply Hose!



Bazooka Farmstar Inc.
Manufacturing • Manure Injection Systems • Livestock Feeders • Grain Handling

1-800-775-7448
319- 653-5080
www.bazookafarmstar.com

Cornell Manure Pumps
4x4x14T-14
4NHTB-17.5
6NHTB-17.5
6NHTB-19

Manure-Manager:

Cornell Manure Pumps
4x4x14T-14
4NHTB-17.5
6NHTB-17.5
6NHTB-19

EX1112, 23.



Claim Construction

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2. “liquid manure pump” (substitute claims 41, 57, 79, and 80)

Puck (EX1014):

[0025] Coupled to the power source (36) is a liquid manure pump such as a slurry pump (38). In the preferred embodiment, the slurry pump (38) is a Cornell Redi-Prime centrifugal pump capable of handling both solid and liquid material. The slurry pump (38) is preferably designed to move between one thousand and twenty-four thousand liters of material per minute, more preferably between eight thousand and twenty thousand liters of material per minute, and most preferably about sixteen thousand liters of material per minute.

EX1014, ¶0025.

Claim Construction

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2. “liquid manure pump” (substitute claims 41, 57, 79, and 80)

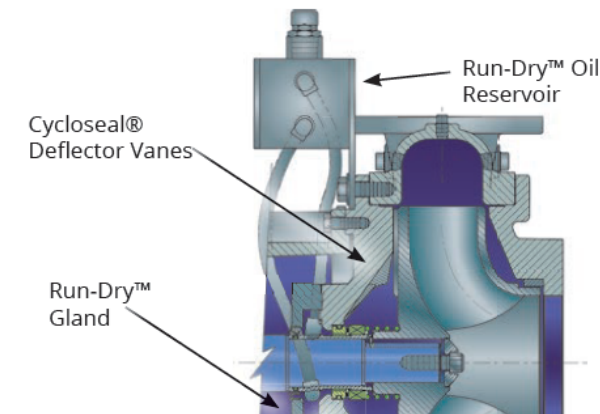
Cornell Redi-Prime:

MARKET AND PRODUCT LINE



CYCLOSEAL®

Cornell's Cycloseal® design has proven itself in the toughest applications from manure slurry to starch recovery to sewer bypass and mining applications - in some cases more than tripling the normally expected mechanical seal life.



EX1143, 7.

EX1143, 8.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE



Evidence of a liquid manure pump?

Patent Owner's Expert:

83. Because there are no bright-line rules, a POSITA would look at the following pieces of evidence to understand if a pump is a “liquid manure pump” (i.e., a “pump that pumps liquid manure” or a “pump with a structure that is capable of pumping liquid manure with suspended solids”):

- (1) was the pump designed to pump liquid manure;
- (2) was the pump marketed as a liquid manure pump;
- (3) has the pump been tested and validated (i.e., proven) for liquid manure pumping applications; and
- (4) does the pump have structure that would become clogged and/or damaged by pumping liquid manure.

EX2094, ¶83.

Substitute Claims 41-80 Recite a Novel and Non-Obvious Location for the Submersible Manure Pump

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(i) the liquid manure pump has a substantially vertical drive shaft and a constant angular orientation

Substitute Claim 41	Substitute Claim 57	Substitute Claim 79	Substitute Claim 80
[II] the immersible liquid manure pump of the liquid manure mover including a substantially vertical drive shaft powering an impeller that is positioned in a pump housing ... [IV] and has a constant angular orientation relative to the floatable vehicle body;	[II] the immersible liquid manure pump of the liquid manure mover including a substantially vertical drive shaft powering an impeller that is positioned in a pump housing ... [IV] and has a constant angular orientation relative to the floatable vehicle body	[II] the immersible liquid manure pump of the liquid manure mover including a pump housing and an impeller that is driven by a substantially vertical drive shaft ... [IV] and has a constant angular orientation relative to the floatable vehicle body	[II] the immersible liquid manure pump of the liquid manure mover including a drive shaft powering an impeller that is positioned in a pump housing ..., where the drive shaft is substantially vertical [IV] and has a constant angular orientation relative to the floatable vehicle body

EX2106, ¶102.

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

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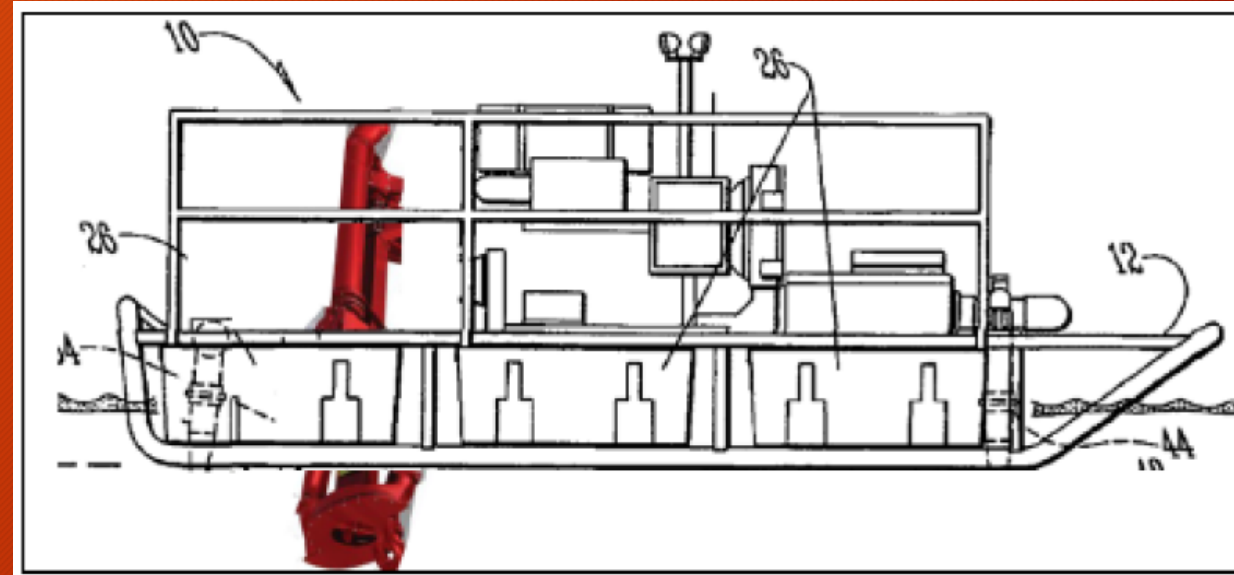


This pump features dual ported and tapered housing, as well as a tapered fan. It includes radio remote control, an oversized gear box with oil cooler, a fully enclosed drive line, a hardened and balanced drive shaft, and a modular design. Experience the fastest load times in the industry.



G-Force Vertical Pit Pump

Petitioner's Expert:



EX1109, ¶143.

EX1088, 27.

