UNITED STATES DISTRICT COURT

EASTERN DISTRICT OF CALIFORNIA

VERTICAL TANK, INC., a California Corporation, **Plaintiff,** **v.** **BAKERCORP, a Delaware corporation, and UNITED RENTALS (NORTH AMERICA), INC., a Delaware Corporation,** **Defendants.**	**Case No. 1:18-CV-00145-LJO-JLT** **CLAIM CONSTRUCTION ORDER** **(ECF No. 22)**

I. BACKGROUND

Vertical Tank, Inc. ("VTI") brings this patent infringement action against BakerCorp and United Rentals (North America), Inc. (collectively, "Baker"), alleging infringement of three patents: A single utility patent, United States Patent No. 9,777,543 ("the '543 Patent"); and two design patents, United Sates Patent Nos. D716,842 ("the '842 Patent") and D716,843 ("the '843 Patent"). ECF No. 25, First Amended Complaint ("FAC"). The '543 Patent is "directed to one or more vertical cone bottom tanks having a lower manifold and an upper manifold that facilitate the creation of tank arrays in an oil or gas field in which the tanks are connected together through the lower and/or upper manifolds." *Id.* at ¶ 13. The '842 and '843 Patents are directed to the selection

and arrangement of the component parts making up the lower manifold and upper manifold, respectively. *Id*. at ¶¶ 14-15.

This matter is before the Court on the parties' competing briefs regarding claim construction of three terms in the utility patent and three aspects of the design patents. (ECF No. 22, Joint Claim Construction Statement.) VTI filed an opening claim construction brief on November 30, 2018 (ECF No. 27), Baker responded on December 14, 2018 (ECF No. 28), and VTI replied on December 21, 2018 (ECF No. 30). On February 7, 2019, by stipulation of the parties and with leave of the Court, Baker filed a supplemental responsive brief. ECF No. 34. After considering the parties' briefs and all other relevant documents the Court finds a claim construction hearing unnecessary at this time, *see Ballard Med. Prod. v. Allegiance Healthcare Corp.*, 268 F.3d 1352, 1358 (Fed. Cir. 2001) ("District courts have wide latitude in how they conduct the proceedings before them, and there is nothing unique about claim construction that requires the court to proceed according to any particular protocol. As long as the trial court construes the claims to the extent necessary to determine whether the accused device infringes, the court may approach the task in any way that it deems best."), and construes the disputed claims as set forth below.

II. LEGAL BACKGROUND

A. Key Patent Concepts

A patent must "describe the exact scope of an invention and its manufacture to secure to the patentee all to which he is entitled and to apprise the public of what is still open to them." *See Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996). A patent application must contain a "specification" and at least one drawing. 35 U.S.C. § 111. There are two distinct parts of a patent specification. The first is a detailed "written description of the invention and of the manner and process of making and using it," set forth "in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same." 35 U.S.C. § 112(a). The written description also "shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention." *Id.* Second, a patent "specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the

applicant regards as his invention." 35 U.S.C. § 112(b). The claims define the scope of a patent grant, *Markman*, 517 U.S. at 372, but "do not set forth the invention in all of the detail required by the written description." *Lava Trading, Inc. v. Sonic Trading Mgmt., LLC*, No. 03 CIV. 842 (TPG), 2004 WL 1145833, at *3 (S.D.N.Y. May 20, 2004).

Consistent with the "best mode" requirement of 35 U.S.C. § 112, patents disclose "embodiments" and "preferred embodiments" of the claimed invention, the purposes of which are "to provide a disclosure to the public of [the inventor's] best mode of carrying out the invention when the applications were filed." *Constr. Tech., Inc. v. Cybermation, Inc*., 965 F. Supp. 416, 431 (S.D.N.Y. 1997). Such a disclosure is included for the benefit of the public, rather than to limit the scope of the invention. *Id*.; *see also Martin v. Barber*, 755 F.2d 1564, 1567 (Fed. Cir. 1985) (explaining that "[i]nfringement, either literal or by equivalence, is determined by comparing the accused device with the claims in suit, not with a preferred or commercial embodiment of the patentee's claimed invention.").

B. Utility Patent Claim Construction

Claim construction is a matter of law, reserved entirely for the Court. *See Markman*, 517 U.S. at 372; *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Terms contained in claims are "generally given their ordinary and customary meaning." *Vitronics*, 90 F.3d at 1582. In determining the proper construction of a claim, a court begins with the intrinsic evidence of record, consisting of the claim language, the patent specification, and, if in evidence, the prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313-14 (Fed. Cir. 2005); *see also Vitronics*, 90 F.3d at 1582. "A claim term used in multiple claims should be construed consistently . . . ." *Inverness Med. Switzerland GmbH v. Princeton Biomeditech Corp.*, 309 F.3d 1365, 1371 (Fed. Cir. 2002).

"The appropriate starting point . . . is always with the language of the asserted claim itself." *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Phillips*, 415 F.3d at 1313. "There are only two exceptions

to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

"Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Phillips*, 415 F.3d at 1313. "Claims speak to those skilled in the art," but "[w]hen the meaning of words in a claim is in dispute, the specification and prosecution history can provide relevant information about the scope and meaning of the claim." *Electro Med. Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994) (citations omitted). "[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Vitronics*, 90 F.3d at 1582. "However, claims are not to be interpreted by adding limitations appearing only in the specification." *Electro Med.*, 34 F.3d at 1054. "Thus, although the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." *Id.* Conversely, "where [ ] the claim language is unambiguous, [the Federal Circuit has] construed the claims to exclude all disclosed embodiments." *Lucent Techs., Inc. v. Gateway, Inc.*, 525 F.3d 1200, 1215-16 (Fed. Cir. 2008). "[T]he description may act as a sort of dictionary, which explains the invention and may define terms used in the claims," and the "patentee is free to be his own lexicographer," but "any special definition given to a word must be clearly defined in the specification." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979-80 (Fed. Cir. 1995).

On the other hand, it is a fundamental rule that "claims must be construed so as to be consistent with the specification, of which they are a part." *Merck & Co. v. Teva Pharm. USA, Inc.*, 347 F.3d 1367, 1371 (Fed. Cir. 2003); *Phillips*, 415 F.3d at 1316. "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Renishaw PLC v. Marposs Societ' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

Finally, the court may consider the prosecution history of the patent, if in evidence. *Markman*, 52 F.3d at 980. The prosecution history may "inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Phillips*, 415 F.3d at 1317; *see also Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005) ("The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution.") (internal quotations omitted).

In most situations, analysis of this intrinsic evidence alone will resolve claim construction disputes. *See Vitronics*, 90 F.3d at 1583. However, "it is entirely appropriate . . . for a court to consult trustworthy extrinsic evidence to ensure that the claim construction it is tending to from the patent file is not inconsistent with clearly expressed, plainly apposite, and widely held understandings in the pertinent technical field." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309 (Fed. Cir. 1999). Extrinsic evidence "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman*, 52 F.3d at 980. All extrinsic evidence should be evaluated in light of the intrinsic evidence, *Phillips*, 415 F.3d at 1319, and courts should not rely on extrinsic evidence in claim construction to contradict the meaning of claims discernible from examination of the claims, the written description, and the prosecution history. *Pitney Bowes*, 182 F.3d at 1308. While extrinsic evidence may guide the meaning of a claim term, such evidence is less reliable than intrinsic evidence. *Phillips*, 415 F.3d at 1318-19.

C. Design Patents

"A design patent protects the nonfunctional aspects of an ornamental design as shown in the patent." *Elmer v. ICC Fabricating, Inc.*, 67 F.3d 1571, 1577 (Fed. Cir. 1995). "[T]rial courts have a duty to conduct claim construction in design patent cases, as in utility patent cases . . . ." *Egyptian Goddess, Inc. v. Swisa, Inc.*, 543 F.3d 665, 679 (Fed. Cir. 2008) (*en banc*). "[D]esign patents typically are claimed as shown in drawings, and that claim construction is adapted accordingly." *Id.* (internal quotations omitted). This is so because "[w]ords cannot easily describe

ornamental designs." *Sport Dimension, Inc. v. Coleman Co.*, 820 F.3d 1316, 1320 (Fed. Cir. 2016). As such, the Federal Circuit has "cautioned . . . trial courts about excessive reliance on a detailed verbal description in a design infringement case." *Crocs, Inc. v. Int'l Trade Comm'n*, 598 F.3d 1294, 1302 (Fed. Cir. 2010). "[D]etailed verbal claim constructions increase the risk of placing undue emphasis on particular features of the design and the risk that a finder of fact will focus on each individual described feature in the verbal description rather than on the design as a whole." *Sport Dimension, Inc.*, 820 F.3d at 1320 (internal quotations omitted); *see also Egyptian Goddess, Inc.*, 543 F.3d at 679 ("Given the recognized difficulties entailed in trying to describe a design in words, the preferable course ordinarily will be for a district court not to attempt to 'construe' a design patent claim by providing a detailed verbal description of the claimed design."); *Crocs, Inc.*, 598 F.3d at 1302-03 ("Design patents are typically claimed as shown in drawings, and claim construction must [therefore] be adapted to a pictorial setting.").

Nevertheless, "a design patent cannot claim a purely functional design—a design patent is invalid if its overall appearance is 'dictated by' its function." *Sport Dimension*, 820 F.3d at 1320 (quoting *Egyptian Goddess, Inc.*, 543 F.3d at 668). But as long as the design is "not primarily functional, the design claim is not invalid, even if certain elements have functional purposes." *Ethicon Endo–Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1333 (Fed. Cir. 2015). That is because a design patent's claim protects an article of manufacture, which "necessarily serves a utilitarian purpose." *L.A. Gear, Inc. v. Thom McAn Shoe Co.*, 988 F.2d 1117, 1123 (Fed. Cir. 1993). A design may contain both functional and ornamental elements, even though the scope of a design patent claim "must be limited to the ornamental aspects of the design." *Ethicon Endo–Surgery*, 796 F.3d at 1333.

"Where a design contains both functional and non-functional elements, the scope of the claim must be construed in order to identify the non-functional aspects of the design as shown in the patent." *OddzOn Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1405 (Fed. Cir. 1997). "[A] trial court can usefully guide the finder of fact by . . . . distinguishing between those features of the claimed design that are ornamental and those that are purely functional. *Egyptian Goddess, Inc.*, 543 F.3d at 680. When assessing whether a feature is functional, courts may consider the

following factors: (1) whether the protected design represents the best design; (2) whether alternative designs would adversely affect the utility of the specified article; (3) whether there are any concomitant utility patents; (4) whether the advertising touts particular features of the design as having specific utility; (5) and whether there are any elements in the design or an overall appearance clearly not dictated by function. *Sport Dimension, Inc.*, 820 F.3d at 1322 (quoting *PHG Techs., LLC v. St. John Cos.*, 469 F.3d 1361, 1366 (Fed. Cir. 2006)) ("Although we introduced these factors to assist courts in determining whether a claimed design was dictated by function and thus invalid, they may serve as a useful guide for claim construction functionality as well.").

