UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ARROWS UP, LLC
**Petitioner**,

v.

OREN TECHNOLOGIES, LLC
**Patent Owner**

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Case No. IPR2018-01230
Patent No. 9,248,772 B2

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# DECLARATION OF FRED P. SMITH, P.E., C.S.P., IN SUPPORT OF PATENT OWNER'S RESPONSE

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I, Fred P. Smith, do hereby declare as follows:

## I. INTRODUCTION

1. I have been retained by counsel for SandBox Logistics, LLC and Oren Technologies, LLC (collectively "Patent Owner"), in connection with IPR2018-01230 concerning U.S. Patent No. 9,248,772 (the "'772 Patent," Ex. 1001). If called upon as a witness, I could and would competently testify to the truth of each statement herein.

2. I understand that Petitioner has challenged claims 1-11 of the '772 Patent and I refer to these claims collectively as the Challenged Claims.

3. I further understand that the Board has instituted on the following grounds:

   - Claims 1, 2, and 6-10 are allegedly rendered obvious by U.S. Patent Pub. 2013/0206415 to Sheesley ("Sheesley," Ex. 1003);
   - Claim 1 is allegedly rendered obvious by the combination of Sheesley and U.S. Patent No. 8,915,691 to Mintz ("Mintz," Ex. 1004); and
   - Claims 3-5 and 11 are allegedly rendered obvious by the combination of Sheesley, Mintz, and U.S. Patent Pub. 2013/0022441 to Uhryn ("Uhryn," Ex. 1005).

4. As set forth below, I conclude that the Challenged Claims would not have been obvious to a person of ordinary skill in the art ("POSITA") based on the asserted prior art.

## II. BACKGROUND AND QUALIFICATIONS

5. A copy of my Curriculum Vitae is included as Attachment A to my declaration in this proceeding. It includes details of my education, professional, and employment credentials. Further experience with vehicle and container development, including the design and functionality of ISO containers, is set forth below.

6. I am a registered Professional Mechanical Engineer in the States of California, Nevada, and Alabama. I am a registered Professional Structural Engineer in the State of Utah. I am also a Certified Safety Professional in comprehensive practice. I received my Bachelor of Science degree in Mechanical Engineering from California State University, Long Beach, in 1984. I am the President of Alpine Engineering & Design, Inc., located in Alpine, Utah. I have approximately 37 years of experience in the fields of mechanical engineering, structural design, mechanical design, manufacturing, and container design and construction. In my role as a consultant, I have participated in the design and manufacture of numerous products, including heavy mobile and industrial equipment.

7. I am a named inventor on 71 U.S. patents with a number of other patent applications pending. A list of my patents is attached as Attachment B with my CV.

8. Many of the projects that I have led and/or participated in required the design of containers. I have designed many containers for mobile equipment, such as bodies for refuse trucks, pneumatic dry bulk trailers, end dump trailers, side dump trailers, transfer trailers, etc. I have designed ISO containers for Road Systems, Inc., now Con-way Manufacturing, which at the time was part of Consolidated Freightways. I have also designed many other containers, such as plastic rollout refuse containers, dumpsters, tanks, etc. In addition, I have designed conveyors for a number of different products, such as sand and other aggregates, food products, and bricks. I am familiar with the oilfield industry and have designed pipe handlers, redesigned drill rigs, various attachments, and many other related pieces of equipment for this industry. As a result of my consulting work and personal interests, I have personally visited many drilling sites.

9. I have testified in a number of cases, both at trial and by deposition. My company is being compensated at a rate of $400 per hour for my time in this case. The compensation received from this case is not contingent upon my opinions or performance, the outcome of the case, or any issues involved in or related to the case.

## III. MATERIALS CONSIDERED

10. In preparing this Declaration, I have reviewed:

- the '772 Patent;
- the file history of the '772 Patent;
- the Petition;
- the Declaration of Robert Schaaf in support of the Petition;
- the Deposition of Robert Schaaf dated April 12, 2019;
- the Institution Decision;
- the prior art references cited in the Petition; and
- other materials relevant to the invention of the '772 Patent that may be cited herein.

11. In forming the opinions expressed in this Declaration, I relied upon the documents listed above as well as my education, training, knowledge, and experience in the relevant field of the art, and have considered such opinions from the viewpoint of a POSITA as of March 22, 2012.

## IV. APPLICABLE LEGAL PRINCIPLES

12. I am not an attorney. I have been advised of the following general principles of patent law to be considered in forming my opinions as to whether the Challenged Claims would have been obvious to a POSITA as of March 22, 2012.