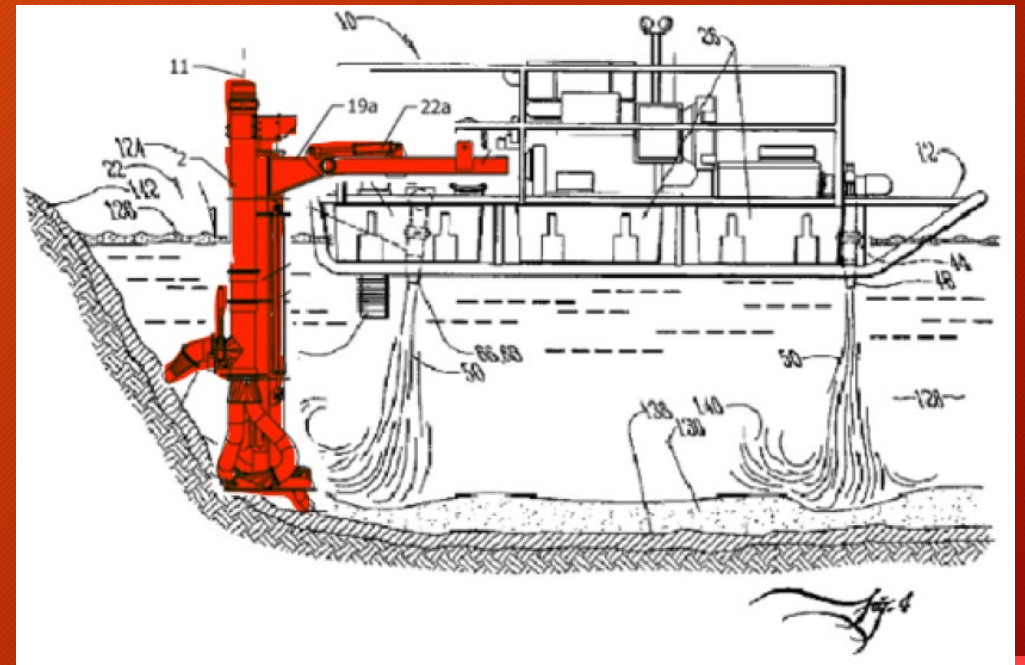
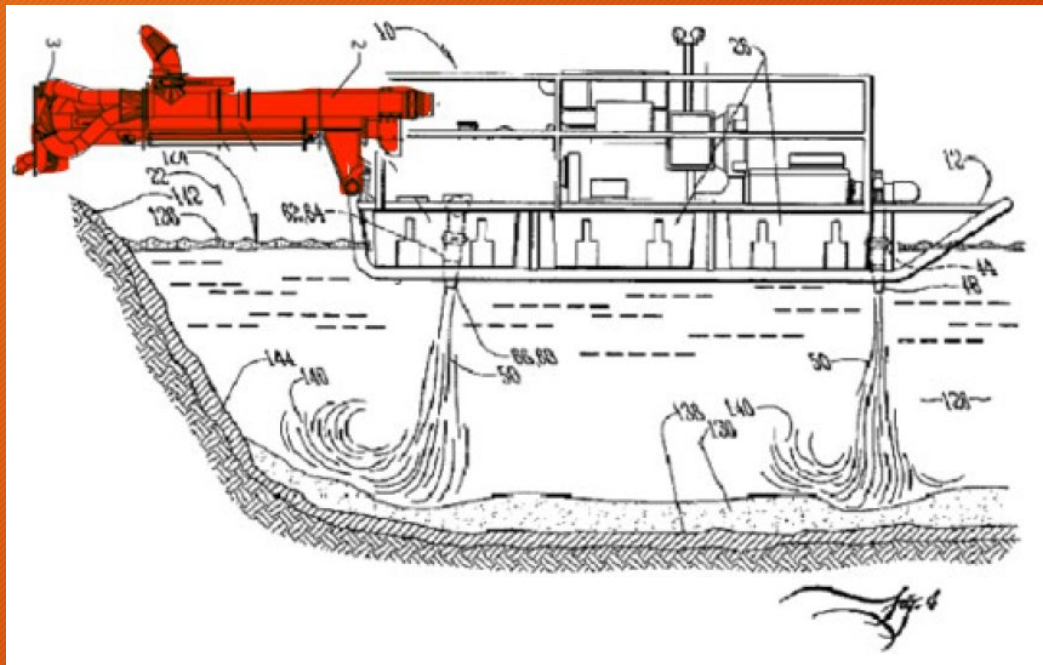
DEMONSTRATIVE EXHIBIT - NOT EVIDENCE



Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

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Patent Owner's Expert:

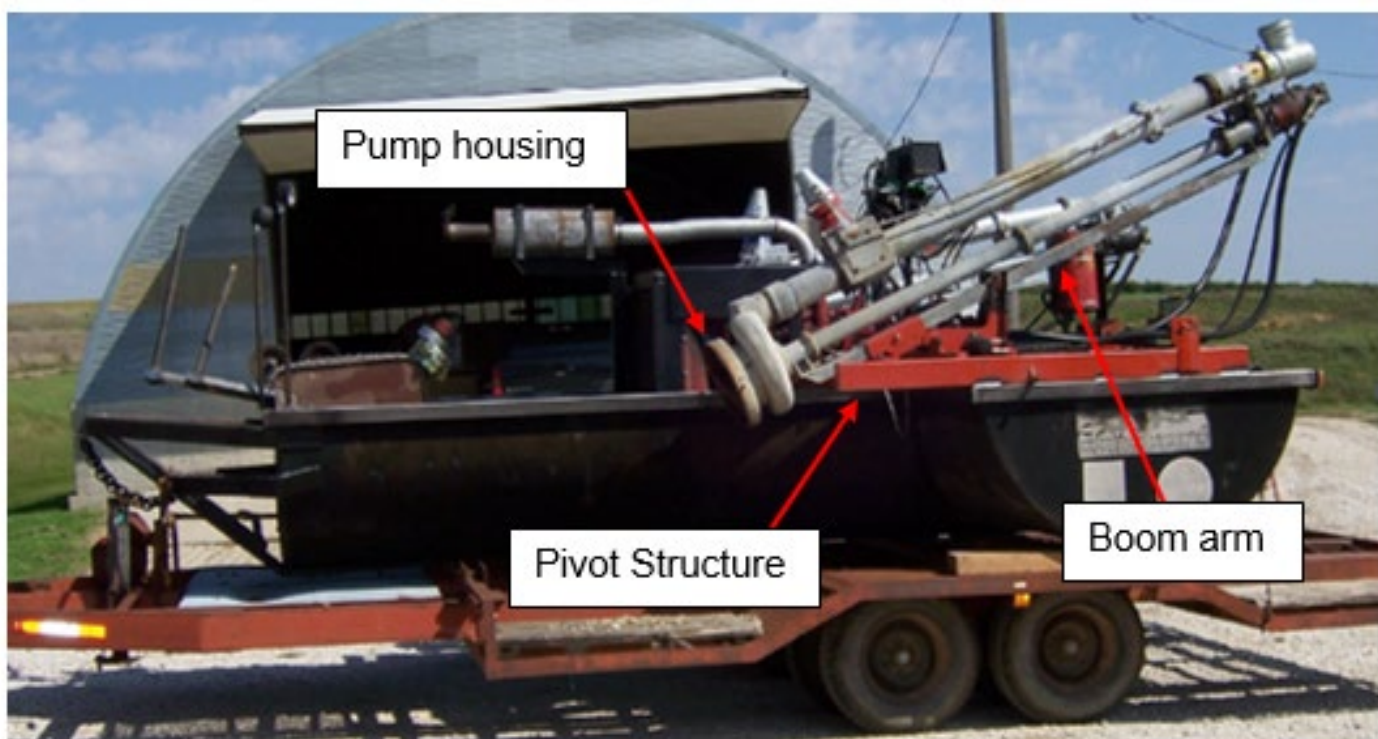


EX2099, ¶¶ 364-365.

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

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Evidence showing what others in the industry (e.g., Sundstrom and Puck) did:



EX1159, 3.



EX1156, 1.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

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Patent Owner's Expert:

147. Both Sundstrom and the Puck Prototype reflect what other POSITAs in the art actually did during the same approximate time period (i.e., same decade) as Nuhn's invention. This evidence leads me to the conclusion that a POSITA would have mounted Nuhn's Pit Pump to Puck's boat with little modification, if they were motivated to make such a combination in the first place, and that they would have retained the long 10ft boom arm, pivot structure, and pivot functionality of Nuhn's Pit Pump because that is entirely consistent with what Sundstrom and Puck actually did.

148. On the other hand, this record evidence does not support Petitioner's combination, which does away with the pivot structure and pivot functionality of Nuhn's Pit Pump, and either

EX2106, ¶¶147-148.

Substitute Claims 41-80 Recite a Novel and Non-Obvious Location for the Submersible Manure Pump

(ii) the liquid manure pump has a pumping housing and impeller that are positioned along / mounted to the underside of the floatable vehicle body

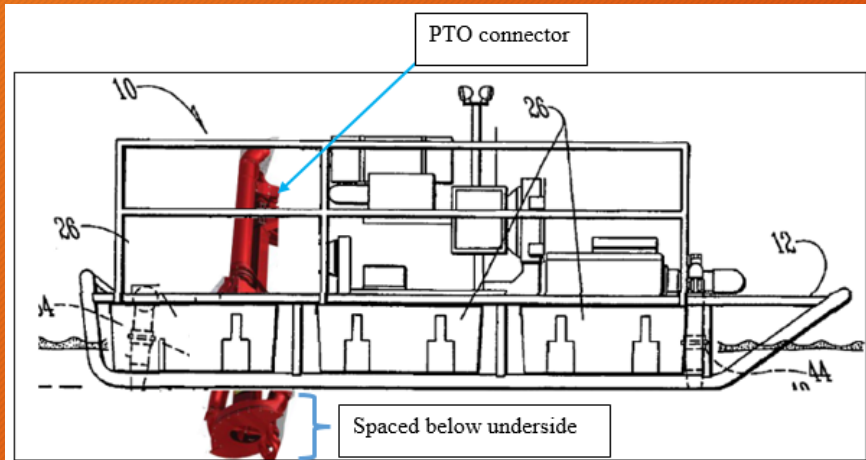
Substitute Claim 41	Substitute Claim 57	Substitute Claim 79	Substitute Claim 80
[V] <u>the pump housing and the impeller of the immersible liquid manure pump are positioned along</u> the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body	[V] where <u>the pump housing and the impeller are positioned along</u> the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body	[V] where <u>the pump housing is mounted to</u> the underside of the floatable vehicle body [VI] <u>in a space collectively defined between the four ground engaging wheels</u> such that the pump housing is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body	[V] <u>the pump housing is mounted to</u> the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body

EX2106, ¶102.