III. DISCUSSION

A. Claim Construction of Utility Patent '543

The three pieces of language the parties seek construction of are drawn from Claims 1 and 4 of the '543 Patent. The Court provides the entirety of Claim 1 herein for reference, along with the most pertinent portions of Claim 4.

Claim 1 recites:

> 1. A vertical tank comprising:
> a tank having a cylindrical upper section having a radius and a conical lower section extending from the cylindrical upper section to a bottom:
> an outlet in the conical lower section and centered at the bottom of the conical lower section: and
> a lower manifold having
> a lower vertical conduit in fluid communication with the outlet of the tank with a first end and an opposing second end, the first end connected to the outlet such that the opposing second end extends downward directly beneath the outlet,
> a plurality of lower horizontal conduits directly connected to and extending away from the second end of the lower vertical conduit, each having a length and each terminating in an end and in fluid communication with the lower vertical conduit, wherein the length is less than the radius,
> a lower vertical conduit valve connected to and in fluid communication with the lower vertical conduit, and
> a plurality of lower horizontal conduit valves corresponding in number the plurality of lower horizontal conduits wherein each

lower horizontal conduit valve is connected to and in fluid communication with one of the lower horizontal conduits

an upper manifold having

a central conduit surrounding a perimeter of the conical lower section;

a plurality of upper horizontal conduits connected to and extending away from the central conduit, terminating in an end and in fluid communication with the central conduit;

an upper vertical conduit with a first end connected to and in fluid communication the central conduit and a second end connected to and in fluid communication with an inlet in the cylindrical upper section of the tank;

an upper vertical conduit valve in fluid communication with the upper vertical conduit and located on the upper vertical conduit between the central conduit and the inlet of the tank; and

a plurality of upper horizontal conduit valves in fluid communication with the plurality of upper horizontal conduits, wherein the plurality of upper horizontal conduit valves corresponds in number to the plurality of upper horizontal conduits and wherein each upper horizontal conduit valve is connected to one of the upper horizontal conduits.

'543 Patent, col. 10-11.

Claim 4 recites:

4. A vertical tank array comprising:

a first vertical lank and a second vertical tank, the first vertical tank and the second vertical tank each having

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a lower manifold having

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a plurality of lower horizontal conduits connected to and extending away from the second end of the lower vertical conduit, each terminating in an end and in fluid communication with the lower vertical conduit;

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an upper manifold having

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an upper vertical conduit with a first end connected to and in fluid communication with the central conduit and a second end connected to and in fluid communication with an inlet in the cylindrical upper section of the tank,

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a flexible tubing connecting the upper manifold of the first vertical tank to the upper manifold of the second vertical tank such that upper manifolds of the first vertical tank and the second vertical tank are in fluid communication with one another through the flexible tubing.

'543 Patent, col. 11.

i. Construction of "an upper vertical conduit with a first end <u>connected to and in fluid communication</u> with the central conduit," in relation to the upper manifold

Baker argues that, as used in Claim 1 and 4's description of the upper manifold, the phrase "connected to and in fluid communication with" means that the upper vertical conduit is directly connected to the central conduit. ECF No. 22, #1. VTI argues that the phrase means that the upper vertical conduit is directly or indirectly connected to the central conduit. *Id*.

A threshold issue of contention is whether the drawings in the '543 patent disclose only direct connections. Figure 3 is a side perspective view of an embodiment of a vertical tank with a lower manifold and an "upper multi-path manifold." '543 Patent, col. 3:12-14.

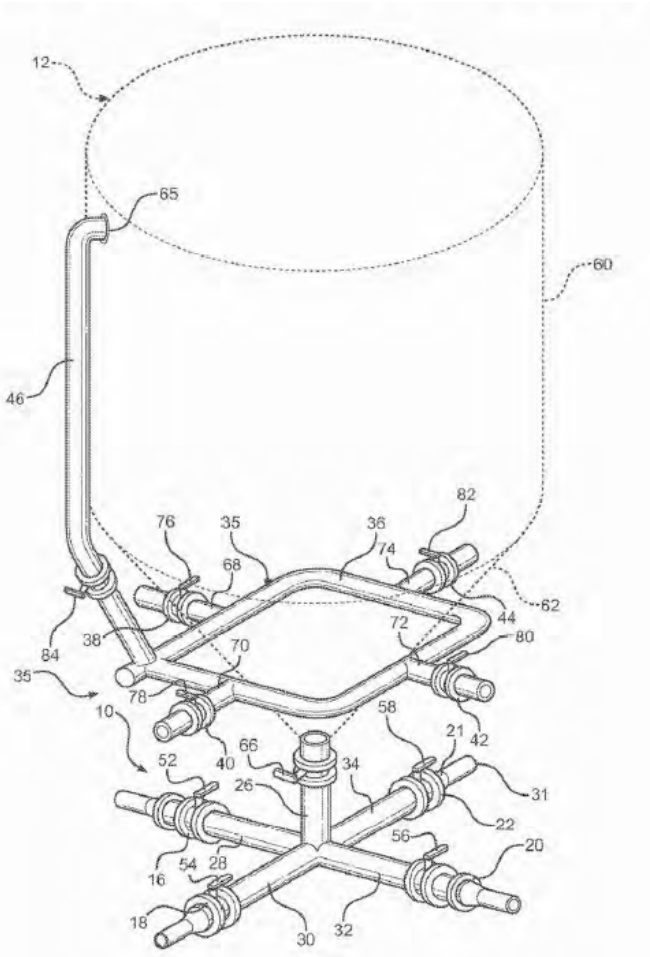

FIG. 3

The "multi-path upper manifold," generally indicated as #35 in Figure 3, is described as having a "central conduit **36** [that] is also in fluid communication with an upper vertical conduit **46**, which extends from the central conduit **36**." *See* '543 Patent, col. 5:38-40.

Figure 4 shows a side elevation view of the vertical tank shown in Figure 3. *See* '543 Patent, col. 3:15-16.

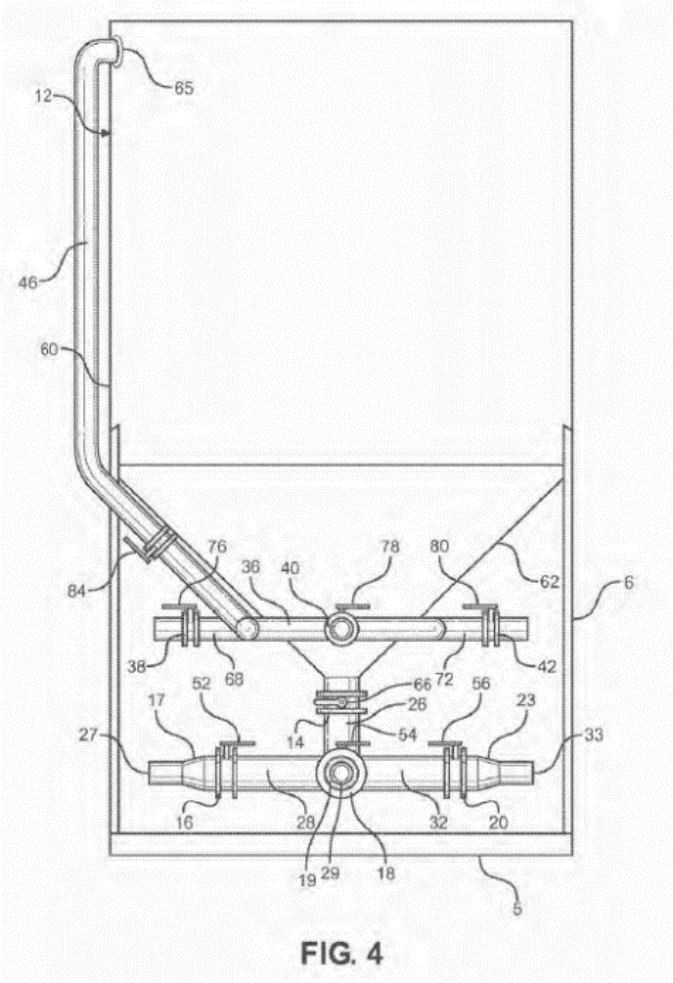

FIG. 4

The '543 Patent describes Figure 4 as showing an "upper vertical conduit valve **84** [that] is in fluid communication with the upper vertical conduit **46** and can be opened and closed to control the flow of material from the central conduit **36** through the upper vertical conduit and into the interior of the vertical tank **12**." *See* '543 Patent, col. 5:46-50. The parties do not dispute that these figures, and in particular Figure 3, disclose a direct connection between the central conduit and the upper vertical conduit. *See* ECF No. 27 at 12 (VTI indicating the Figure 3 shows a "direct point of connection"); ECF No. 28 at 19.

VTI relies instead on Figure 9, which is "a perspective view of a tank array of vertical tanks connected together with flexible tubing at the upper manifold and the lower manifold." *See* '543 Patent, col. 3:60-62.