13. I understand that the Petitioner must demonstrate by a preponderance of the evidence that the asserted claims are invalid. I understand that the

preponderance of the evidence standard is one characterized as being more likely than not. As each claim is considered a separate invention, I understand that the Petitioner's burden is applicable individually to each claim.

14. I further understand that determining whether a patent claim is invalid requires two steps: first, construction of the meaning and scope of the claim (or individual terms of the claim), and second, comparing the properly construed claim to the prior art. A party may assert invalidity on the basis of anticipation or obviousness.

15. I understand that determining whether a patent claim is invalid is made from the perspective of a POSITA. That determination is made as of the date of priority applicable to the patent claims. For my analysis, I have used the date that Petitioner has asserted is the priority date, March 22, 2012. This date may change should there be other information disclosing an earlier invention date.

16. I understand that a claim may be invalid as obvious if the differences between a claim and one or more prior art references are such that the claim as a whole would have been obvious to a POSITA at the time of invention. In arriving at a conclusion as to whether a claim is obvious, I understand that several factors are to be considered: (1) the scope and content of the prior

art; (2) the differences between the art and the claims at issue; (3) the level of ordinary skill in the art; and (4) objective evidence of non-obviousness.

17. I understand that assessing which prior art references to combine and how they may be combined to match the challenged claim may not be based on hindsight reconstruction or ex-post reasoning. Hindsight reconstruction is using the patent itself as a road map for recreating the invention. In assessing obviousness, only what was known as of the time the invention was made can be considered. I also understand that one important guard against such hindsight reconstruction is a determination whether a POSITA would have been motivated, taught, or suggested to combine the relevant teachings of the prior art to duplicate the challenged claim at the time of the filing of the application on the patented invention.

## V. BACKGROUND OF THE '772 PATENT

18. The '772 Patent issued on February 2, 2016, from U.S. Patent Appl. No. 14/310,648, filed on June 20, 2014. Ex. 1001 ('772 Patent) at Cover. The '772 Patent is a continuation of Appl. No. PCT/US2013/032819, filed on March 18, 2013, which is a continuation of U.S. Patent Appl. No. 13/427,140, filed on March 22, 2012, now U.S. Patent No. 8,622,251, which is a continuation in part of U.S. Patent Appl. No. 13/332,937, filed on December 21, 2011, now U.S. Patent No. 8,827,118. *Id.*

19. For the purposes of my Declaration, I have been asked to assume that the priority date of the invention recited in the '772 Patent is March 22, 2012.

20. The '772 Patent is titled "Method of Delivering, Transporting, and Storing Proppant for Delivery and Use at a Well Site." *Id.*

21. "Proppant is material, such as grains of sand, ceramic, or other particulates that prevent [hydraulic] fractures from closing when the [hydraulic] injection is stopped." *Id.* at 1:36-38. "Fracturing is done from a wellbore drilled into reservoir rock formations." *Id.* at 1:30-31. High pressure fracturing fluid, usually formed of water, proppant, and other chemical additives, is injected into the wellbore. "The energy from the injection of a highly-pressurized fracturing fluid creates new channels in the rock which can increase the extraction rates and ultimate recovery of fossil fuels." *Id.* at 1:31-34. "The fracture width is typically maintained after the injection by introducing a proppant into the injected fluid." *Id.* at 1:34-35.

22. "By far the most dominant form of proppant is silica sand, made up of ancient weathered quartz." *Id.* at 1:44-46. "Typically, in any hydraulic fracturing operation, a large amount of such proppant is required," but "it has been difficult to effectively store the proppant at the fracturing sites" and "it has been found to be rather difficult to effectively transport the proppant

to the desired location." *Id.* at 1:59-63. Prior art methods of transporting proppant were costly. *Id.* at 2:1-7, 2:29-42.

23. The '772 Patent provides a "method of delivering, transporting, and storing proppant for delivery and use at a well site." *Id.* at Title. Figure 3 "shows a system 60 of the present invention." *Id.* at 7:54. "The system 60 initially involves the transport of a load of proppant to a desired location in a vessel 62. The vessel 62 is in the nature of hoppers associated with a bulk material train 64." *Id.* at 7:54-57. "The bulk material train 64 is driven by an engine 66 located on a rail spur 68." *Id.* at 7:57-59. Here, the engine 66 and vessel 62 are on the rail spur. The proppant is then unloaded into "containers 70, 72, 74 and 76," located in close proximity to the rail spur 68. *Id.* at 7:65-8:18. One of the logistical advantages taught by the '772 Patent is that "[t]he vessel 62 of the bulk material train 64 can be immediately unloaded at this desired location so that the engine 66 can return the bulk material train 64 for other railroad usages." *Id.* at 7:61-64. The '772 Patent goes on to describe the various ways the containers and tilting mechanisms adjacent to a rail spur can be used to increase the efficiency of removing proppant from the bulk material train 64. "As such, it can be seen that the staging of the various flatbed trucks allows for the efficient and effective removal of the proppant from the hoppers of the bulk material train 64." *Id.* at 8:51-54.