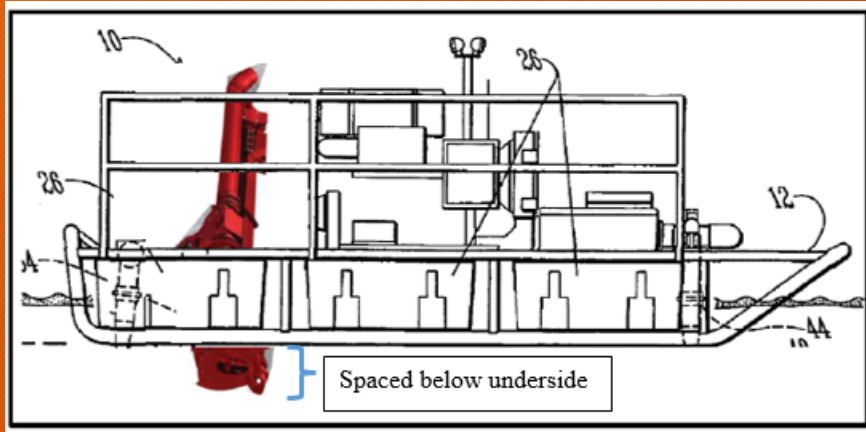
Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

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Petitioner's Expert:



EX1109, ¶143.



EX1174, ¶44.



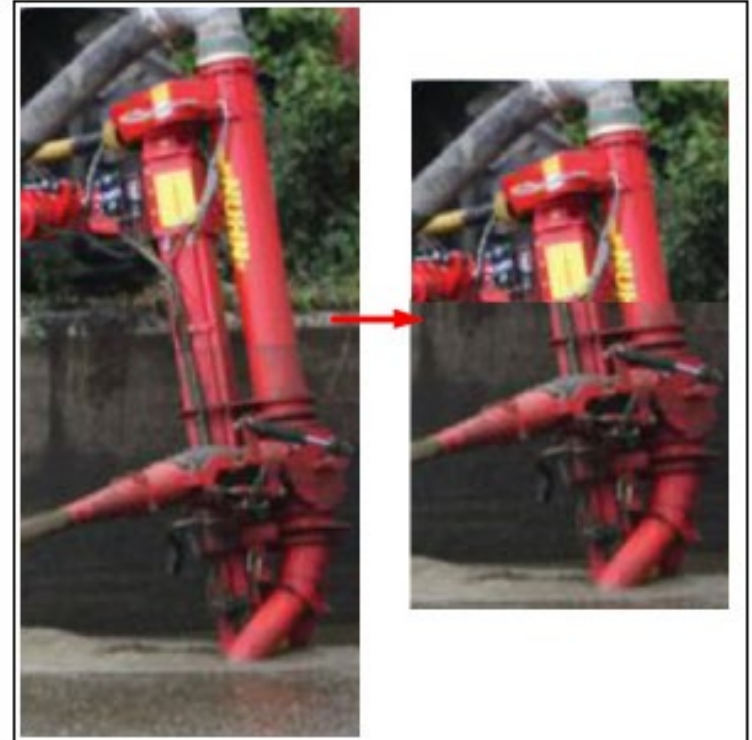
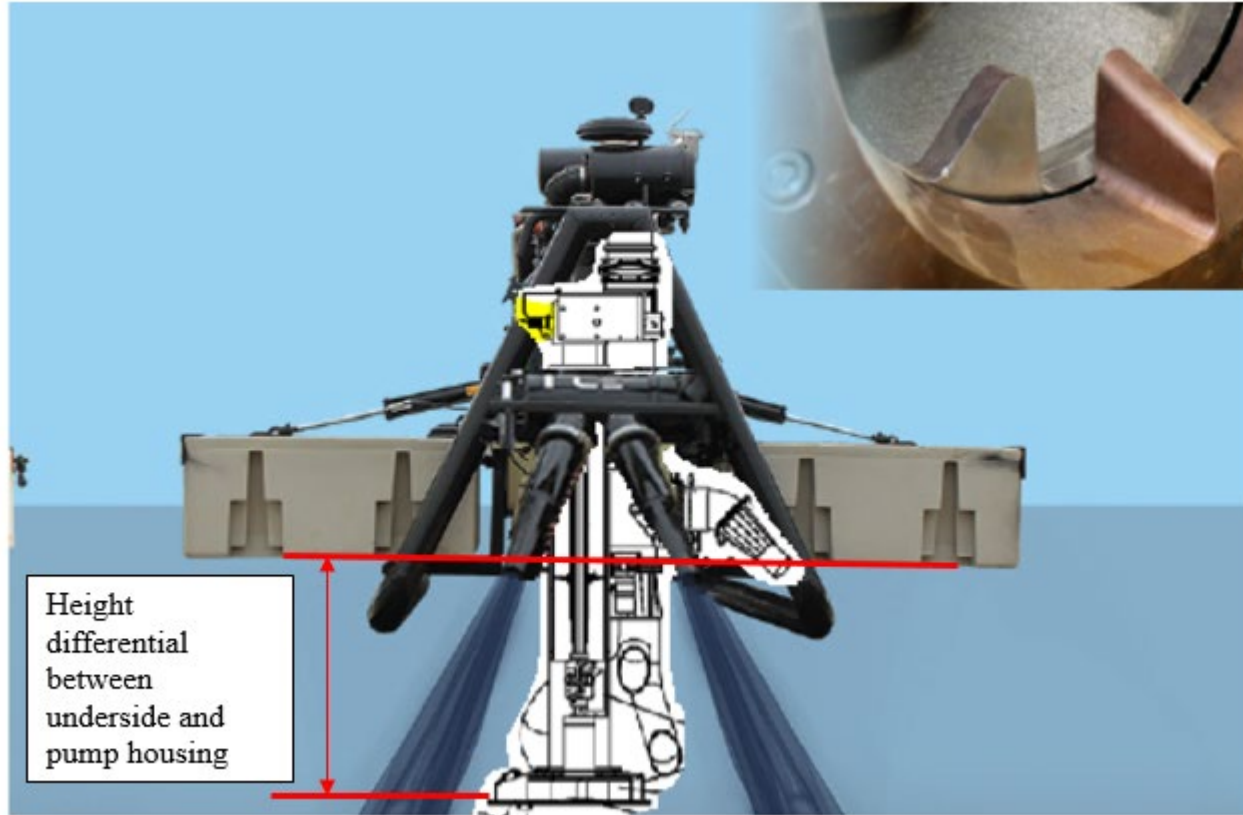
EX1174, ¶58.



Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

27

Patent Owner's Expert:



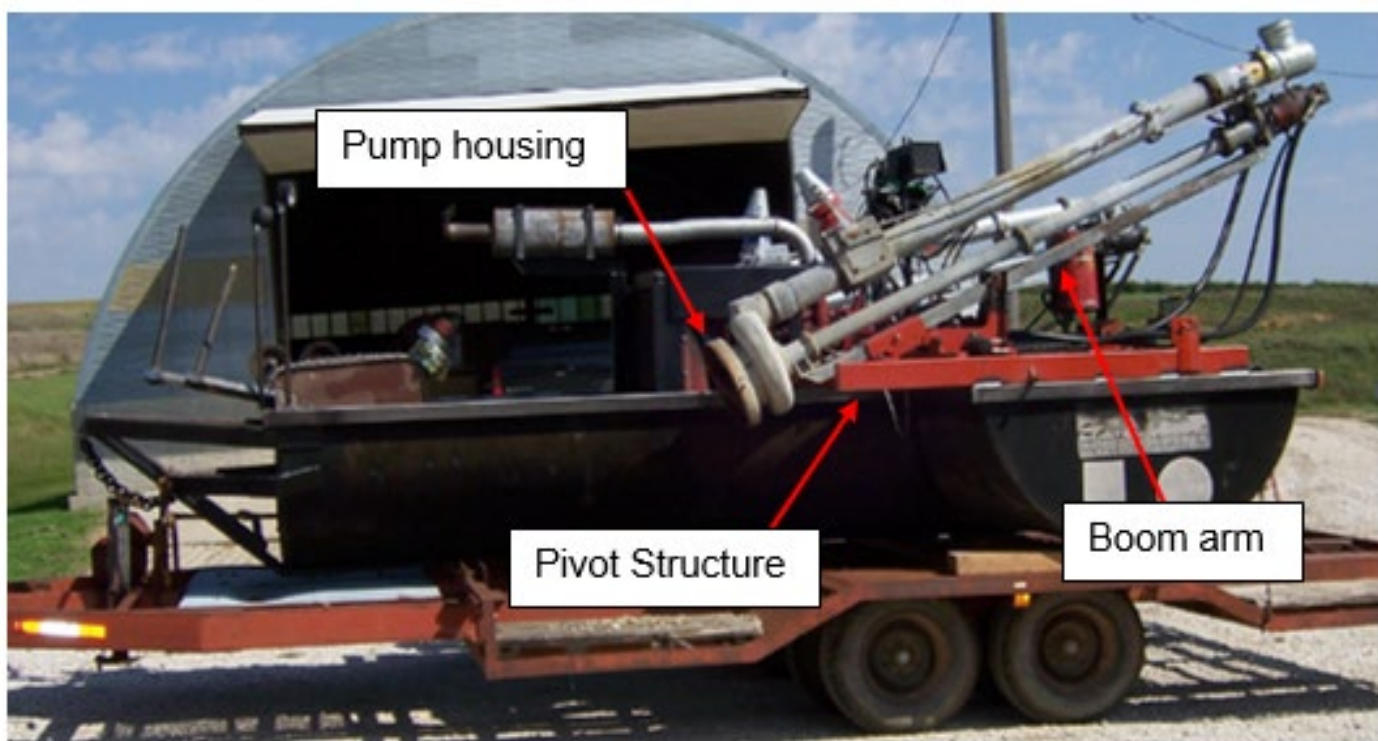
EX1174, ¶58.