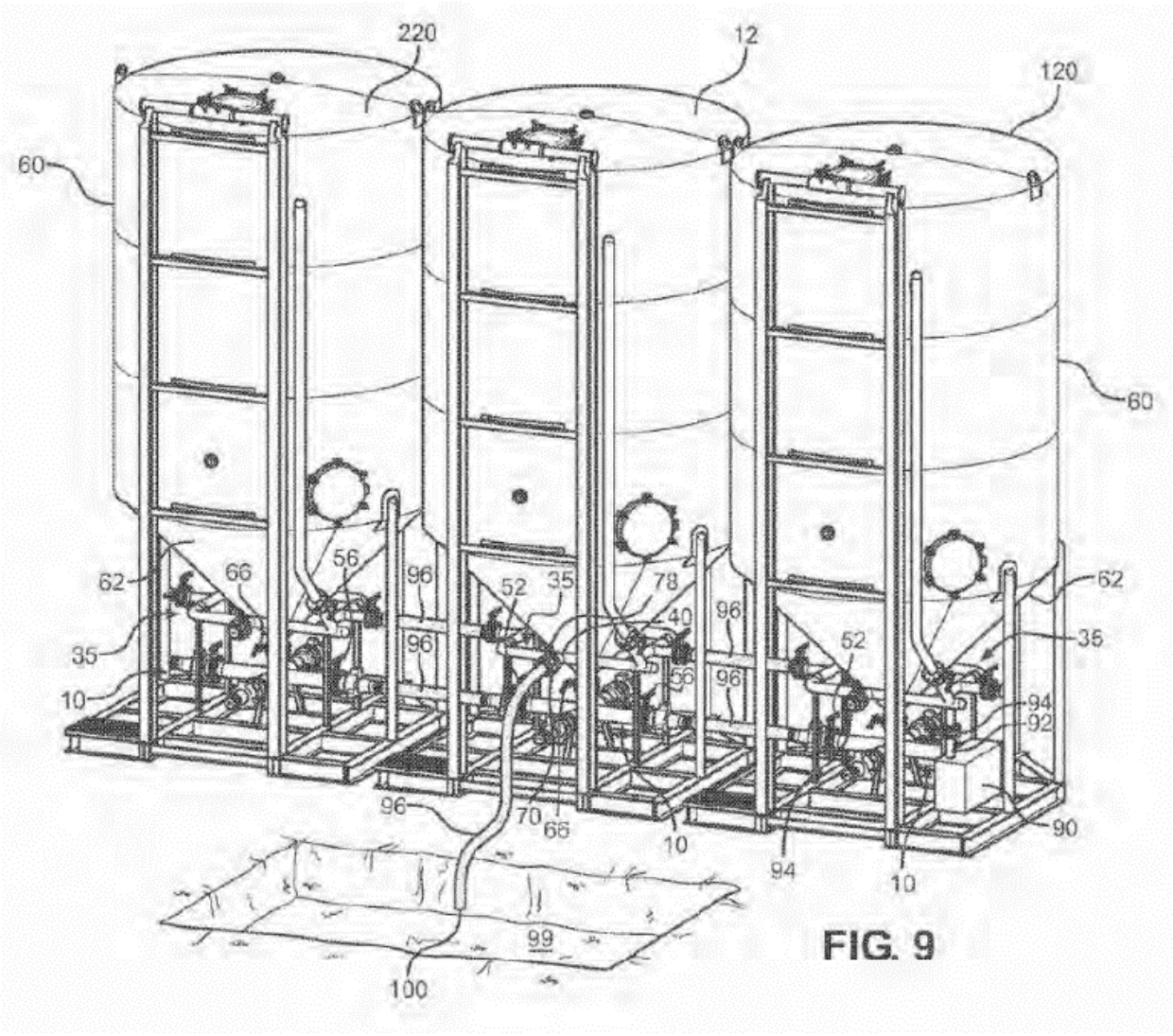

FIG. 9

When viewed at a high level of magnification, the upper manifold arguably reveals a slightly different arrangement than shown in Figures 3 and 4.

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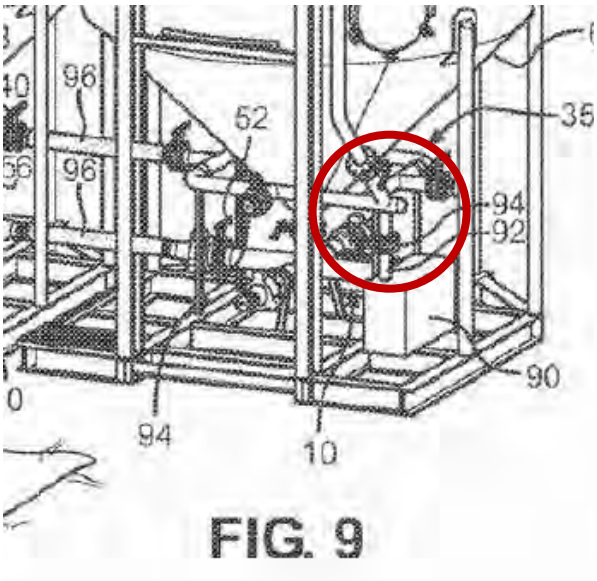
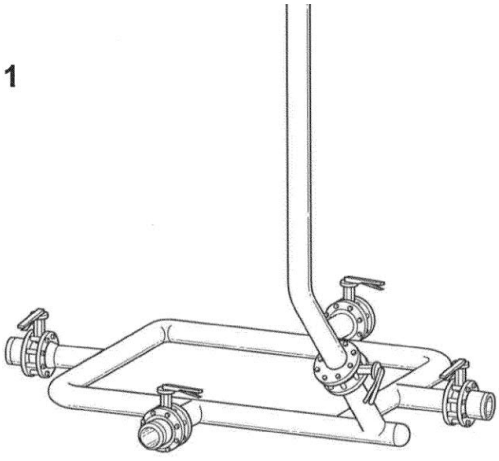


FIG. 9

(Red circle added for emphasis.) VTI argues that the upper manifold in Figure 9 displays an indirect connection between the central conduit (i.e., the square-shaped fixture that wraps around the conical section of the tank) and the upper vertical conduit. ECF No. 27 at 12. Although it is difficult to see, the drawing in Figure 9 shows an upper vertical conduit that is offset from the roughly square central conduit. This contrasts with the drawing from Figure 3, which shows the upper vertical conduit in alignment with the square central conduit.

Clarification of the arrangement of the parts shown in Figure 9 can be found in Figures 1 and 6 from the '843 Design Patent, ECF No. 27-8, which clearly show the upper vertical conduit offset from the square-shaped central conduit.

FIG. 1



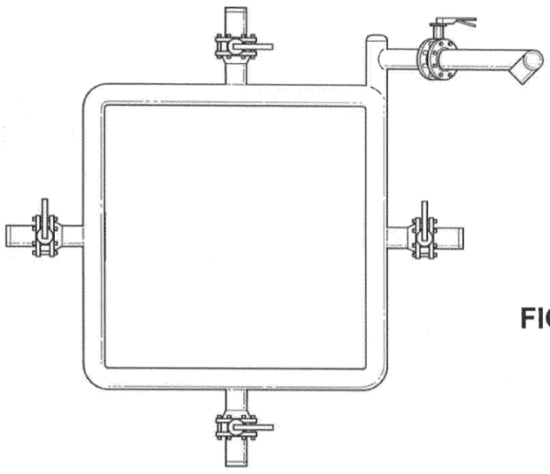


FIG. 6

While these drawings from the '843 Design Patent are extrinsic evidence in relation to the '543 Patent, the Court may nonetheless consider extrinsic evidence where not inconsistent with intrinsic material. *See Becton, Dickinson & Co. v. Inverness Med. Tech., Inc.*, 176 F. Supp. 2d 258, 270 (D. Del. 2001) (information from prosecution history of another patent used as extrinsic evidence to interpret patent in dispute); *see generally Pitney Bowes*, 182 F.3d at 1308.[1] The Court concludes for purposes of claim construction that the upper conduit depicted in Figure 9 of the '543 Patent is intended to be the same design as that in Figure 1 of the '843 Patent and therefore that Figure 1 of the '843 Patent is useful in interpreting Figure 9 of the '542 Patent.

The idea that this arrangement depicts an "indirect" connection finds support elsewhere in the record. Plaintiff's expert, Michael Morgenthaler, attests that a person of ordinary skill in the relevant art would perceive that the drawings in the '843 Patent depict a central conduit connected to an upper vertical conduit with a specific fitting, known as a "Target 90," which serves a particular purpose in the industry, namely to protect against wear from abrasive solids found in drilling fluids. ECF No. 30-1, Declaration of Michael Morgenthaler ("Morgenthaler Decl."), ¶ 7. Baker advances no response to this assertion by Morgenthaler. Even if, *arguendo*, someone skilled in the art would consider this arrangement of plumbing parts (a central conduit connected to upper vertical conduit by way of a Target 90 fitting), to be so close in proximity as to amount to a direct connection, this still is not dispositive of the construction of this claim language, because, even if the specifications "indicate that certain embodiments are preferred," e.g., that depicted in Figure 9 of the '543 Patent, "particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." *Electro Med.*, 34 F.3d at 1054.

With this in mind, the Court turns to construction of the claim language. "The appropriate starting point . . . is always with the language of the asserted claim itself." *Comark*, 156 F.3d at 1186. "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the

[1] The Court finds no support for Baker's assertion, *see* ECF No. 34 at 2, that it is inherently improper to consider the design patent unless it is expressly incorporated into the utility patent.

effective filing date of the patent application." *Phillips*, 415 F.3d at 1312. VTI argues that the ordinary meaning of "connected to" encompasses indirect linkages. Relatedly, VTI argues that nothing in the specification specifically limits the term "connected to" to only direct connections. ECF No. 27 at 12. For example, the term "connected to" is used to refer to the connection of one tank manifold to another tank manifold in an array via flexible tubing:

> The tanks can be connected to one another with flexible tubing between the upper horizontal conduits of the upper manifold and the lower horizontal conduits of the lower manifold in order to form a tank array.

'543 Patent, col. 2: 58-61; *see also* '543 Patent, Col 6, 58-65 ("FIG. 7 is a side view of a first tank **12**, a second tank **120** and a third tank **220** all of which are connected to one another by way of flexible tubing **96** between the upper manifolds **35** of each thank and by way of flexible tubing **96** between the lower manifolds **10** of each tank in order to create a tank array **300**. In addition, flexible tubing **96** connects the third tank **220** to a mud mixing station **97**. The mud mixing station **97** is in turn, connected to a drilling rig **98**."); '543 Patent, col. 7: 12-32 ("[In] FIG. 8a . . . [u]pper conduit **72** of the first tank **12** is connected to the mud mixing station **97** by way of a flexible tubing **96**. Lower conduit **32** is also connected to the mud mixing station **97** by way of a flexible tubing **96**. Upper conduit **68** of the first tank **12** is connected to upper conduit **72** of the second tank **120** by way of a flexible tubing **96**. Similarly, lower horizontal conduit **28** of the first tank is connected to the lower horizontal conduit **32** of the second tank **120** by way of flexible tubing **96**. Once so connected, the upper manifolds **35** of both the first tank **12** and second tank **120** are each in fluid communication with the mud mixing station **97** and the lower manifolds **10** of both the first tank **12** and second tank **120** are each in fluid communication with the mud mixing station."); *cf* '543 Patent, col. 3, 60-63 ("FIG. 9 is a perspective view of a tank array of vertical tanks connected together with flexible tubing at the upper manifold and the lower manifold."). Relatedly, the term "connected to" is used to describe the joining of a vertical tank to a base via a frame:

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> FIG. 2 shows the device of FIG 1 from a side elevation view, with some of the various components described above with respect to FIG. 2 visible. In addition, Tank **12** is shown with solid lines and is also shown suspended over a base **5** and connected to base **5** with a frame **6**.