24. Figure 1 of the '772 Patent illustrates a preferred embodiment of a container. This embodiment includes "a bottom wall 14, a top wall 16, a pair of side walls 18 and 20 and a pair of end walls 22 and 24." *Id.* at 6:26-28. "The end wall 22 extends between the bottom wall 14 and the top wall 16," whereas "end wall 24 extends between the bottom wall 14 and the top wall 16 and also between the side walls 18 and 20." *Id.* at 6:32-35. Further, "flow gate 28 is positioned on the end wall 22," and "is openable so as to allow the proppant to flow outwardly of the interior volume of the container 12." *Id.* at 6:38-41.

## VI. LEVEL OF ORDINARY SKILL IN THE PERTINENT ART

25. I understand that several factors are relevant to determining the level of ordinary skill in the art at the time of the claimed invention. I understand that those factors include: (1) the educational level of the inventor(s); (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.

26. The art of the '772 Patent relates to storage containers, their construction and use in systems and methods for delivering proppant to a well site. To understand the patents and the storage containers, how they are built, and how they are used, a POSITA must have an understanding of container

structures, stress analysis, and expected worst-case loads generated during normal usage situations. It is my understanding that factors such as types of problems encountered in the art, prior art solutions to such problems, how fast innovations are made, sophistication of the technology, and the educational level of active workers in the field are to be considered when determining the level of ordinary skill in the art. After considering such factors, it is my opinion that a POSITA would have at least a four-year bachelor's degree in engineering and two to three years of experience in container design and material handling/discharge systems, particularly systems for use with particulate material, such as sand or proppant; or a high school degree and an equivalent amount of training and experience with container design and material handling/discharge systems.

## VII. CLAIM CONSTRUCTION

27. I understand that claims in this IPR are to be given their broadest reasonable interpretation in view of the claim language, patent specification, and the understanding of a POSITA.

28. I understand that the Board construed the phrase "second different end surface" from claim 1 of the '772 Patent to require that "the two end surfaces are structurally different." Paper 7 (Institution Decision) at 10. I

understand that the Board determined that no other claim terms of the '772 Patent require express construction. *Id.*

29. I agree with and apply the Board's construction of the phrase "second different end surface" from claim 1 of the '772 Patent. A POSITA would understand that references to a first end surface and a second different end surface refer to structurally different end surfaces. For all terms not expressly construed, I apply the plain and ordinary meaning in my analysis.

## VIII. BACKGROUND ON PRIOR ART REFERENCES

30. Before providing a detailed analysis of why the cited prior art does not invalidate the Challenged Claims, I provide a brief summary of the art.

### A. Background on Sheesley

31. U.S. Patent Application Publication No. 2013/0206415 to Sheesley ("Sheesley") was filed on February 10, 2012 and published on August 15, 2013. Ex. 1003 at Cover. Sheesley's abstract discloses a "cargo container … modified to carry a fracing proppant such as sand from a quarry or source to the frac site." *Id.* at Abstract.

### B. Background on Mintz

32. U.S. Patent No. 8,915,691 to Mintz ("Mintz") was filed on January 1, 2012 and issued on December 23, 2014. Ex. 1004 at Cover. Mintz's abstract discloses an "[a]pparatus for transporting frac sand and/or proppant for use

in standard ISO intermodal containers and for delivering frac sand and/or proppant to well sites." *Id.* at Abstract.

### C. Background on Uhryn

33. U.S. Patent App. No. 2013/0022441 to Uhryn et al. ("Uhryn") was filed May 18, 2012 and published on January 24, 2013. Ex. 1005 at Cover. Uhryn's abstract discloses a "method of bulk transport of proppant." *Id.* at Abstract.

## IX. THE CHALLENGED CLAIMS ARE NOT UNPATENTABLE

### A. Claim 1 Is not Rendered Obvious

#### 1. Sheesley does not disclose limitation [1(a)(i)].

34. Limitation [1(a)(i)] of the '772 Patent as set forth by Petitioner claims "vertically stacking a plurality of empty proppant containers in close proximity to a rail spur so that one of the plurality of empty proppant containers overlies another one of the plurality of empty containers thereby to reduce footprint of the area required adjacent the rail spur to store the plurality of empty proppant containers." Ex. 1001 ('772 Patent) at Claim 1. Petitioner and Mr. Schaaf state that Sheesley "discloses this limitation." Paper 1 ("Pet.") at 26; Ex. 1002 (Schaaf Decl.) ¶ 69. I disagree.