EX2106, ¶168.

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

28

Evidence showing what others in the industry (e.g., Sundstrom and Puck) did:



EX1159, 3.



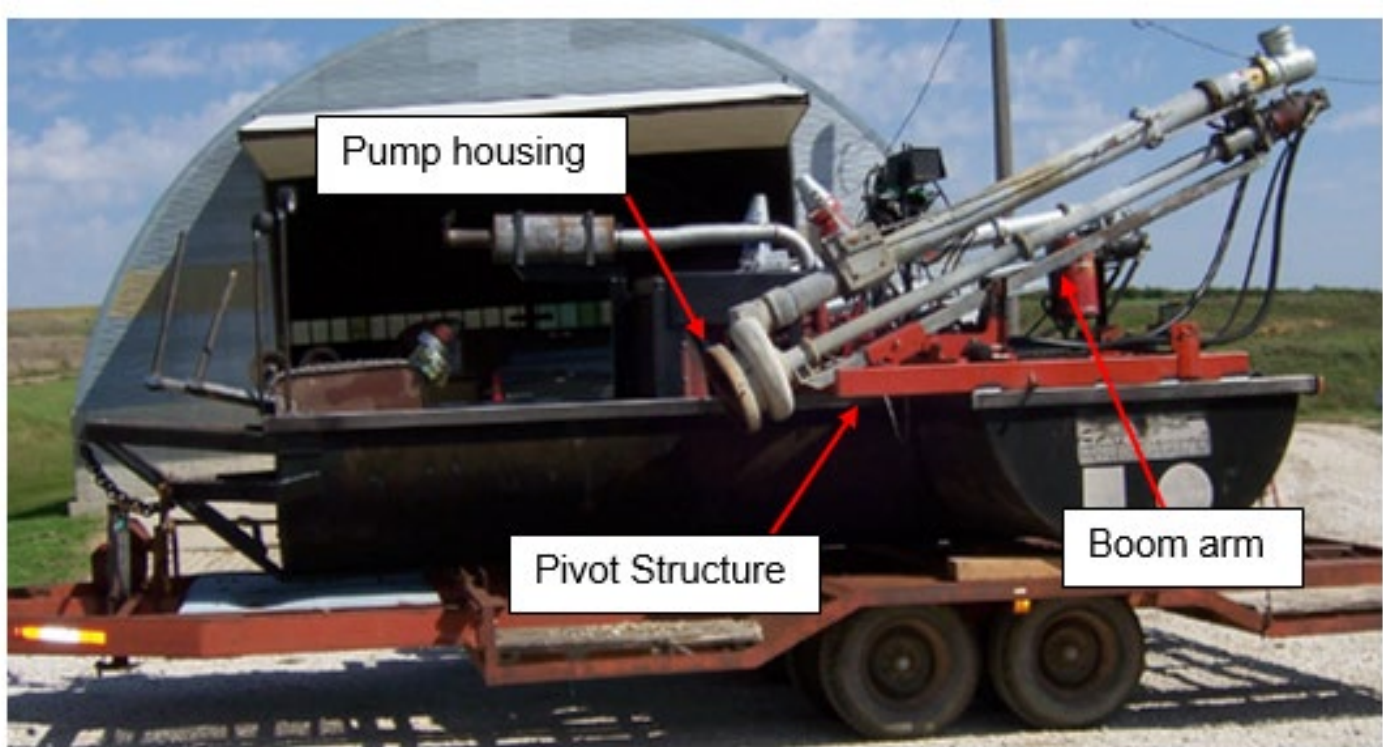
EX1156, 1.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

29

Evidence showing what others in the industry (e.g., Puck) did:



EX1159, 3.



EX1159, 5.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE

Substitute Claims 41-80 Are Not Obvious based on Puck
[EX1014] in view of Bryham [EX1015] and Manure Manager
[EX1088]

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(ii) the pump housing mounted to the underside of the floatable vehicle body

Substitute Claim 41	Substitute Claim 57	Substitute Claim 79	Substitute Claim 80
[V] the pump housing and the impeller of the immersible liquid manure pump are positioned along the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body	[V] where the pump housing and the impeller are positioned along the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body	[V] where the pump housing is mounted to the underside of the floatable vehicle body [VI] in a space collectively defined between the four ground engaging wheels such that the pump housing is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body;	[V] the pump housing is mounted to the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body;

EX2106, ¶102.

Substitute Claims 41-80 Recite a Novel and Non-Obvious Location for the Submersible Manure Pump

(iii) submerged components/portions of the vehicle positioned to the right, left, front, and rear of the pump housing

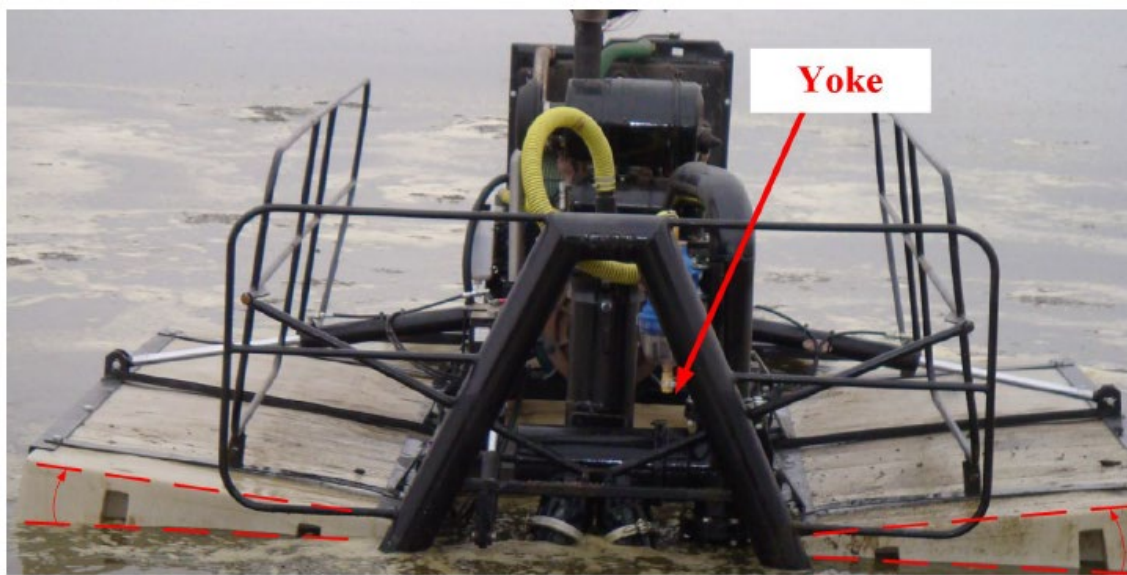
Substitute Claim 41	Substitute Claim 57	Substitute Claim 79	Substitute Claim 80
[VII] wherein <u>components of the vehicle</u> that are submerged when the vehicle is floating are spaced from and positioned to <u>each side</u> of the pump housing and are spaced from and positioned <u>directly forward</u> of and <u>directly rearward</u> of the pump housing <u>along the longitudinal centerline</u> of the floatable vehicle body to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.	[VII] wherein <u>portions of the vehicle</u> that are submerged when the vehicle is floating are spaced from and positioned to the <u>right and left</u> of the pump housing and are spaced from and positioned <u>forward</u> of and <u>rearward</u> of the pump housing <u>along the longitudinal centerline</u> of the floatable vehicle body to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.	[VII] wherein <u>portions of the vehicle</u> that are submerged when the vehicle is floating are spaced from and positioned to <u>each side</u> of the pump housing and are spaced from and positioned <u>directly forward</u> of and <u>directly rearward</u> of the pump housing to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.	[VII] wherein <u>components of the vehicle</u> that are submerged when the vehicle is floating are spaced from and positioned to the <u>right and left</u> of the pump housing and are spaced from and positioned <u>directly forward</u> of and <u>directly rearward</u> of the pump housing to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.

EX2106, ¶102.

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

32

Petitioner's Expert on submerged component / submerged portion of the vehicle:



EX1164, 1 (annotated).

EX1174, ¶85.