'543 Patent, col. 4: 60-64. These examples demonstrate usage of the term "connected to" to refer to the joining of two parts by way of at least one other part, the exact scenario Baker asserts amounts to an indirect connection.

As additional support for its interpretation of "connected to" as including indirect connections, VTI cites *Douglas Dynamics, LLC v. Buyers Prod. Co.*, 717 F.3d 1336, 1342 (Fed. Cir. 2013). The disputed patent in *Douglas* concerned assemblies for mounting snowplows on the front end of a truck. *Id*. at 1339. The preferred embodiment depicted in the patent discloses an assembly in which the snowplow blade is fixed to an "A-frame," which in turn connects to a "lift frame via a chain and a mounting plate." *Id*. This assembly, in turn, can be attached to the mounting frame, which itself can be mounted behind the front bumper on a truck. *Id*. The district court construed the phrase "wherein the A-frame and the support frame are connected to the mounting fame" to require that the "A-frame and the support frame each be directly connected to the mounting frame." *Id*. at 1341 (emphasis added) (citing *Douglas Dynamics, LLC v. Buyers Prods. Co*., 747 F. Supp. 2d 1063, 1093 (W.D. Wis. 2010)). More specifically, the district court held that "the invention described in claim 45 requires that the A-frame and the mounting frame each have structures directly attached to them in some manner, such as through welding, that serve as connection points between the two frames." *Id*. (*citing Douglas*, 747 F. Supp. 2d at 1093).

The Federal Circuit reversed, finding error in construing the term "connected to" to require a direct connection between the A-frame and the mounting frame, reasoning that "[t]he plain language of the claim counsels against this narrow interpretation." *Douglas*, 717 F.3d 1342. First, albeit without much discussion, the Federal Circuit held that "[t]he ordinary meaning of 'connected to' encompasses indirect linkages." *Id*. In addition, the Federal Circuit pointed out that "the specification uses variations of the term 'connect' to describe indirect connections. For example, the specification states that the snowplow blade 'is connectable to the mounting frame .

. . through an A-frame.'" *Id*. (internal citations omitted). This is much like the various uses of the term "connected to" in the specification in the '543 Patent, as quoted above.

The Federal Circuit in *Douglas* emphasized that the district court's construction would have excluded a preferred embodiment of the invention, one that clearly depicted attachment of the lift frame to the mounting frame via a third part. *Id*. at 1342-43. Here, while one disclosed embodiment clearly depicts a direct connection, another depicts a connection that Defendants label "indirect," so in this way the '543 Patent is at least arguably like the patent at issue in *Douglas*.

In addition, the *Douglas* panel rejected an argument that its construction rendered certain claim language superfluous. Specifically, the language in question recites "a support frame connected to the A-frame, and wherein the A-frame *and* the support frame are connected to the mounting frame." *Id*. at 1343 (emphasis added by Federal Circuit). The district court reasoned that it would have been "redundant to state that both the 'A-frame and the support frame are connected to the mounting frame,' unless separate, direct connections were intended." *Id*. The Federal Circuit disagreed, noting that the claim in question explained that the arrangement was designed to permit "pivotable movement of the A-frame about a generally horizontally extending pivot axis and for removal of the A-frame and the support frame as a unit so as to leave the mounting frame on the vehicle and behind the bumper." *Id*. Nothing in this description required a direct connection; rather, the requirements could be met by "connecting either the A-frame or the support frame, or both, to the mounting frame." *Id*. Therefore, despite the fact that some aspect of the disputed language could have been interpreted as superfluous unless "connected to" was construed as requiring a direct connection, the *Douglas* panel looked beyond this potential superfluousness to consider how that language was used in context.

Here, Baker maintains that the use of the term "in fluid communication" in Claims 1 and 4 ("an upper vertical conduit with a first end connected to and in fluid communication with the central conduit") necessarily requires a direct or indirect connection. In other words, any two things that are "in fluid communication" with one another must be connected either directly or indirectly. Declaration of Glen Stevick ("Stevick Decl."), ECF No. 28-6, ¶ 39. Therefore, given

the presence of the "in fluid communication" language alongside "connected to," "connected to" would add nothing if interpreted to encompass both direct and indirect connections. *Id*. VTI disagrees, arguing that "in fluid communication with" includes more than just direct and indirect connections because "the outlet of a faucet is in fluid communication with the drain of the sink notwithstanding that there is no direct or indirect connection between the two." ECF No. 30 at 5. Therefore, according to VTI, "in fluid communication" is not superfluous when used in concert with "connected to." VTI's expansive definition of "in fluid communication with" is not supported by any record evidence, so is not particularly persuasive.

The Court finds *Douglas* helpful in resolving the parties' competing arguments on this issue. As mentioned, *Douglas* reiterates that claim language should always be construed in context. Here, language in the specification suggests that a construction of "connected to" that encompasses indirect connections does not necessarily render the term "in fluid communication" superfluous. As mentioned elsewhere herein, the '543 Patent states:

> [In] FIG. 8a . . . [u]pper conduit **72** of the first tank **12** is connected to the mud mixing station **97** by way of a flexible tubing **96**. Lower conduit **32** is also connected to the mud mixing station **97** by way of a flexible tubing **96**. Upper conduit **68** of the first tank **12** is connected to upper conduit **72** of the second tank **120** by way of a flexible tubing **96**. Similarly. lower horizontal conduit **28** of the first tank is connected to the lower horizontal conduit **32** of the second tank **120** by way of flexible tubing **96**. Once so connected, the upper manifolds **35** of both the first tank **12** and second tank **120** are each in fluid communication with the mud mixing station **97** and the lower manifolds **10** of both the first tank **12** and second tank **120** are each in fluid communication with the mud mixing station.

543 Patent, col. 7: 12-32. In the above passage, the term "connected to" is used to describe joining two tanks (or a tank and a mud mixing station) together using a third part, namely, flexible tubing. Once "so connected" the tanks and the mud mixing station are "in fluid communication" with one another. The Court reads the use of the term "in fluid communication" here as a means by which the inventor has attempted to make clear that the connections in question are designed to allow fluid to flow from a single source through various parts of a tank array.

In contrast, when the term "connected to" is used to describe the joining of a vertical tank to a base via a frame, the term "in fluid communication" does not come into play. '543 Patent, col. 4: 60-64 ("FIG. 2 shows the device of FIG 1 from a side elevation view, with some of the various components described above with respect to FIG. 2 visible. In addition, Tank 12 is shown with solid lines and is also shown suspended over a base 5 and connected to base 5 with a frame 6."). Therefore, when viewed in the context of the entire '543 Patent, "in fluid communication" is a term used to identify those parts of the invention that are designed to facilitate the flow of fluids, as opposed to those parts that are structural.

Baker next points out that the specification repeatedly describes the vertical conduit as "extend[ing] from" the central conduit, not from some intermediate conduit or part. ECF No. 28 at 18; '543 Patent, col. 5:38-40 ("In an embodiment, central conduit **36** is also in fluid communication with an upper vertical conduit **46**, which extends from the central conduit **36**."); 543 Patent, col. 2:43-45 ("An upper vertical conduit may be provided in fluid communication with the central conduit and extending vertically therefrom.").

Even if "extending from" might imply some kind of "direct connection," the Court declines to read these words, found only in the specification, as imposing a limit on the scope of Claims 1 and 4. As mentioned "[w]hen the meaning of words in a claim is in dispute, the specification . . . can provide relevant information about the scope and meaning of the claim." *Electro Med.*, 34 F.3d at 1054. While "the specification is always highly relevant to the claim construction analysis" and is often "the single best guide to the meaning of a disputed term," *Vitronics*, 90 F.3d at 1582, "claims are not to be interpreted by adding limitations appearing only in the specification." *Electro Med.*, 34 F.3d at 1054. "Thus, although the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." *Id.* The "extends from" language is not present in either Claim 1 or Claim 4's description of the connection between the upper vertical conduit and the central conduit. '543 Patent, col. 10:56-59 ("an upper vertical conduit with a first end connected to and in fluid communication with the central conduit and a second end connected to and in fluid

communication with an inlet in the cylindrical upper section of the tank"); '543 Patent, col. 11:49-53 (same). Therefore, the Court will not import into the claims any limitation suggested by the use of the phrase "extends from."

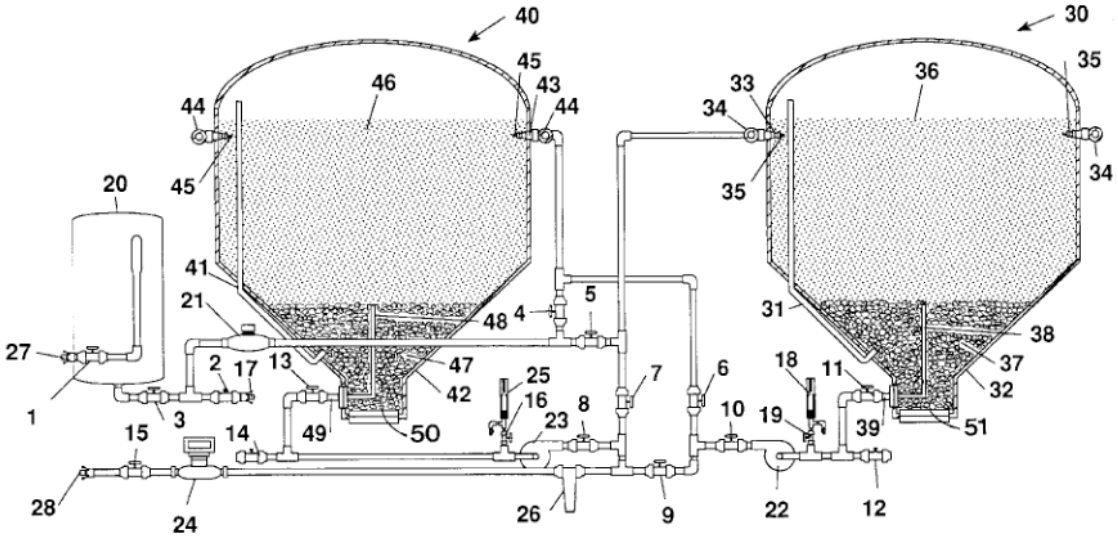
The parties discuss at length the fact that Claim 1 uses the phrase "directly connected to" in the context of describing the lower manifold, but omits similar language in connection with describing the connection between the upper central conduit and the upper vertical conduit. VTI maintains that claim phrases that include the term "directly" should be differentiated from those that omit the term. *See Phillips*, 415 F. 3d at 1314 ("[T]he context in which a term is used in the asserted claim can be highly instructive. To take a simple example, the claim in this case refers to 'steel baffles,' which strongly implies that the term "baffles" does not inherently mean objects made of steel."). This mode of interpretation is sometimes referenced as the "doctrine of claim differentiation," which is "based on the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." *Starhome GmbH v. AT & T Mobility LLC*, 743 F.3d 849, 857-58 (Fed. Cir. 2014).[2] "However, that presumption is not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history." *Seachange Int'l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1369 (Fed. Cir. 2005).