35. Limitation [1(a)(i)] requires stacking and storing a plurality of empty containers in close proximity to a rail spur, which is not disclosed in Sheesley.

36. First, Sheesley's Figure 3 is only described as being practiced at the well site. Sheesley discloses that "FIG. 3 is a pictorial illustration of the stackability of modified cargo containers, with or without sand therein." Ex. 1003 (Sheesley) at [0021]. And Sheesley further discloses that this stacking is done at the well site: "[a]t the well site to be fraced, modified cargo containers 270 can be stacked as shown in FIG. 3." *Id.* at [0083]. Further, Sheesley teaches that frac sites are located away from rail spurs, and that containers are to be delivered to the frac sites by truck trailers: "[i]f being hauled by the flatbed truck trailer 290, the modified cargo container 270 can be taken directly to the fracing site 294. However, if modified cargo containers 270 are being transported by rail car 292, they must be off-loaded onto flatbed truck trailer 296 prior to be [sic] taken to the fracing site 294." *Id.* at [0081].

37. Second, Figure 2 of Sheesley and associated paragraph [0078] do not disclose that Sheesley's modified cargo containers can be filled with proppant at a rail spur and therefore do not disclose limitation [1(a)(i)].

38. Third, Figure 5 of Sheesley, on which Petitioner and Mr. Schaaf rely, Pet. at 25-26; Ex. 1002 (Schaaf Decl.) ¶¶ 67-68, clearly shows modified cargo containers being filled while on a rail car, which teaches against stacking empty containers near the rail spur. Instead, Sheesley discloses transporting

empty containers on a rail car to the rail spur to be filled, and then taking the full containers off of the rail car for delivery to the well site. Ex. 1003 (Sheesley) at [0079]-[0081]. Petitioner and Mr. Schaaf state that "[a] POSITA at the time would understand that Sheesley's auger could provide proppant received from a rail car on the rail spur … into Sheesley's empty proppant containers, and that such containers would necessarily be in 'close proximity' to the rail spur." Pet. at 26; Ex. 1002 (Schaaf Decl.) ¶ 68. To the contrary, the proppant containers being filled in Figure 5 are not in close proximity to a rail spur. Figure 5 does not disclose stacked empty containers near or adjacent to a rail spur, the purpose of which is getting proppant off the rail car quickly without having to have pneumatic trailers immediately available to load into at the rail spur.

39. The '772 Patent distinguishes between being on a rail spur on the one hand and in close proximity to a rail spur on the other. Figure 3 "is an illustration of the system of the present invention." Ex. 1001 ('772 Patent) at 6:19-20. "The system 60 initially involves the transport of a load of proppant to a desired location in a vessel 62. The vessel 62 is in the nature of hoppers associated with a bulk material train 64." *Id.* at 7:54-57. The '772 Patent specifically states that "[t]he bulk material train 64 is driven by an engine 66 ***located on a rail spur*** 68." *Id.* at 7:57-58 (emphasis added). Conversely,

"containers 70, 72, 74 and 76 can be ***located in proximity to*** the vessel 62 and adjacent to the bulk material train 64." *Id.* at 7:66-8:1 (emphasis added).

40. Further, the '772 Patent explains it provides "a system for the storage and transport of proppant that can be located in proximity to the rail spur." *Id.* at 4:17-19. It states that in the system "[t]he vessel 62 of the bulk material train 64 can be immediately unloaded at this desired location so that the engine 66 can return the bulk material train 64 for other railroad usages." *Id.* at 7:61-64. Storing empty containers on rail cars on a rail spur would nullify this advantage. The engine driving bulk material train 64 would not be free to "return the bulk material train 64 for other railroad usages," but would instead have to sit on the rail spur while the empty containers remained in storage on that same rail spur.

41. Offloading proppant into containers as disclosed solves a difficult logistics problem in the prior art of having enough expensive pneumatic trailers to offload into all at the railroad spur at the same time so as not to hold up the train for an extended period of time. Containers 70, 72, 74, and 76 are used as a buffer of sorts allowing the train to be unloaded as quickly as possible, even if no pneumatic trailers are available to offload into. Thus the train can be on its way quickly to reduce charges that might otherwise occur.

42. Thus, Sheesley does not disclose limitation [1(a)(i)].

**2. Sheesley does not disclose limitation [1(a)(ii)].**

43. Limitation [1(a)(ii)] of the '772 Patent as set forth by Petitioner claims "each of the plurality of empty containers including at least a first end surface and at least a second different end surface." Ex. 1001 ('772 Patent) at Claim 1. Petitioner and Mr. Schaaf state that Sheesley "discloses this limitation." Pet. at 26-27; Ex. 1002 (Schaaf Decl.) ¶¶ 70-71. I disagree.