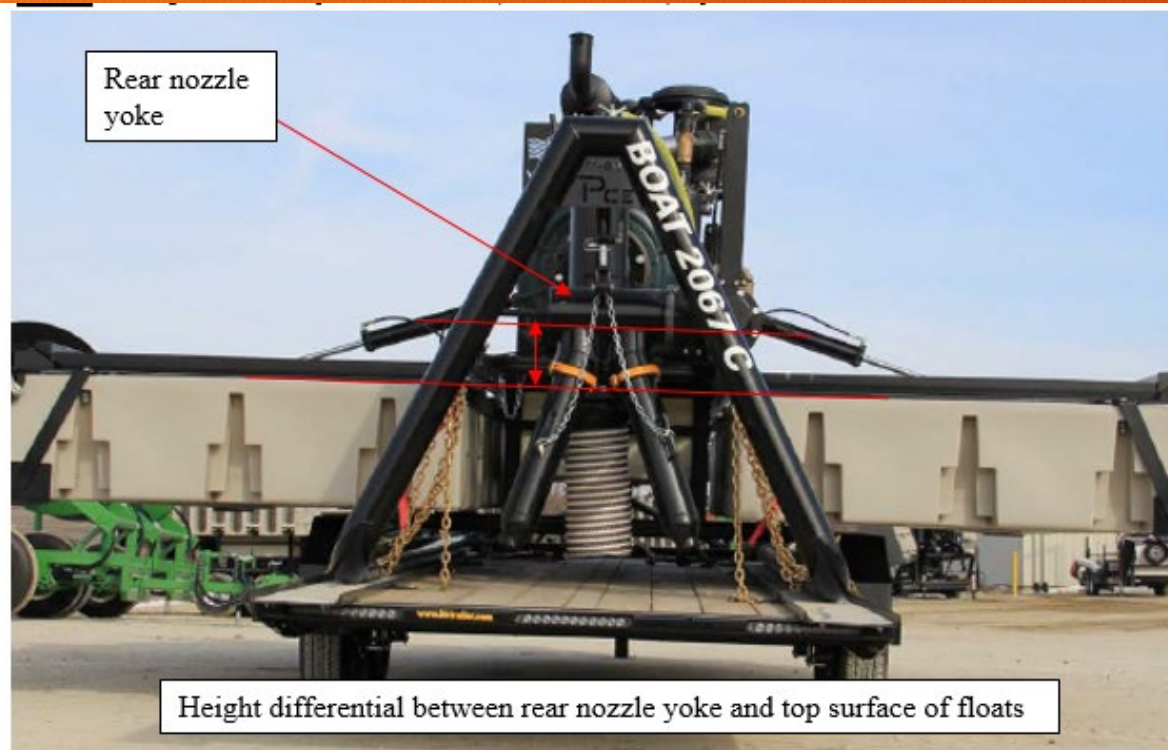
EX1165, 0:38 (annotated).

EX1174, ¶83.

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

33

Puck's Rear Nozzle Yoke is above the top of the floats:



EX1164, p. 18 (annotated).

EX2106, ¶188.



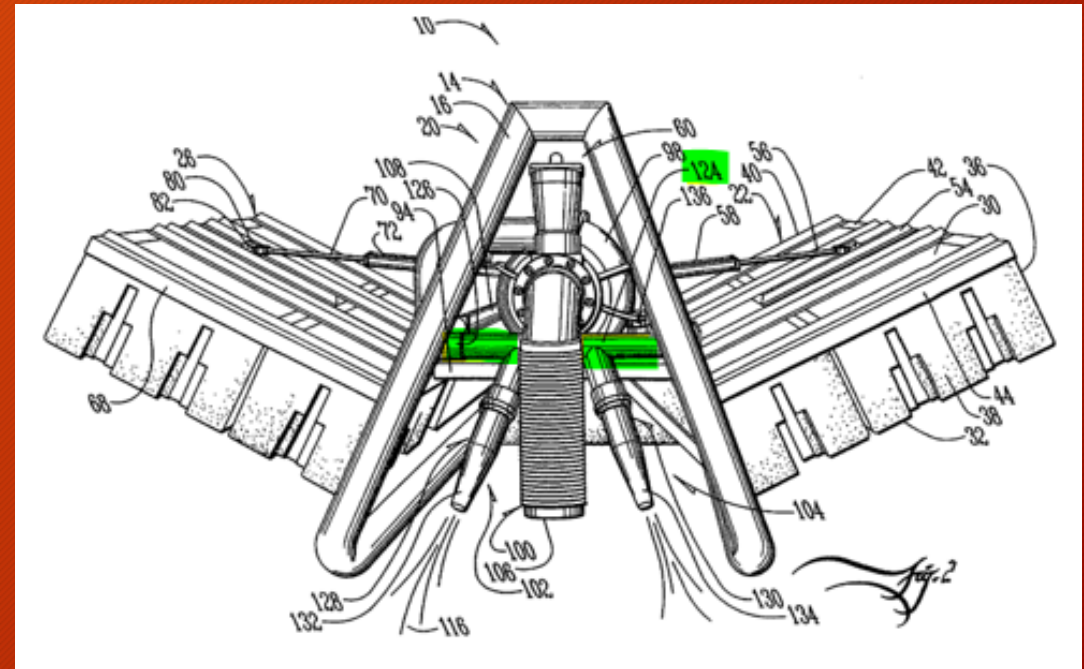
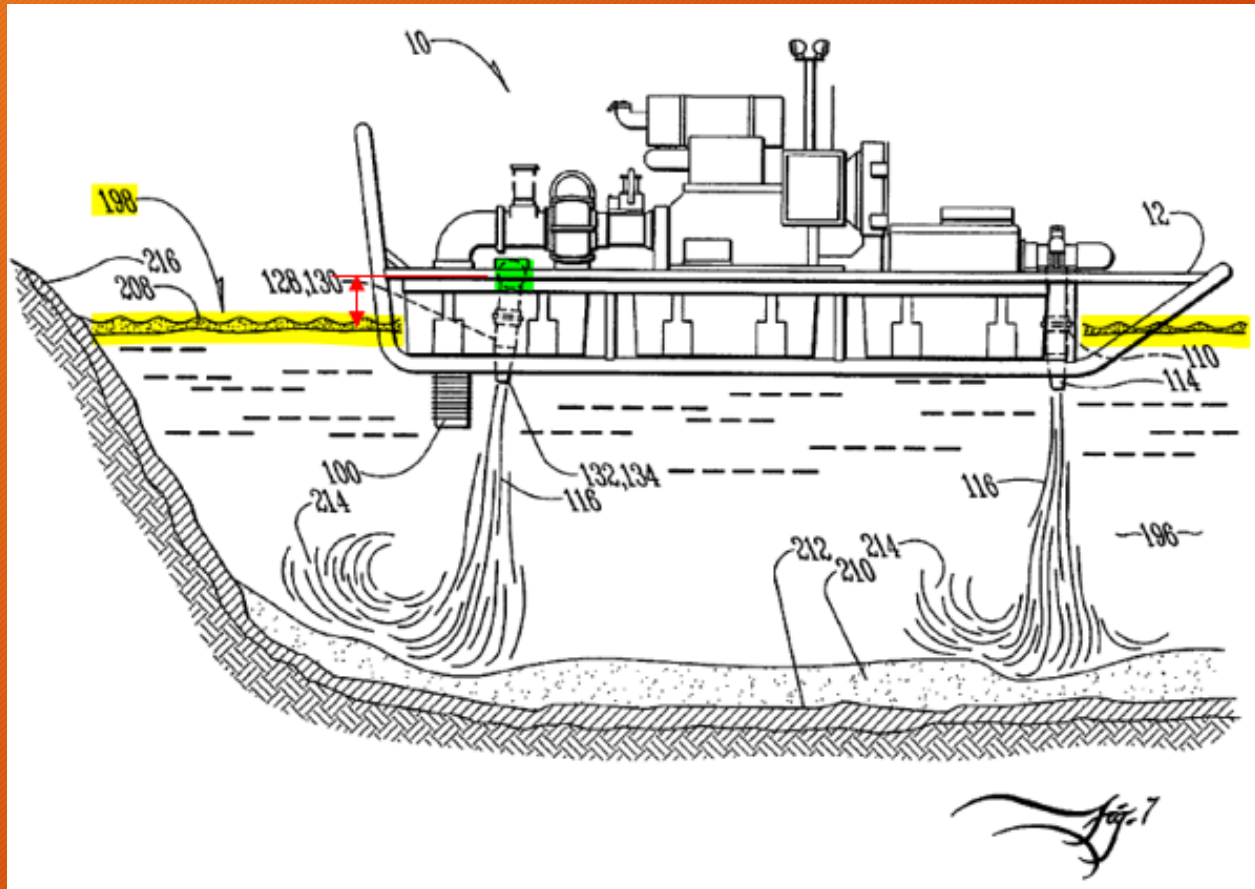
EX1169, p. 2 (annotated).

EX2106, ¶189.

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

34

Puck's patent [EX2107] shows the Rear Nozzle Yoke above the lagoon surface:



EX2107, pp. 3 and 8,
FIGS. 2 and 7.