While a court must indulge a "heavy presumption" that claim terms carry their full ordinary and customary meaning, a court may constrict the ordinary meaning of a claim "if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment

[2] Plaintiff raises an issue with respect to the application of the doctrine of claim differentiation that requires some discussion. Some patents include both "independent" and "dependent" claims. A "dependent claim, by definition, is one embodiment of the independent claim on which it relies." *ABS Glob., Inc. v. Inguran*, LLC, 914 F.3d 1054, 1074 (7th Cir. 2019). Plaintiff points out that the doctrine of claim differentiation is "at its strongest" where the "limitation that is sought to be 'read into' an independent claim already appears in a dependent claim." *Liebel-Flarsheim Co. v. Medrad., Inc*. 358 F.3d 898, 910 (Fed. Cir. 2004). In practice, this means that "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Id.* Here, however, Plaintiff conceded that Claim 1 and Claim 4 are both independent claims. In other words, neither of the claims in which the disputed language appears are dependent on any other claim. Nonetheless, "there is still a presumption that two independent claims have different scope when different words or phrases are used in those claims." *Seachange Int'l, Inc. v. C-COR, Inc*., 413 F.3d 1361, 1369 (Fed. Cir. 2005).

as important to the invention. *CCS Fitness, Inc. v. Brunswick Corp*., 288 F.3d 1359, 1366-67 (Fed. Cir. 2002); *see also Teleflex, Inc. v. Ficosa N. Am. Corp*., 299 F.3d 1313, 1325-26 (Fed. Cir. 2002); *Omega Eng'g, Inc, v. Raytek Corp*., 334 F.3d 1314, 1323 (Fed. Cir. 2003). Statements made during prosecution may also affect the scope of the claims. *Omega*, 334 F.3d at 1323. Specifically, "a patentee may limit the meaning of a claim term by making a clear and unmistakable disavowal of scope during prosecution." *Purdue Pharma L.P. v. Endo Pharms., Inc*., 438 F.3d 1123, 1136 (Fed. Cir. 2006). A patentee could do so, for example, by clearly characterizing the invention in a way to try to overcome rejections based on prior art. *See, e.g., Microsoft Corp. v. Multi-Tech Sys., Inc*., 357 F.3d 1340, 1349 (Fed. Cir. 2004) (limiting the term "transmitting" to require direct transmission over telephone line because the patentee stated during prosecution that the invention transmits over a standard telephone line, thus disclaiming transmission over a packet-switched network); *Alloc v. Int'l Trade Comm'n*, 342 F.3d 1361, 1372 (Fed. Cir. 2003) (finding the patentee expressly disavowed floor paneling systems without "play" because the applicant cited the feature during prosecution to overcome prior art).

A brief review of the prosecution history reveals that Plaintiff attempted to disclaim the broader interpretation of "connected to" they advance here. Initially, the '543 Patent claimed "a lower manifold having a lower vertical conduit in fluid communication with the outlet of the tank with a first end and an opposing second end, the first end connected to outlet." ECF No. 27-3, Ex. B-294. The Examiner initially rejected this claim, among others, as being anticipated by U.S. Patent No. 6,468,481 issued to Anderson ("Anderson"). Specifically, the Examiner pointed to Figure 4 in the Anderson Patent (included below), which disclosed a lower manifold "having a lower vertical conduit (pipe between 11 and the right T junction) in fluid communication with the outlet of the tank with at first end and an opposing second end, the first end connected to outlet," as well as "a plurality of lower horizontal conduits (pipe between right T-junction and 12; pipe between left T-junction and 22) connected to and extending away from the second end of the lower vertical conduit, each terminating in an end and in fluid communication with the lower vertical conduit." ECF No. 27-3, Declaration of Matthew C. McCartney, Ex. B at 237.



VTI responded during patent prosecution by arguing, among other things, that Anderson did not anticipate VTI's design because, according to Anderson's Figure 4, "the pipe between left T-junction and component 22 is not connected to the end of the vertical pipe between right T-junction [and the elbow]." *Id.* at 224 (emphasis added). VTI's argument continues:

> Instead, left T-junction and right T-junction are separated by another horizontal pipe. In order to find the pipe between left T-junction and component 22 to be connected to the vertical pipe between right T-junction and the elbow, the Examiner must conflate left T-junction, right T-junction and the horizontal pipe between with the horizontal pipe between left T-junction and component 22. In making such a conflation, then the Examiner cannot distinguish between horizontal pipes as separate components. The Examiner cannot conflate various conduits and fittings from Anderson in a manner inconsistent with Applicant's teaching in order to find the plurality of lower horizontal conduits and connection to the lower vertical conduit required for anticipation. Therefore, the pipes relied on by Examiner cannot anticipate Applicant's lower horizontal conduits connection to the lower vertical conduit required for anticipation. Therefore, the pipes relied on by Examiner cannot anticipate Applicant's lower horizontal conduits and connection to the lower vertical conduit required for anticipation. Therefore, the pipes relied on by Examiner cannot anticipate Applicant's lower horizontal conduits.

Id. at 224-25 (emphasis added). In addition, VTI stated:

> [T]o expedite prosecution, and without conceding to the Examiner's positions, Applicant has amended independent claim 1 to include the limitation that lower horizontal conduit valves be connected to and in fluid communication with one of the lower horizontal conduits. Valve 19 shown in Anderson is connected to the left T-junction, which is then connected to

> a horizontal pipe, which is then connected to right T-junction, which is finally connected to the end of the pope Examiner contends is the lower vertical conduit. Thus, valve 19 as shown in Anderson is not connected to either the horizontal conduit (pipe between right T-junction and 12) or horizontal conduit (pipe between left T-junction and 22).

Id. at 225-26 (emphasis in original).

Without question VTI asserted that the term "connected to" means a direct connection. However, in order for the Court to find a prosecution history disclaimer, the patentee must have limited the meaning of a claim term by making a "clear and unmistakable disavowal" of claim scope during prosecution. Critically, Courts have refused to find a disclaimer was made where the purported disclaimer was rejected by the patent office. *See Abbott Labs. &, Surmodics, Inc. v. Church & Dwight Co*., No. 07 C 3428, 2008 WL 5387848, at *8 (N.D. Ill. Dec. 22, 2008) (refusing to apply prosecution history disclaimer in case where prosecution arguments were specifically rejected by patent office); *Southern Research Inst. v. Abon Pharm. LLC*, No. CIV.A. 12 4709 JEI, 2013 WL 4509925, at *7 (D.N.J. Aug. 22, 2013) (refusing to apply prosecution disclaimer where the patent Examiner "never once accepted the applicants' understanding of the claims and in fact explicitly rejected the applicants' position."); *Bausch & Lomb Inc. v. Vitamin Health, Inc*., No. 13-CV-6498T, 2015 WL 13574354, at *7 (W.D.N.Y. Jan. 15, 2015) (refusing to apply prosecution history disclaimer in case where prosecution arguments were specifically rejected by patent office); *Raleigh v. Tandy Corp*., No. C-95-2332-MHP, 1997 WL 26299, at *4 (N.D. Cal. Jan. 10, 1997) (finding attempt to distinguish claim before the Patent Office irrelevant because argument was rejected).

This is exactly what occurred here. The patent office did not accept VTI's contention that inclusion in VTI's claim of term "connected to" was enough on its own to distinguish VTI's claimed invention from that disclosed in Anderson. Instead, the Examiner continued to question VTI's invention in light of Anderson. ECF No. 27-3 at 194. In response, VTI later added the word "adjacently" preceding "connected to." *Id*. at 165 (claiming "a plurality of lower horizontal conduits adjacently connected to and extending away from the second end of the lower vertical conduit, each terminating in an end and in fluid communication with the lower vertical conduit"). However, the Examiner concluded that addition of the term adjacently was insufficient. *Id*. at 109

("The limitation of 'adjacent' is insufficient to overcome the prior art Anderson (US 6468481). Under broadest reasonable interpretation, the components are still spa[t]ially adjacent in the context of the entire assembly (FIG 4 of Anderson)."). Only after that did VTI agree to add the word "directly" before "connected to" in that claim. *Id*. at 76 (claiming "a plurality of lower horizontal conduits adjacently directly connected to and extending away from the second end of the lower vertical conduit, each having a length and each terminating in an end and in fluid communication with the lower vertical conduit, wherein the length is less than the radius"). In sum, the patent Examiner rejected VTI's attempts to distinguish its invention from Anderson's based on its argument that the relevant parts in Anderson were not "connected to" one another – an argument that, if accepted, would have tethered VTI to a definition of connected to that required direct connections. Instead VTI revised its claim regarding the lower manifold to include the word "direct." Therefore, prosecution disclaimer does not apply here.

Overall, the intrinsic evidence supports VTI's broader interpretation that "connected to" could mean "directly connected to" or "indirectly connected to." There are many supporting examples in the specification, including several instances in which the patent describes how one tank can be "connected to" another tank using flexible tubing, a use of the term "connected to" that indisputably allows an indirect connection between one tank and the other via that tubing. In light of the doctrine of claim differentiation and the general rule that a claim should be given "its broadest ordinary meaning consistent with the written description," *Int'l Rectifier Corp. v IXYS Corp*., 361 F.3d 1363, 1373 (Fed. Cir. 2004), the Court adopts VTI's suggested construction of the term "an upper vertical conduit with a first end connected to and in fluid communication with the central conduit," to mean that the upper vertical conduit is directly or indirectly connected to the central conduit.

ii. Claim 1 and 4: "upper vertical conduit"

Claims 1 and 4 describe "an upper vertical conduit with a first end connected to and in fluid communication with the central conduit and a second end connected to and in fluid communication with an inlet in the cylindrical upper section of the tank." VTI proposes that the term "upper vertical conduit" should be construed to mean "a conduit that extends upward." ECF

No. 22 at 2. Baker argues that the term should be construed to mean a conduit that "extends at least partially in a vertical direction." *Id*.