44. In the Institution Decision, the Board found that this term requires "that the two end surfaces are structurally different." Paper 7 (Institution Decision) at 10.

45. Petitioner provides an annotated version of Sheesley's Figure 9 and concludes that this figure discloses this limitation. Pet. at 26-27. This annotated version of Sheesley's Figure 9 is reproduced below.

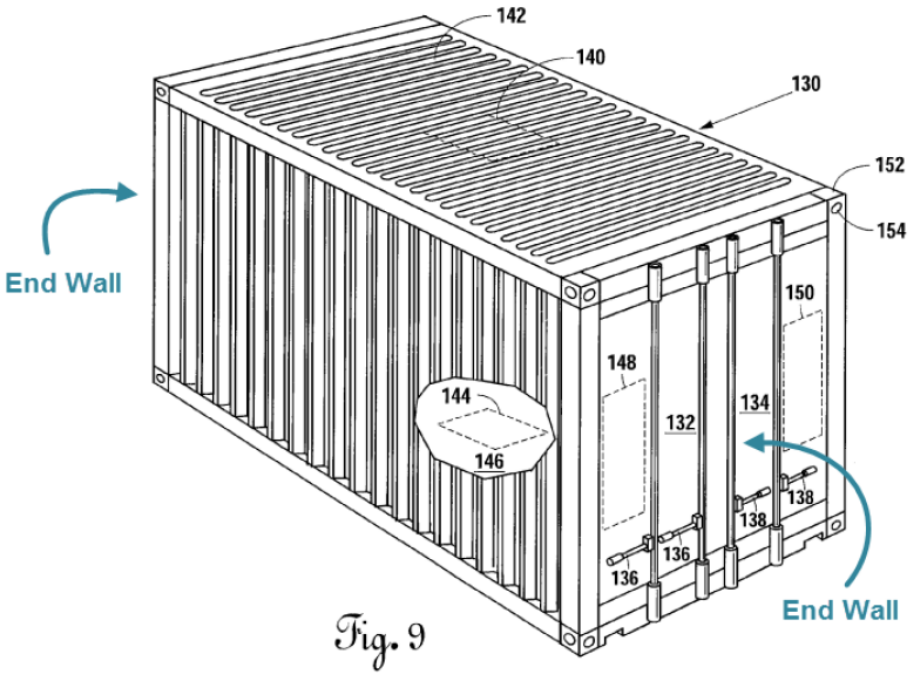



Fig. 9

46. Doors on one "End Wall" of Figure 9 are clearly visible, however the structure of the other "End Wall" is not shown. A POSITA at the time of invention would recognize that many ISO containers were made with doors on both ends, including the 20 ft. long ISO container disclosed in Sheesley's Figure 9, Ex. 1003 (Sheesley) at [0050], and were readily available. *See* Ex. 2010 (20 ft. ISO Containers with doors on both ends, available at https://web.archive.org/web/20091018063039/http://www.tripleeight.net/containers/20ft-double-door.html/). Thus, a POSITA would understand that the other "End Wall" could be the same as the visible "End Wall."

47. Because the structure of the other "End Wall" is not shown to be the same as the visible "End Wall," Sheesley does not disclose limitation [1(a)(ii)].

**B. Claim 2 Is not Rendered Obvious.**

**1. Sheesley does not disclose the limitations of claim 2.**

48. Claim 2 of the '772 Patent claims "[t]he method of claim 1, wherein the plurality of proppant filled containers comprises a first plurality of proppant filled containers, and the method further comprising: filling a second plurality of empty proppant containers with proppant from one or more proppant transporting rail vehicles thereby to produce a second plurality of proppant filled containers; and vertically stacking the second plurality of proppant filled containers with a loader so that one of the plurality of

proppant filled containers overlies another one of the plurality of filled containers to reduce the footprint of the area required for storage of the proppant in close proximity to the rail spur." Petitioner and Mr. Schaaf state that Sheesley "discloses this limitation." Pet. at 33-34; Ex. 1002 (Schaaf Decl.) ¶¶ 80-81. I disagree.

49. Claim 2 requires stacking and storing filled containers in close proximity to the rail spur, which is not disclosed by Sheesley.