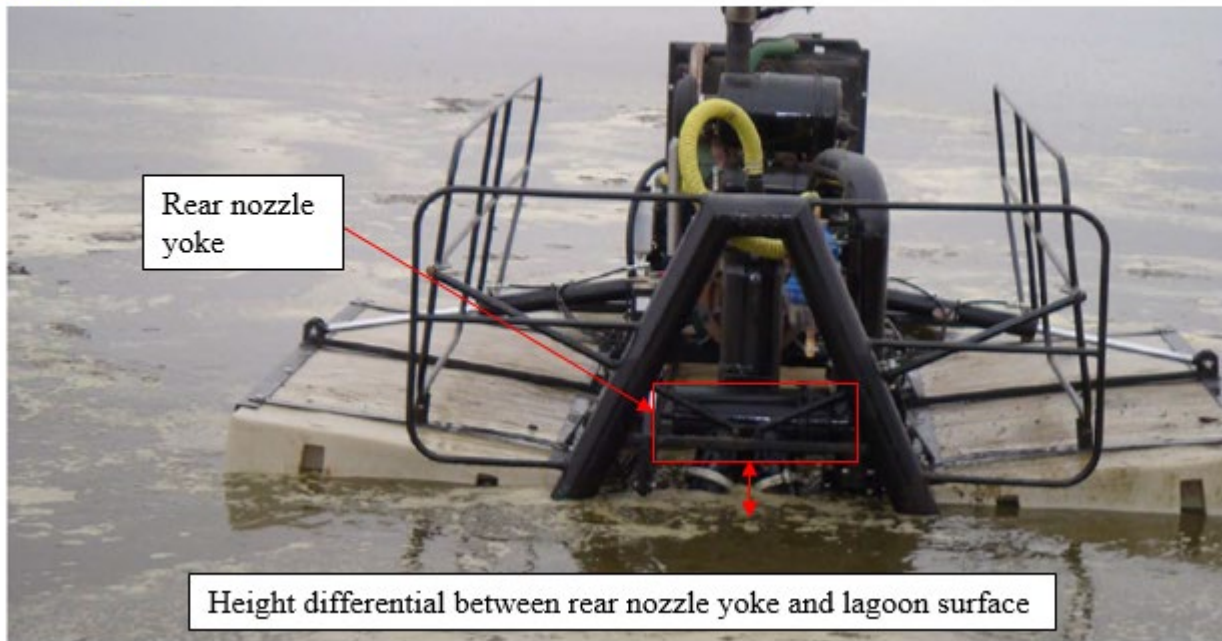
DEMONSTRATIVE EXHIBIT - NOT EVIDENCE

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

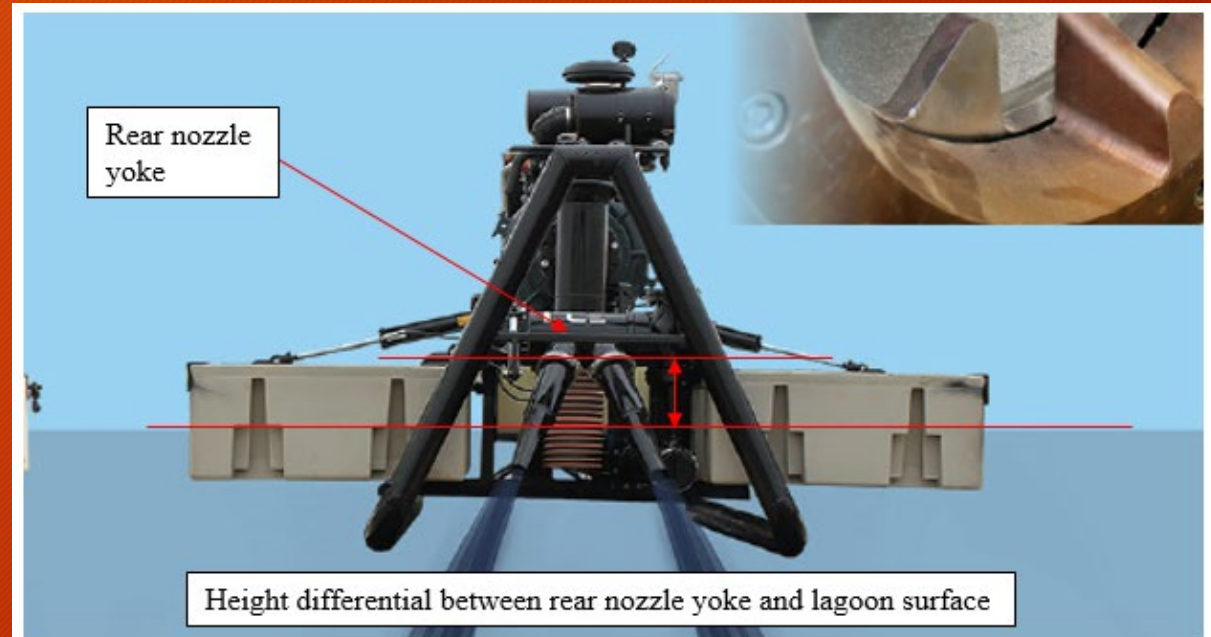
35

A POSITA would NOT understand Puck's Rear Nozzle Yoke to be a submerged component:

189. The top of the buoyant elements (floats) are not submersed when the Puck Boat is floating so a POSITA would not understand the rear nozzle yoke to be a submerged component of the vehicle, as required by Substitute Claim 41.



EX2106, ¶189.



EX1160, p. 2 (annotated).

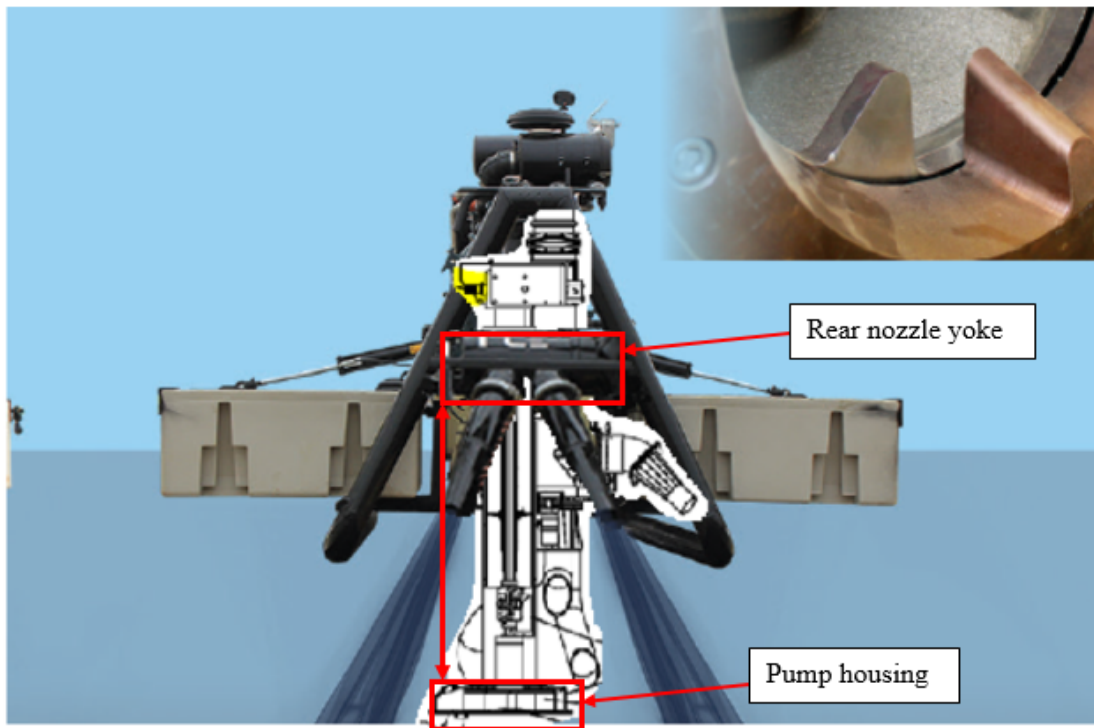
EX2106, ¶189.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE

Substitute Claims 41-56, 79, and 80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

36

Puck's Rear Nozzle Yoke would not be directly rearward of the pump housing:



192. A POSITA would understand the language of Substitute Claim 41 requiring a submerged component of the vehicle to be “directly rearward” of the pump housing as defining a three-dimensional geometric relationship where the submerged component of the vehicle must be behind the pump housing and must be at substantially the same height (i.e., submerged depth) and substantially the same lateral position (i.e., not offset to the right or left) as the pump housing. This

EX2106, ¶192.