The Court agrees with VTI that the specific orientation and structure of the upper vertical conduit is not claimed in either Claim 1 or Claim 4 or described in the specification. VTI suggests that its construction (defining "upper vertical conduit" as "a conduit that extends upward") is aligned best with the intrinsic evidence, pointing out that the specification describes an embodiment, including "an upper vertical conduit **46**, which extends from the central conduit **36**," and more specifically that the "[u]pper vertical conduit **46** preferably extends upward to at or near the top of vertical tank **12** . . . ." '543 Patent, col. 5:38-43. More generally, the specification also explains that "[a]n upper vertical conduit may be provided in fluid communication with the central conduit and extending vertically therefrom." *Id.*, col. 2:43-45.

Baker suggests VTI's construction is vague and does not accurately describe the claimed vertical conduit shown in the figures, and therefore will lead to jury confusion. ECF No. 28 at 23. Instead, Baker argues that its construction (defining "upper vertical conduit" as a conduit that "extends at least partially in a vertical direction") "more accurately captures [an] important distinction" between the vertical conduit employed in Baker's accused device (which extends in a purely vertical direction from a horizontal conduit which in turn extends from the central conduit) and VTI's patented upper vertical conduit. *Id*. This is an improper line of argument in the context of claim construction and will be disregarded. *NeoMagic Corp. v. Trident Microsystems, Inc*., 287 F.3d 1062, 1074 (Fed. Cir. 2002) ("It is well settled that claims may not be construed by reference to the accused device."). A type of configuration Baker's construction would exclude is exactly the type included in Baker's device, one in which the upper vertical conduit includes a horizontal component between the central conduit and a conduit that extends upward. This is, in certain respects, an attempt to bootstrap into this claim construction the dispute over whether there must be a direct connection between the central conduit and the upper vertical conduit. The Court has already decided the latter and will not adopt a construction here that eviscerates that ruling.

In its opposition brief, Baker offers an alternative construction that would define an "upper vertical conduit" as one that "includes an angled portion at its lower end and extends

upward from the central conduit," in order to "make[] clear that the upper vertical conduit must include a non-vertical portion at its lower end." ECF No. 28 at 23. The problem with this construction is that it would improperly limit the scope of a claim term to that disclosed in a particular embodiment. Even though every figure in the specification discloses an upper vertical conduit with an angled lower portion, nothing in the claims themselves limits the claimed invention to such a design. *See Electro Med.*, 34 F.3d at 1054 ("[C]laims are not to be interpreted by adding limitations appearing only in the specification.").

Accordingly, the Court adopts VTI's proposed construction of "upper vertical conduit" to mean "a conduit that extends upwards."

iii. Claim 4: "a flexible tubing"

Claim 4 claims "[a] vertical tank array comprising," among other things, "a flexible tubing connecting the upper manifold of the first vertical tank to the upper manifold of the second vertical tank such that upper manifolds of the first vertical tank and the second vertical tank are in fluid communication with one another through the flexible tubing." '543 Patent, col. 11: 13, 62-67. VTI asserts that the phrase "a flexible tubing" is not in need of construction and should instead be given its ordinary meaning; alternatively, VTI proposes that "a flexible tubing" means, "[a] tube that is capable of being bent or flexed." ECF No. 22 at 2-3. Baker proposes the following construction: "A tube that is capable of bending easily without breaking." *Id.* (emphasis added). A definition of the disputed term is not found in the intrinsic evidence.

The parties offer dictionary definitions to support their respective constructions. In *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005), the Federal Circuit addressed the use of dictionaries in claim construction. The court highlighted two inherent problems with using dictionaries to interpret claim terms: (1) that dictionaries provide an expansive array of definitions for the same work and (2) that different dictionaries may contain different definitions for the same words. *Id.* at 1321. The court explained that "[i]n such circumstances, it is inevitable that the multiple dictionary definitions for a term will extend beyond the 'construction of the patent [that] is confirmed by the avowed understanding of the patentee, expressed by him, or on his behalf, when his application for the original patent was pending.'" *Id.* at 1321-22 (quoting *Goodyear*

Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227(1880)). The court nonetheless stated that judges are free to consult dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents. *Id.* at 1322–23.

VTI supports its construction with a definition from the American Heritage dictionary. The first definition of "flexible" provided therein is "[c]apable of being bent or flexed; pliable: a flexible hose." *Flexible, The American Heritage Dictionary of the English Language* (5th ed. 2019), available at https://ahdictionary.com/word/search.html?q=flexible (last visited May 19, 2019). Baker instead utilizes the Oxford English Dictionary, which defines "flexible" as "capable of bending easily without breaking." *Flexible, OED Online* (May 2019) available at https://en.oxforddictionaries.com/definition/flexible (last visited May 19, 2019). The Court finds neither definition more or less credible or applicable than the other, and, as such, that the definitions are not particularly helpful here.

Baker argues that addition of the term "easily" is supported by the prosecution history. Specifically, during prosecution, the Examiner rejected the claim requiring only "a tubing," based on the existence of prior art (the Anderson Patent) which in turn disclosed that all aspects of the piping system in that invention should "preferably [be] fabricated of use of polyvinylchloride [("PVC") pipe]." ECF No. 27-3, Ex. B at 240; Ex. C (Anderson Patent) at col 4:32-33. In response, VTI added the term "flexible" to the claim. *Id.* at B-215, B-228. The Examiner initially resisted this change, reasoning that the PVC tubing shown in Anderson the tubing "is seen to have at least some flexibility, as no material is capable of being completely rigid." ECF No. 27-3, Ex. B at 198. However, VTI pushed back, arguing that "[t]he Examiner offered no support for this assertion and indeed such an assertion would render the meaning of the words 'rigid' and 'flexible' as meaningless. There is no mention in the specification in Anderson that would suggest that any of the pipes are flexible." *Id.* at 181. The Examiner eventually backed off of this reasoning and accepted the Claims in dispute including the term "flexible."

VTI's addition of the term "flexible" was specifically designed to distinguish its tubing from Anderson's PVC pipe. But, this does not shed any light on whether the term flexible tubing

should be construed using the term "easily," as Baker suggests. To the extent Baker is suggesting that the only way "flexible tubing" can distinguish itself from PVC is to define "flexible tubing" as tubing that is "capable of bending easily without breaking," this suggestion finds no support in the record. The prosecution history does not support this. Even though the Examiner suggested that the PVC tubing in Anderson "is seen to have at least some flexibility, as no material is capable of being completely rigid," the Examiner backed away from this reasoning and eventually accepted VTI's claim regarding a device that used "flexible tubing." Nor is there any extrinsic evidence to support Baker's argument. Baker's expert attests that "PVC is not generally capable of bending easily without breaking," Stevick Decl. ¶ 48, but he does not affirmatively support the assertion that PVC pipe could ever be considered "flexible," in any respect. Baker's expert additionally asserts that "flexible tubes . . . that are capable of bending easily without breaking [] are routinely used in the oil and gas industry." *Id*. Even accepting this assertion in its entirety, this changes nothing, as it does not eliminate the possibility that tubes that are difficult to flex but nonetheless are "flexible" are also routinely used in the industry.

In fact, VTI's expert describes various real-world scenarios in which "tubing" used to join pieces of equipment in the oil field may have to be "flexed" using considerable force (e.g., through the use of a sledge hammer, torque wrench, or chain bender). Morgenthaler Decl., ¶ 9. He specifically states that "[a] person skilled in the art would recognize that tubing connections for tanks used for drill mud tank interconnections are rarely 'easily' bendable." *Id*. This evidence is undisputed and seriously undermines Baker's construction.[3]

In sum, while the prosecution history indicates that the patentee disclaimed an interpretation of the phrase "flexible tubing" that encompasses PVC tubing, this does not

[3] Morgenthaler also testified at his deposition that the term "flexible tubing" could encompass PVC Pipe. Deposition of Michael Morgenthaler ("Morgenthaler Depo.), ECF No. 34-2 at 88-89. Morgenthaler's testimony does suggest that he considers a wide range of pipe to be "flexible," even types of pipe that a layman would consider inflexible. *Id.* at 88. As mentioned, the Court finds that the prosecution history disclaims the possibility of PVC pipe falling within the claimed term "flexible tubing." Nonetheless, this does not wholly undermine the evidence Morgenthaler presents regarding the actual way practitioners connect tanks to one another in the field in a manner that occasionally employs considerable force. His declaration therefore still supports the proposition that tubing need not be "easily" flexible to function as "flexible" for purposes of the claimed invention. The fact that the prosecution history disclaims PVC pipe as a form of flexible tubing does not mean there are no other forms of tubing that are flexible but not easily flexible that may be employed within the scope of the claim language.

necessarily support Baker's construction. Baker's expert states that "PVC is not generally capable of bending easily without breaking," but Baker does not go so far as to assert that a PVC pipe is capable of being bent or flexed. In contrast, VTI's expert provided undisputed evidence that tubing that requires considerable force to flex is utilized in the field in this industry. Baker's proposed construction, therefore, may serve to limit the claimed invention beyond the use of PVC tubing in a way that is not consistent with the only evidence concerning the qualitative flexibility of tubing used in the field in the oil and gas industry. Additionally, the term "easily" is a relative term that itself may require interpretation in light of intrinsic evidence. *See, e.g.*, *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1360 (Fed. Cir. 2012) (stating that the relative term "easily" did not render claim indefinite where the specification and prosecution history provided physical characteristics that guide determination of meaning of the claim term, "easily washed off").The Court finds that the most appropriate definition of the disputed phrase "a flexible tubing" is a tube that is capable of being bent or flexed without breaking.

B. Claim Construction of the Design Patents

i. The '842 Patent (Lower Manifold)

The single claim of the '842 Patent, which is entitled "Lower Manifold," states: "The ornamental design for a lower manifold, as shown and described." ECF No. 27-6 at 2. Figure 1 provides a diagram of the claimed device.

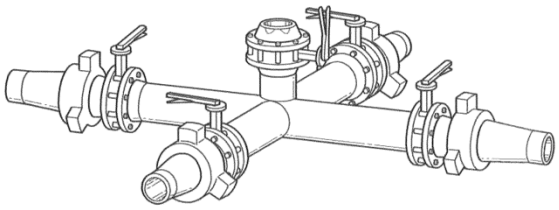
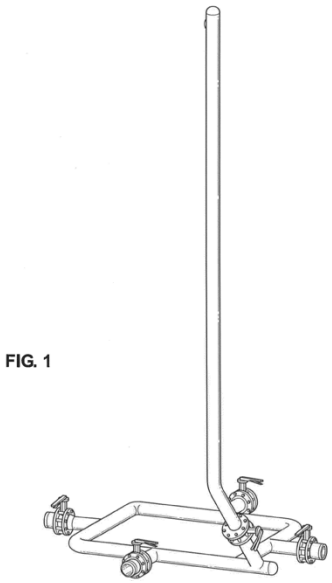


FIG. 1

Six other figures show the same manifold from different angles, none of which shed additional light on the question of claim construction.

ii. The ‘843 Patent (Upper Manifold)

The single claim of the ‘843 Patent, which is entitled “Upper Manifold,” states: “The ornamental design for a upper manifold, as shown and described.” ECF No. 27-8 at 2. Figure 1 provides a diagram of the claimed device.