50. Sheesley's Figure 3 is only described as being practiced at the well site. Sheesley discloses that "FIG. 3 is a pictorial illustration of the stackability of modified cargo containers, with or without sand therein." Ex. 1003 (Sheesley) at [0021]. And Sheesley further discloses that this stacking is done at the well site: "[a]t the well site to be fraced, modified cargo containers 270 can be stacked as shown in FIG. 3." *Id.* at [0083]. Further, Sheesley teaches that frac sites are located away from rail spurs, and that containers are to be delivered to the frac sites by truck trailers: "[i]f being hauled by the flatbed truck trailer 290, the modified cargo container 270 can be taken directly to the fracing site 294. However, if modified cargo containers 270 are being transported by rail car 292, they must be off-loaded onto flatbed truck trailer 296 prior to be [sic] taken to the fracing site 294." *Id.* at [0081].

51. Sheesley does disclose a storage location in Figure 2 and associated paragraphs of the specification, but that storage location is removed from the rail spur. For example, Sheesley's paragraph [0079] discloses that "[i]f the modified cargo containers 270 are loaded on flatbed truck trailer 278 or container chassis, the modified cargo containers 270 can be taken directly to the fracing site 280 or placed in storage 282 at the fracing site 280." *Id.* at [0079]. Further, the specification clarifies that "[c]oncerning sand being hauled by rail 276, the modified cargo containers 270 will have to be off-loaded onto flatbed truck trailer 284, which flatbed truck trailer 284 can then take the modified cargo containers 270 filled with fracing sand either to storage 286 or to the fracing site 288." *Id.* at [0080]. Sheesley does not disclose that the filled containers are stored in close proximity to the rail spur, rather they must be hauled from the rail spur to a separate storage location.

52. Thus, Sheesley does not disclose claim 2.

### C. Claim 4 Is not Rendered Obvious.

53. Limitation [4(a)] of the '772 Patent as set forth by Petitioner claims "conveying the proppant from one or more of the plurality of proppant [f]illed[1] containers to one or more proppant transporting road vehicles on a

[1] I agree with Petitioner that "tilled" should be read as "filled."

second conveyor." Ex. 1001 ('772 Patent) at Claim 4. Petitioner and Mr. Schaaf state that Sheesley "renders this limitation obvious" and that Uhryn "teaches" this limitation. Pet. at 55-57; Ex. 1002 (Schaaf Decl.) ¶¶ 121-24. I disagree.

**1. Sheesley does not render claim 4 obvious.**

54. Petitioner and Mr. Schaaf argue that a POSITA would understand that because the containers of Sheesley can be unloaded onto a conveyor to fill the blender, that it could also be unloaded onto a conveyor to fill a proppant transporting road vehicle. Pet. at 55-56; Ex. 1002 (Schaaf Decl.) ¶¶ 121-22. This is incorrect.

55. First, a blender is by no means a "proppant transporting road vehicle," instead it is the equipment used to mix the proppant and other fluids before the slurry is sent down through the fractures. Sheesley itself explains that "[i]n the blenders, the sand is mixed with the fracing fluid that will contain other chemicals therein prior to injection under pressure into the well being fraced at the frac site." Ex. 1003 (Sheesley) at [0084].

56. Second, Petitioner and Mr. Schaaf suggest Sheesley renders limitation [4(a)] obvious because Sheesley's "containers may be emptied into bulk proppant containers such as the Sand King." Pet. at 56; Ex. 1002 (Schaaf Decl.) ¶ 121. Bulk proppant containers such Sand Kings, Mountain Movers, or Frac

Sanders are not "proppant transporting road vehicles." Rather, a POSITA would know that a Sand King is a Frac Sand Handling and Storage Solution manufactured and sold by Convey-All and a Mountain Mover is a device for storing and distributing sand at a well site. Sand Kings, mountain movers, and Frac Sanders are trailers that can be transported on the road, not proppant transporting road vehicles—they are not transported while full of sand. They are transported in an empty condition to a well site. Once there, they are and set up "to receive proppant from the proppant transfer device" and "to load one or more blenders 66 on site for mixing proppant." Ex. 1005 (Uhryn) at [0020]. This is confirmed by U.S. Patent No. 8,734,081 to Stegemoeller ("Stegemoeller"). Ex. 2011. Stegemoeller was filed on November 20, 2009 and reflects the knowledge of a POSITA at the time of invention of the '772 Patent. *Id.* at Cover. Stegemoeller specifically states that "[i]n hydraulic fracturing operations, for example, proppant may be transferred to a horizontal storage unit, sometimes referred to as a "mountain mover" in the oilfield services industry. A horizontal storage unit may be positioned on a well site pad while the unit is empty." *Id.* at 1:17-21. The horizontal storage unit may then be filled, via tractor-trailer proppant transport vehicles, for example." *Id.* at 1:21-23. This confirms that

Sheesley's "bulk sand container" and other units like it are not proppant transporting road vehicles.