EX1160, p. 2 (annotated). A POSITA would not consider the rear nozzle yoke of the Puck Boat as being “directly rearward of the pump housing” due to the height differential between the components. Even if the pump housing were positioned along the bottom of the buoyant elements

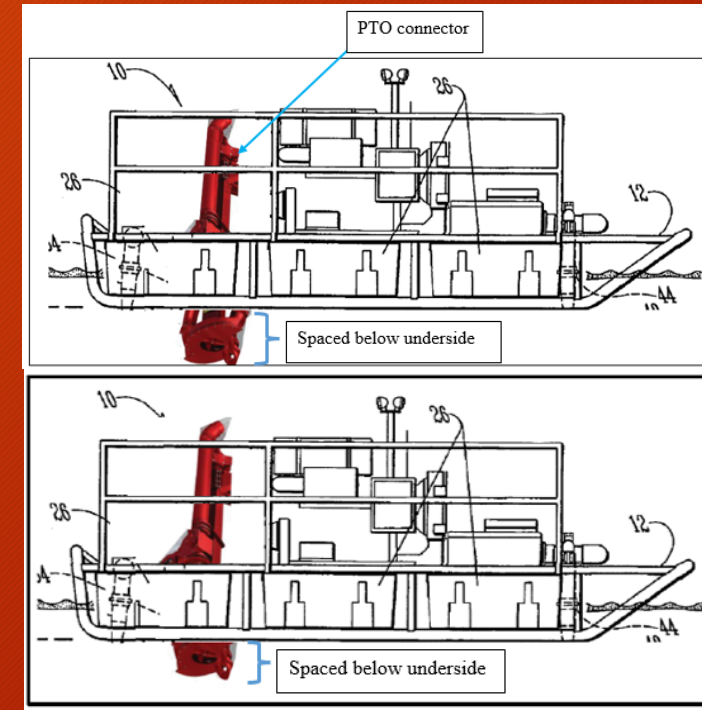
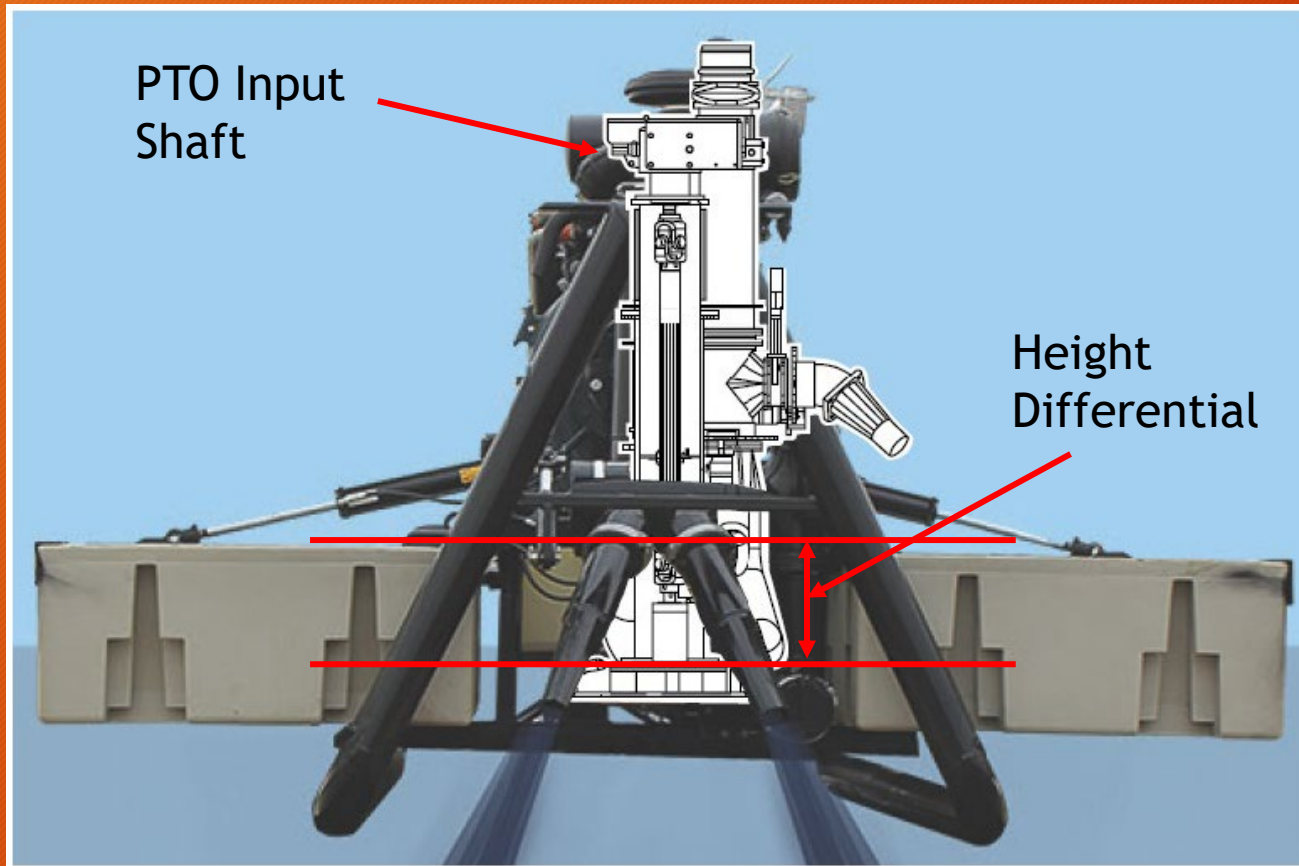
EX2106, ¶191.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE

Substitute Claims 41-56, 79, and 80 Are Not Obvious
based on Puck [EX1014] in view of Bryham [EX1015]
and Manure Manager [EX1088]

37

Puck's Rear Nozzle Yoke would not be directly rearward of the pump housing:



EX1109,
¶143.

EX1174,
¶44.

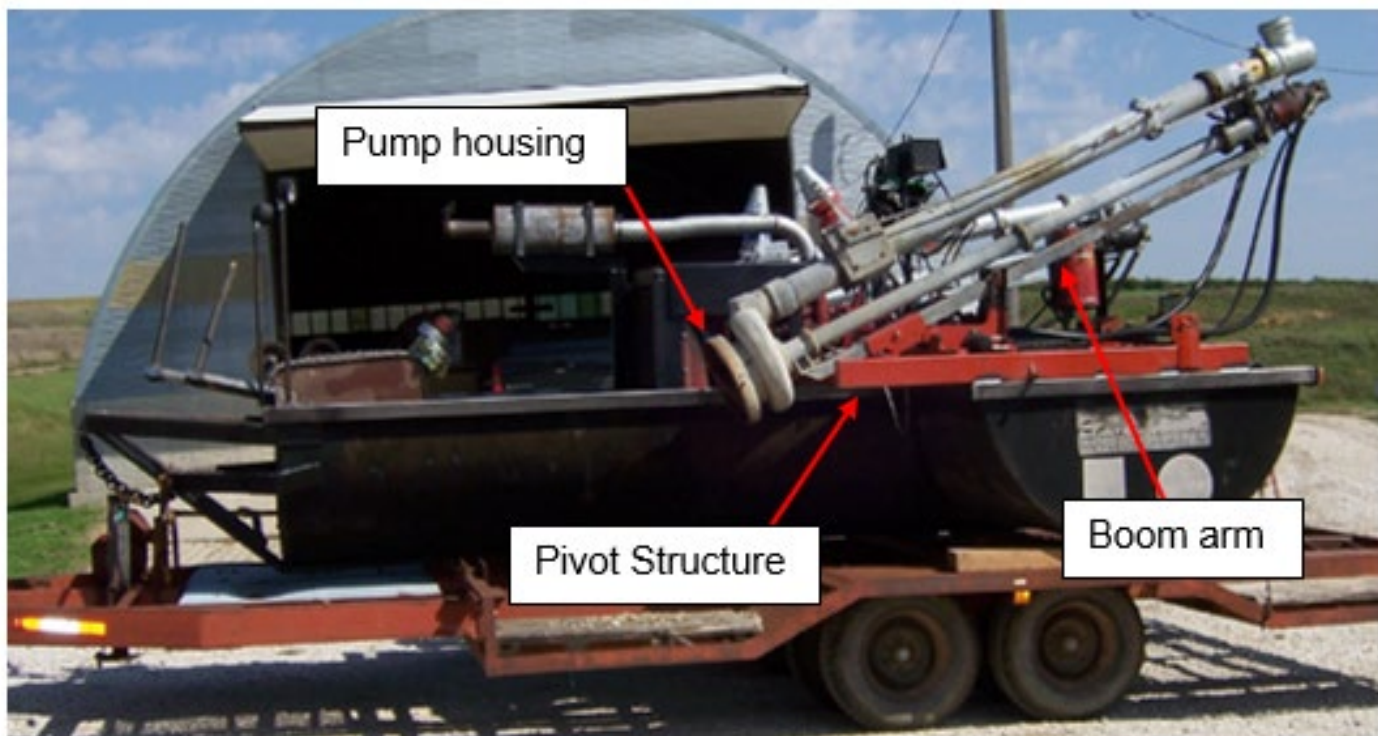
Paper 61, p. 12.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

38

Evidence showing what others in the industry (e.g., Sundstrom and Puck) did:



EX1159, 3.