Again, six other figures show the same manifold from different angles, none of which shed additional light on the question of claim construction.

iii. Invalidity v. Claim Construction

Baker initially contends that no construction of the design patents is necessary because they are primarily functional and therefore invalid. ECF No. 28 at 11-12. As a threshold matter, no motion regarding invalidity is presently before the Court, so the Court cannot and will not rule on the validity of the ‘842 or ‘843 Patents. A party may not “transition a claim construction argument into a summary judgment argument for invalidity due to functionality.” *ADC Telecommunications, Inc. v. Panduit Corp*., 200 F. Supp. 2d 1022, 1033 (D. Minn. 2002). What is before the Court is a request for claim construction. The two inquiries are distinct. Where a party properly has challenged the validity of a design patent, that patent may be found invalid if it is based on “primarily functional rather than ornamental designs.” *Ethicon*, 796 F.3d at 1328. A design patent may be deemed “not primarily functional” and therefore not invalid, even if certain elements have functional purposes. *Id*. at 1333. Nonetheless, in such cases, “[t]he scope of that

claim . . . must be limited to the ornamental aspects of the design, and does not extend to 'the broader general design concept." *Id*. (emphasis added).

As a result, given that the only motion before the Court is for claim construction, the task is to distinguish, if possible, those aspects of the design that are truly ornamental, as opposed to functional. The case examples offered in *Ethicon* are helpful to understanding this process.

> *Richardson [v. Stanley Works, Inc.*, 597 F.3d 1288 (Fed. Cir. 2010)], involved a claim to the ornamental design of a multi-function carpentry tool that combined a hammer with a stud climbing tool and a crowbar. [*Id*.] at 1290. There was no dispute that several individual elements of the claimed design had functional purposes. In particular, a portion of the hammer head was flat to effectively deliver force to a struck object, the handle of the tool was elongated to provide leverage, the crowbar was at the end of the handle to reach into narrow spaces, and a jaw was located on the opposite end of the hammer head to allow the device to be used as a climbing step. *Id*. at 1294. These elements—which composed the entirety of the multi-function tool—had utility that had been known and used in the art for more than a century, and were thus outside the scope of the design claim. *Id*. This did not mean, however, that the design claim had no scope. Rather, the claim was limited to the ornamental aspects of these functional elements. In particular, the scope of the claim encompassed, among other ornamental aspects, the shape of the hammer head, the diamond-shaped flare of the crowbar and the top of the jaw, the rounded neck, the undecorated handle, and the orientation of the crowbar relative to the head of the tool (which was not driven by functional considerations, unlike the orientation of the hammer head and crowbar at opposite ends of the handle). *Apple Inc. v. Samsung Elecs. Co*., 786 F.3d 983, 998 (Fed. Cir. 2015) (discussing *Richardson* and citing *Richardson v. Stanley Works, Inc*., 610 F. Supp. 2d 1046, 1050 (D. Ariz. 2009)). Thus, the design claim did not broadly protect a multi-function tool with a hammer, crowbar, handle, and claw, but only the specific ornamental aspects of that tool in the depicted configuration.
>
> Similarly, in *OddzOn [Prod., Inc. v. Just Toys, Inc*., 122 F.3d 1396, 1404 (Fed. Cir. 1997)], we limited the scope of a design claim to ornamental features of a football-shaped ball with a tail and fin structure, rejecting the patentee's argument that its design claim covered the broad general concept of a ball with a "rocket-like" appearance. 122 F.3d at 1405. We identified the "functional qualities" of the underlying article as its football shape combined with fins on a tail attached at one end of the ball, which added stability to the ball in the same manner as the tail and fins on darts or rockets. *Id*. Although the existence of a functional purpose for the football-shape, tail, and fin elements of the underlying article did not alone invalidate the design patent—as the claimed design also included some purely ornamental features—such functional aspects at least necessitated

> cabining the scope of the design claim in order to prevent the claim from encompassing the general design concept of a football with tails and fins. *Id*. ("[T]hese functional characteristics do not invalidate the design patent, but merely limit the scope of the protected subject matter."). Thus, we affirmed the construction of the district court, which removed the generalized football shape, tail, and fins from the scope of the claim, limiting the design claim to its purely ornamental features: a "slender, straight tailshaft" and "three fins symmetrically arranged around the tailshaft," each "gentl[y] curv[ing] up and outward [to] create[ ] a larger surface area at the end furthest from the ball" and "flar[ing] outwardly along the entire length of the tail-shaft" with the "fins seemingly protrud[ing] from the inside of the football." *Id*. at 1400.

Ethicon, 796 F.3d at 1333-34.

As mentioned, when assessing whether a feature is functional, courts may consider the following factors: (1) whether the protected design represents the best design; (2) whether alternative designs would adversely affect the utility of the specified article; (3) whether there are any concomitant utility patents; (4) whether the advertising touts particular features of the design as having specific utility; (5) and whether there are any elements in the design or an overall appearance clearly not dictated by function. *Sport Dimension, Inc.*, 820 F.3d at 1322 (quoting *PHG Techs.,* 469 F.3d at 1366) (factors may serve as a useful guide for claim construction functionality). With this in mind, the Court turns to the claim construction arguments and evidence presented the design patents.

iv. Claim Construction Arguments

VTI argues that the proper construction of the design patents would be to reference the figures as shown. For example, for the '842 Patent, the construction would be: The '842 Patent "claims the ornamental design of a horizontal conduit as shown in Figures 1-7." ECF No. 27 at 20. For the '843 Patent, VTI asserts the proper construction would be that the patent claims the "ornamental design of a vertical conduit as show in in Figures 1-7" as well as "horizontal conduits as shown in Figures 1-7." In the alternative, VTI proposes descriptive claim constructions. For the '842 Patent, VTI's proposed alternative construction is:

> The claimed design is a lower manifold with a vertical conduit with a valve connected on one end and four horizontal conduits perpendicularly connected to the opposite end. Each horizontal conduit is equally spaced from one another and located within the same plane. Each horizontal

> conduit terminates in a tapered end and has a valve located adjacent to the tapered end with a handle located at the top surface of the horizontal conduit.

ECF No. 30 at 9. For the '843 Patent, VTI's proposed alternative construction is:

> The claimed design is an upper manifold with a central conduit and an upper vertical conduit. The central conduit has four sides and is formed roughly into a square shape with one extended side which extends beyond the square shape, each side having a horizontal conduit connected thereto such that one horizontal conduit extends in an opposite direction from another horizontal conduit, and each horizontal conduit having a valve at approximately the mid-point of the horizontal conduit with a valve handle located at the top of the horizontal conduit. The vertical conduit has a vertical portion and an angled portion, the latter which has a valve and intersects the extended side of the central conduit outside of the square shape.

ECF No. 30 at 10.

Baker proposes more elaborate descriptive constructions that include an explanation of which elements Baker contends should be factored out of each design patent. For the '842 Patent, Baker's proposed construction is as follows:

> The horizontal conduits of the lower manifold are the same length and include a tapered portion at the end that is not connected to the lower vertical conduit. The horizontal conduits each also include a collar between a valve and the tapered portion. Each collar has rectangular protrusions evenly spaced circumferentially around the collar. The tapered portion of the horizontal conduits ends in a cylindrically-shaped nozzle.
>
> The shape, number, and arrangement of the lower horizontal conduits is functional and not ornamental. Among other things, they perform the function of drawing fluid from the outlet of the tank, through the lower vertical conduit, and out one or more horizontal conduits and allow multiple tanks to be in fluid communication with one another.
>
> Each valve, its associated flanges, nuts and bolts, and valve handle are functional and not ornamental. The function of the valve is to regulate the flow of a fluid within the horizontal conduit. The function of the flanges, nuts and bolts is to secure the valve within the horizontal conduit. The function of the handle is to turn the valve on and off.

For the '843 Patent, Baker proposes the following constructions for the upper vertical conduit:

> The vertical conduit of the upper manifold is not straight and includes a bend at its bottom portion generally conforming to the cone-shaped

> portion of the tank. The bent/angled portion of the vertical conduit includes a valve.
>
> The arrangement of the vertical conduit is functional and not ornamental because it is necessary for its operation, including performing the function of conveying fluid from an external source through the horizontal conduits, through the central conduit, through the vertical conduit, and to the top of the vertical tank for storage or cleaning.
>
> Each valve, its associated flanges, nuts and bolts, and valve handle are functional and not ornamental. The function of the valve is to regulate the flow of a fluid within the horizontal conduit. The function of the flanges, nuts and bolts is to secure the valve within the horizontal conduit. The function of the handle is to turn the valve on and off.

Baker proposes the following construction for the '843 Patent's upper horizontal conduits:

> The upper manifold's four horizontal conduits are the same length and are connected to the central conduit. Each includes a valve positioned at a mid-point of its length.
>
> The shape, number, and arrangement of the horizontal conduits are functional because it is necessary for its operation, including performing the function of conveying fluid from an external source, through the horizontal conduits, through the central conduit, through the vertical conduit, and to the top of the vertical tank for storage or cleaning. Each valve, its associated flanges, nuts and bolts, and valve handle are functional and not ornamental.
>
> The function of the valve is to regulate the flow of a fluid within the horizontal conduit. The function of the flanges, nuts and bolts is to secure the valve within the horizontal conduit. The function of the handle is to turn the valve on and off.

v. Discussion

1. Baker's Descriptive Construction Language is Unnecessary

Each construction offered by Baker above begins with a detailed description of the claimed design. The Court rejects this language. As mentioned, courts are cautioned about excessive reliance on a detailed verbal description in a design infringement case." *Crocs*, 598 F.3d at 1302. Among other things, "detailed verbal claim constructions increase the risk of placing undue emphasis on particular features of the design and the risk that a finder of fact will focus on each individual described feature in the verbal description rather than on the design as a

whole." *Sport Dimension, Inc.*, 820 F.3d at 1320. The Court sees no advantage to including the suggested detailed verbal descriptive construction language.