57. Third, unloading Sheesley's modified cargo containers into a separate proppant transporting road vehicle is contrary to the teachings of Sheesley. A POSITA reading Sheesley would understand that the benefit is that the proppant can be transported in the container from the quarry to the well site in the container, without being removed or transferred, saving time and money. Ex. 1003 (Sheesley) at [0009]-[0017]. Specifically, Sheesley states:

> The modified cargo containers may be taken directly to the quarry and loaded with sand. The modified cargo containers can then move through all of the normal modes of transportation including ship, barge, rail or by truck, all the way to the frac site. The sand never has to be handled again. All that has to occur is the modified cargo container is moved from one mode of transportation to another (*i.e.*, ship-to-rail-to-truck) as it moves from the quarry to the frac site. *Id.* at [0017].

58. Taking the proppant out of Sheesley's modified cargo containers and putting it in a proppant transporting road vehicle is expressly against the teachings of Sheesley and a POSITA would not be motivated to do so.

### 2. Uhryn Does not Teach Limitation [4(a)].

59. Uhryn discloses conveying proppant from a container into a Mountain Mover/Sand King. Ex. 1005 (Uhryn) at [0020]. At no point does Uhryn disclose that a Sand King or a mountain mover is a proppant transporting road vehicle, which correlates with the understanding of a POSITA, as discussed *supra* section IX.C.1.

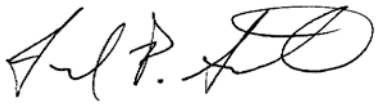
60. Thus, Uhryn does not teach limitation [4(a)].

## X. CONCLUSION

61. I hereby declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct, and that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true. I understand that willful false statements are punishable by fine or imprisonment or both. *See* 18 U.S.C. § 1001.

Date: April 29, 2019

Respectfully submitted,



# Attachment A

# Curriculum Vitae of FRED PETERSON SMITH

Mr. Smith has been in consulting engineering since 1980. He is currently president of Alpine engineering & Design, Inc., a company he started in 2000. Previously, he spent 20 years doing consulting work with F.S. New Products, Inc.

While working for F.S. New Products, Inc., Mr. Smith developed and patented RF and Magnetic shielding for magnetic resonance imagers. Mr. Smith and two other partners started MRI Support Systems Corporation to exploit the patented technology. As Vice President of Engineering for MRI Support Systems Corporation, Mr. Smith was responsible for the design of RF and magnetic shields manufactured for magnetic resonance imagers and supervised the development of new shielding products. He collaborated with other engineers and architects to assure the shielding interfaced well with the complete project and tested the performance of the completed shields.

In 2004, while working for Alpine Engineering & Design, Inc., Mr. Smith, along with two partners, began a startup company, Composite Works, LLC, which designed and manufactured custom fiberglass components for OEM's. Mr. Smith designed or specified all the processes, equipment and molds required to produce the products. Composite Works, LLC was successfully sold in 2015.

Mr. Smith began his engineering career, prior to college, in the engineering department of Sargent Industries, Huntington Park Division, a company that designed and manufactured valves for nuclear submarines. He performed engineering design changes, accumulated and organized technical information for record purposes and submittal to customers on government related projects. He was tasked with writing instruction manuals for the process he developed for the preparation of Certification Data Sheets and model parts lists.

Mr. Smith worked for F.S. New Products, Inc. and attended college concurrently from 1980 through 1984. In 1984 Mr. Smith completed his B.S. in Mechanical Engineering and graduated with distinction from California State University, Long Beach, where he was on both the Dean's and the President's Honor Lists.

During his consulting career, Mr. Smith has directed the development and improvement of a wide variety of products including trucking equipment, refuse equipment, hydraulically operated mobile equipment, specialty axles and suspensions, zip lines amusement rides, exercise equipment, radio frequency and magnetically shielded enclosures, rotomolded containers, aerial lifts and a variety of consumer products.

Mr. Smith's expertise extends to many areas of product design; including concept generation, design, stress calculations, finite element analysis, modeling, safety, prototyping, testing, manufacturing and assisting in the patent process. Mr. Smith co-authored a white paper entitled, "An Engineering Guide for Trailer Safety Chain Installation, Attachment and Use." Mr. Smith has been retained over 500 times as an expert in product liability, breach of warranty, negligent misrepresentation and intellectual property cases.

Mr. Smith is a registered professional engineer in the States of California, Utah, Nevada and Alabama, license numbers M025127, 177027-2202, 016907 and 28224 respectively.

Mr. Smith is certified by the Board of Certified Safety Professionals as a Certified Safety Professional in comprehensive practice, CSP No. 18890. He has certified as a trainer in 1st aid, CPR and AED. He has certified as a train-the-trainer for lift truck operators. He has also certified as a trainer for aerial work platforms and aerial boom lifts. He has also certified as an overhead, mobile crane and rigging inspector. He has completed the OSHA 30 hour Hazard Recognition Training and the OSHA Health and Safety courses. He has taken a number of continuing education courses including Intellectual Property Issues, Risk Management and Assessment, Pole Top Rescue, Confined Space and Lock Out/Tag Out.