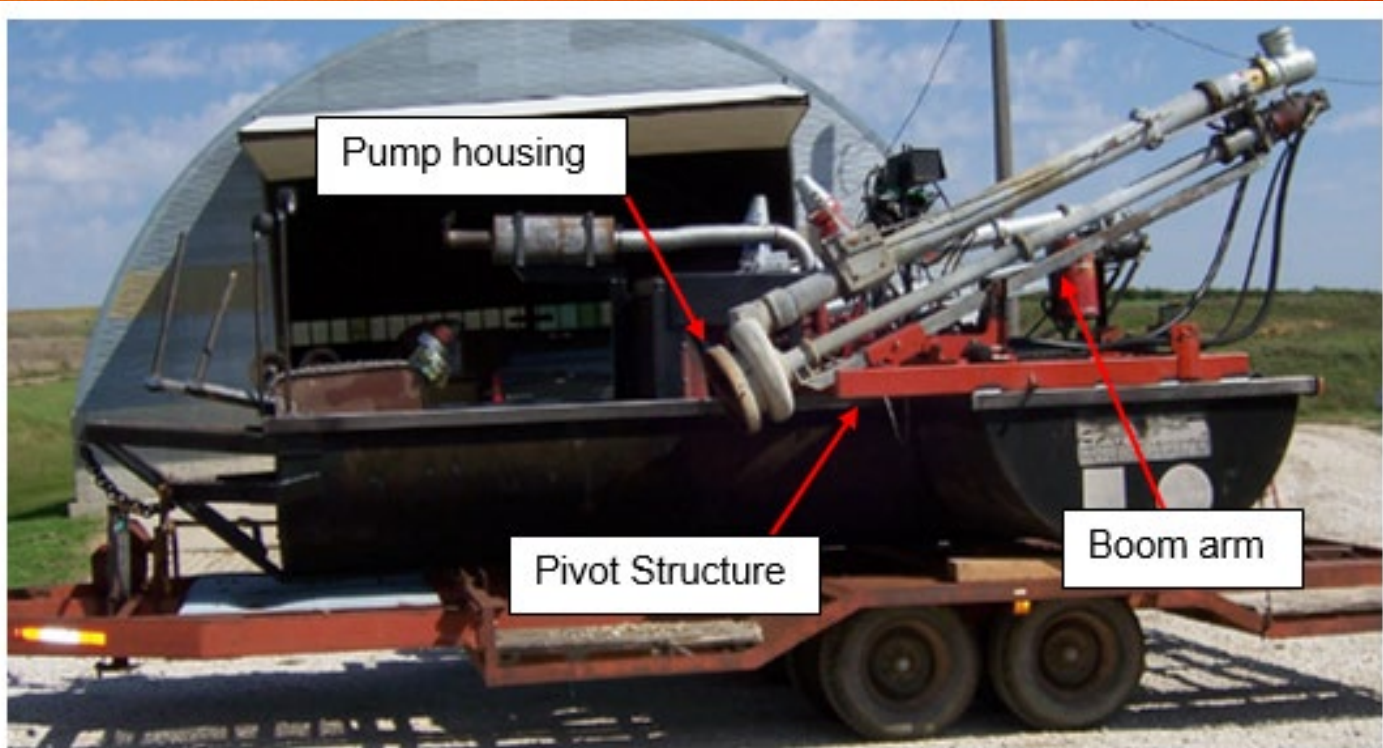
EX1156, 1.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE

Substitute Claims 41-80 Are Not Obvious based on Puck [EX1014] in view of Bryham [EX1015] and Manure Manager [EX1088]

39

Evidence showing what others in the industry (e.g., Puck) did:



EX1159, 3.



EX1159, 5.

DEMONSTRATIVE EXHIBIT - NOT EVIDENCE

Substitute Claims 41-80 Have Written Description Support

40

(i) the liquid manure pump mounted to the underside of the floatable vehicle body

Substitute Claim 41	Substitute Claim 57	Substitute Claim 79	Substitute Claim 80
[V] the pump housing and the impeller of the immersible liquid manure pump are positioned along the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body	[V] where the pump housing and the impeller are positioned along the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body	[V] where the pump housing is mounted to the underside of the floatable vehicle body [VI] in a space collectively defined between the four ground engaging wheels such that the pump housing is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body;	[V] the pump housing is mounted to the underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body;

EX2106, ¶102.

Substitute Claims 41-80 Have Written Description Support

41

(i) The pump housing mounted to the underside of the floatable vehicle body

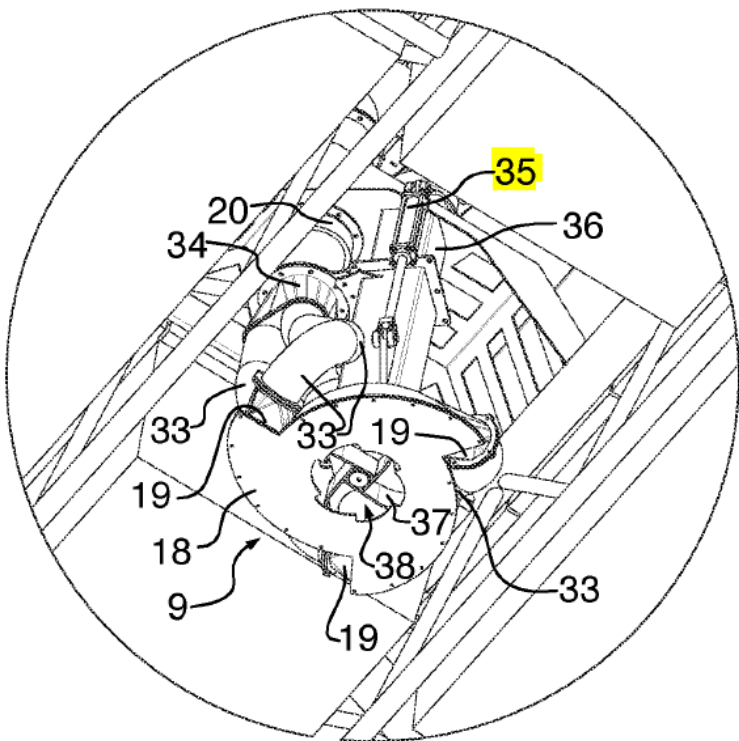


FIG. 8

EX1001, Fig. 8, p. 9.

67. I understand that Petitioner has challenged the sufficiency of this analysis on the grounds that I did not show where each element of the Substitute Claims is found in the applications that followed the provisional application. I disagree with the premise of Petitioner's argument because the provisional application and subsequent applications all share substantially the same specification. To illustrate this point, I have included with this Declaration at EX2109 - EX2114 redline comparisons between the provisional application and each of the applications in the '835 Patent's priority chain to show how each subsequent application has substantially the same specification as the provisional application. I have also included with this Declaration an updated chart at EX2108 identifying where each element of the Substitute Claims is supported in the provisional application and subsequent applications.

EX2106, ¶67.

Substitute Claims 41-80 Have Written Description Support

42

(i) the pump housing mounted to the underside of the floatable vehicle body

71. In addition to this illustrated embodiment, the specification explains that “a lever arm structure” could be used as an alternative to the telescopic support structure shown in the illustrated embodiment:

3
outlets. A greater number of tangential fluid outlets may be provided, for example three fluid outlets. The tangential fluid outlets may be combined into a single fluid conduit for directing the combined output of the fluid pump to a desired location. The vehicle may comprise structure configured to 5
cause raising and lowering of the fluid pump, especially the fluid pump housing, relative to the vehicle body. For example, a hydraulically or electrically driven linear actuator may be provided on the vehicle and configured to raise and lower the fluid pump. This may be accomplished via a 10
telescoping structure or a lever structure of the vehicle. The tangential fluid outlets may be equipped with flexible or 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 15
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. 20

EX2106, ¶67.

EX1001, col. 3, ln. 1-20. It is my opinion that a POSITA would have understood that this lever structure would be mounted to the underside of the floatable vehicle body, to the front, rear, or side of the pump housing, to act as a swing arm that would allow the pump to move up and down in a manner similar to the lever structures 5 that raise and lower the wheels.

Substitute Claims 41-80 Have Written Description Support

43

(ii) Function = to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump

Substitute Claim 41	Substitute Claim 57	Substitute Claim 79	Substitute Claim 80
[VII] wherein components of the vehicle that are submerged when the vehicle is floating are spaced from and positioned to each side of the pump housing and are spaced from and positioned directly forward of and directly rearward of the pump housing along the longitudinal centerline of the floatable vehicle body to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.	[VII] wherein portions of the vehicle that are submerged when the vehicle is floating are spaced from and positioned to the right and left of the pump housing and are spaced from and positioned forward of and rearward of the pump housing along the longitudinal centerline of the floatable vehicle body to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.	[VII] wherein portions of the vehicle that are submerged when the vehicle is floating are spaced from and positioned to each side of the pump housing and are spaced from and positioned directly forward of and directly rearward of the pump housing to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.	[VII] wherein components of the vehicle that are submerged when the vehicle is floating are spaced from and positioned to the right and left of the pump housing and are spaced from and positioned directly forward of and directly rearward of the pump housing to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.

EX2106, ¶102.