Mr. Smith has been a member of the Utah Safety Council, National Safety Council, American Society of Mechanical Engineers, the Society of American Value Engineers, the National Honor Society, and Tau Beta Phi, a national engineering honor society. He was nominated for membership in Phi Kappa Phi, and has been named to Who's Who in California, Who's Who in the West and the national registry of Who's Who in Executives and Businesses. He also received an award for being one of Utah's top inventors.

Mr. Smith is an inventor with over 70 patents and a number of patent applications pending.

# Attachment B

## PREVIOUS TESTIMONY

| Case | Court case | Number |
|---|---|---|
| **2015** | | |
| * Melchior v Hilite | District Court, N District TX, Dallas div. | 3:11-cv-03094-M |
| J&M v Unverferth | PTAB | IPR2014-00758 |
| Harder v JLG | Superior Court of Alaska, 3rd District | 2BA-12-00043 CI |
| Lee v Berkel | District Court, Brazoria CO, TX | 75576-CV |
| ESCO v Caterpillar | District Court, District of NV | 2:12-cv-01545-RCJ-PAL |
| Holmberg v US Government | US Court of Federal Claims | 14-284C |
| Garcia v United Parcel Service | District Court, Hidalgo CO, TX | C-1808-13-J |
| Arredondo v ACCO Products | County Court, Nueces County, TX | Number 1 |
| **2016** | | |
| *Standard & Hingst v Starcraft | Iowa District Court | LACV 008424 |
| MTD v. Toro | Northern District Court of Ohio | 1:16-cv-00297-SL |
| Jernigan v Heil | Circuit Court, Barbour County, AL | CV-69-CV-2015-900009 |
| Verrazono v Gehl | Superior Court of CA | SCV-256870 |
| Eisenbise v Crown | Southern District of CA | 3:15-cv-00972-AJB-WVG |
| Rivas v Jerr-Dan | Superior Court of CA, Marin Co. | CIV1302666 |
| Abrams v Takeuchi | District Court, 506th District, Waller Co. | 15-08-23266 |
| Eisenbise v Crown | District Court, Southern District of CA | 15-CV-0972-AJB (WVG) |
| YETI Coolers v RTIC Coolers | District Court, Western District of TX, Austin | 1:15CV597-RP |
| **2017** | | |
| Garcia v United Parcel Service | District Court, Hidalgo CO, TX | C-1808-13-J |
| SFEG v Blendtec | District Court, Northern District of Ohio | 1:15-cv-01118-PAG |
| Rivas v Jerr-Dan | Superior Court of CA, Marin Co. | CIV1302666 |
| *Abrams v Takeuchi | District Court, 506th District, Waller Co. | 15-08-23266 |
| SFEG v Blendtec | District Court, Middle District of TN | 3:15-CV-00466 |
| *Verrazono v Gehl | Superior Court of CA, Sonoma Co. | SCV-256870 |
| Lucido v Hydrogear | District Court, Clark Co., NV | Case No.: A693081 |
| Vita-Mix v Blendtec | District Court, Northern District of Ohio | 1:15-cv-01118-PAG |
| *Eisenbise v Crown | District Court, Southern District of CA | 15-CV-0972-AJB (WVG) |
| Holmberg v US Government | US Court of Federal Claims | 14-284C |
| MTD v. Toro | Northern District Court of Ohio | 1:16-cv-00297-SL |
| Grit Energy v. Oren Technologies | US Patent and Trademark Office (PTAB) | IPR2017-00768 |
| **2018** | | |
| Ronald Hornsby v Scranton Manuf. Co. | 11th Judicial Circuit, McLean Co., IL | No. 12 L 36 |
| Grit Energy v. Oren Technologies | US Patent and Trademark Office (PTAB) | IPR2017-00768 |
| Cordelia Lighting v. Cooper Lighting | US Patent and Trademark Office (PTAB) | IPR2017-01857/01859 |
| IQASR v. Wendt Corp. | US District Court of Colorado | No. 16-cv-01782-MSK-KMT |
| Keeney v. Altec | Superior Court, Hew Haven, CT | NH156-CV-6055589-S |
| *Morgan v. Baker Hughes | US District Court, District of WY | 14-CV-210-SWS |
| Caballero v. 3JG Printing, et al | District Court, 134th District, Dallas Co. | DC-17-09354 |

*Indicates testified in court. Underline indicates retaining party.