2. Conduit Length Disputes

As a threshold matter, the parties spend a great deal of energy discussing whether the length(s) of the various components depicted in the design patents are "functional." For example, Baker asserts that the length(s) of the lower horizontal conduits are dictated by manufacturing and operating considerations and are not ornamental. ECF No. 28 at 8. Baker's expert states that limiting the length of the horizontal conduits is necessary to ensure that the vertical tanks can be easily transported, while maximizing the length of the horizontal conduits is necessary for operator access to the valves and end connections. Stevick Decl. ¶ 21-22. VTI's expert provides at least some conflicting evidence, asserting that the functionality of a tank to which the lower manifold claimed in the '842 Patent was attached would not be impeded if some of the nozzles protruded out past the tank's cylindrical diameter. Morgenthaler Decl. ¶ 10.[4] Baker rejoins that during prosecution of the '543 Patent, VTI explained that the lower horizontal conduits were designed so that the lower horizonal conduits would not extend beyond the cylindrical upper section of a tank. *Id.* (citing ECF No. 27-3 at 92-93). While the existence of a concomitant utility patents (and the assertions of functionality therein) is potentially relevant to design patent construction under *Sport Utility*, the Court is at a loss to understand why it would be appropriate to even address the length(s) of the various components in the design patents. For example, all that can be determined as to length in the '842 Patent is relative, namely that all horizontal conduits are equal in length relative to one another, but are considerably longer than the depicted vertical conduit. Nothing in the design or any other evidence of which the Court is aware provides absolute lengths. The same problem pertains to the '843 Patent. It is therefore entirely unclear how, if at all, the Court should or could "factor out" lengths from a design patent that does not obviously claim specific lengths.

[4] Baker argues in their supplemental brief that Morgenthaler admitted at his deposition that he has no understanding of how design patents are to be interpreted. *See* ECF No. 34 at 1; Morgenthaler Depo. At 10. The Court looks to Mr. Morgenthaler's Declaration for facts not for legal conclusions, and thus finds his lack of patent interpretation expertise of minimal probative value.

3. Shape, Number, and Arrangement of Conduits

Baker's offered construction attempts to factor out the shape, number, and arrangement of the horizontal conduits in both the '842 and '843 Patents. Baker's expert asserts that "the shape, number, and arrangement of the lower horizontal conduits and lower vertical conduit should be excluded as functional." Stevick Decl. ¶ 26. He makes a similar assertion as to the horizontal conduits in the upper manifold. *Id.* at ¶ 36. But, apart from indicating what the horizontal conduits do (i.e., convey fluid), he does not provide any reasoning in support of the assertion that the shape, number, and arrangement are "functional" for purposes of claim construction. There may be a functional reason for the choice of four horizontal conduits each (rather than 3, or 5, or 6, or 8), such as the normal placement of each vertical tank within a rectangular frame, but that is not explicitly discussed. In fact, VTI's expert suggests that shape and arrangement are not necessarily functional. With respect to the lower manifold, he states that the symmetry of that design is not necessary in light of the way the tanks are used in the field. *See* Morgenthaler Decl. ¶ 10. More explicitly with respect to the upper manifold, he states:

> The shape [and] symmetry . . . is not driven by functional considerations for the upper manifold claimed in the '843 Patent. . . . Symmetry is not required, nor is a square shape of central conduit depicted in the '843 Patent[']s design. The central conduit could have been designed with any number of shapes, including a circular, oval or octagon and still perform its function.

Id. at ¶ 12. This presents a quintessential fact dispute.[5]

A similar fact dispute exists as to the nature (functional or ornamental) of the upper vertical conduit. Baker asserts in its construction that:

> The arrangement of the vertical conduit is functional and not ornamental because it is necessary for its operation, including performing the function of conveying fluid from an external source through the horizontal conduits, through the central conduit, through the vertical conduit, and to the top of the vertical tank for storage or cleaning.

[5] Whether the arrangements in question are effectively functional insofar as they are the most efficient design in light of other constraints is not discussed. *Cf. Franek v. Walmart Stores, Inc*., No. 08-CV-0058, 2009 WL 674269, at *18 (N.D. Ill. Mar. 13, 2009), *aff'd sub nom. Jay Franco & Sons, Inc. v. Franek*, 615 F.3d 855 (7th Cir. 2010) (discussing various ways in which efficiency considerations can be relevant to functionality analysis).

Baker's expert offers no specific additional evidence to support this assertion. Critically, the undisputed fact that the upper vertical conduit serves a purpose of conveying fluid from the central conduit to the top of the vertical tank does not necessarily require factoring out the arrangement of the pipes. The record does not provide sufficient information for the Court to apply the *Sport Dimension* factors in any meaningful way. Is the design, including a lower, bent portion, the best design? Would alternative designs adversely affect the utility of the conduit? Does the utility patent suggest the design was selected for a functional reason? (It does not appear to do so.) Again, VTI's expert suggests this particular design is not functional. Morgenthaler Decl. ¶ 13 ("[T]he upper vertical conduit did not need to have an angled portion to achieve its requisite function, rather, it just needs to be connected to the conduit."). Again, a fact dispute remains.

4. Valves

Baker asserts that "[e]ach valve, its associated flanges, nuts and bolts, and valve handle are functional and not ornamental," because "[t]he function of the valve is to regulate the flow of a fluid within the horizontal conduit . . . [t]he function of the flanges, nuts and bolts is to secure the valve within the horizontal conduit[,] [and] [t]he function of the handle is to turn the valve on and off." VTI's expert does not appear to refute this, at least not directly.

Although Baker's proposed construction is not explicit about seeking to factor out the placement of the valves, Baker's expert further asserts that the placement of the valves on the horizontal conduits is primarily functional. According to Stevick, they "are located at the end of the horizontal conduits to avoid interference caused by placing them near the lower vertical conduit" and to "provide[] for convenient access without having to reach under the tank to operate the valves." Stevick Decl. at ¶ 24. But, the Court agrees with VTI that these assertions are speculation because there is no evidence to demonstrate how close a valve could be to another component before there would be an issue related to reachability or interference. *See* ECF No. 30 at 8. VTI's expert suggests that a designer has "much latitude" when it comes to valve placement,

Morgenthaler Decl. at ¶ 11, suggesting that the exact placement in the design patents is not necessarily functional.[6]

VTI has provided some evidence to support a conclusion that at least one aspect of the valve design is ornamental. Morgenthaler asserts, and Baker nowhere disputes, that the depicted orientation of the valves (dead center on top of each lower horizontal conduit) is not dictated by function, as functional valves could have been positioned in many alternative orientations. *See* Morgenthaler Decl. at ¶ 11. Baker presents no evidence regarding valve orientation.

In sum, although the Court is "[c]ognizant of [its] role as the construer of patent claims and the need for claim construction to be complete before a jury deliberates on infringement," *Colgate-Palmolive Co. v. Ranir, L.L.C.*, No. CIV. A. 06-417 GMS, 2007 WL 2225888, at *3 (D. Del. July 31, 2007), the Court has wide latitude regarding how and when to do so. *Ballard Med.* 268 F.3d at 1358. While it is clear that the Court must, as it has done, interpret disputed terms used in the patent as a matter of law, *see Markman*, 517 U.S. 370, the timing and precise role of the Court in resolving disputes about functionality is less clear. *Egyptian Goddess* indicates that "[a]part from attempting to provide a verbal description of the design, a trial court can usefully guide the finder of fact by addressing a number of other issues that bear on the scope of the claim," including "distinguishing between those features of the claimed design that are ornamental and those that are purely functional." 543 F.3d at 680. One district court has persuasively reasoned that *Egyptian Goddess* does not require (and in fact may caution against) a court addressing these issues at claim construction in advance of trial or in advance of summary judgment motions. *See 180s, Inc. v. Gordini U.S.A.*, Inc., 699 F. Supp. 2d 714, 728 (D. Md. 2010) (collecting cases and noting that *Richardson, 597 F.3d 1298,* only stands for the proposition that a court may engage in that process at the claim construction stage if the parties have consented to a bench trial). Other courts have found that where there are genuine factual disputes regarding the degree to which certain features a design patent are ornamental or functional, a court may leave

[6] Baker points out that Morgenthaler agreed in his deposition that "access to" valves is a functional factor to consider in the design of the conduits, Morgenthaler Depo. at 98. But, by this testimony, Morgenthaler does not abandon his general assertion that there is "wide latitude" in valve placement. His deposition goes to the weight of his opinions as to the design patents, which the Court does not address at this time.

such facts for the jury to determine. *See Deckers Outdoor Corp. v. Rue Servs. Corp.*, No. CV1306303JVSVBKX, 2014 WL 12588481, at *3 (C.D. Cal. Aug. 29, 2014) (leaving such disputes to the jury in context of claim construction); *see also Five Star Mfg., Inc. v. Ramp Lite Mfg., Inc.,* 44 F. Supp. 2d 1149, 1156 (D. Kan. 1999) (deferring a determination regarding functionality until trial, if necessary); *Black & Decker (U.S.) Inc. v. Pro-Tech Power Inc.*, No. 97-1123-A, 1998 WL 633636 (E.D. Va., June 2, 1998)((leaving the question of whether certain elements of the asserted design patent are functional to the jury); *Depaoli v. Daisy Mfg. Co.,* No. 07ocv–11778–DPW, 2009 WL 2145721, at *5 (D. Mass. July 14, 2009) ("To the extent the scope of the claim must be limited by prosecution history or functionality, I will address those issues definitively if and when they are raised at some later stage in these proceedings, such as resolution of motions for summary judgment or as part of the jury instructions at trial.").

For now, the Court will go no further than to adopt, preliminarily, VTI's initial constructions of the design patents:

- The '842 Patent "claims the ornamental design of a horizontal conduit as shown in Figures 1-7."
- The '843 Patent claims the "ornamental design of a vertical conduit as show in in Figures 1-7" as well as "horizontal conduits as shown in Figures 1-7."

At a future stage of the case, the Court will entertain the parties' positions on how and when the Court and/or the finder of fact should address disputes pertaining to the functional aspects of the design patents and how, if at all, those distinctions should be incorporated into the construction of the claimed designs.

IV. CONCLUSION AND ORDER

For the reasons set forth above:

(1) With respect to Claims 1 and 4 of the '543 Patent, the court construes the terms:

(a) "an upper vertical conduit with a first end connected to and in fluid communication with the central conduit," to mean that the upper vertical conduit is directly or indirectly connected to the central conduit;

(b) "upper vertical conduit" to mean a conduit that extends upwards;

(c) "a flexible tubing" to mean a tube that is capable of being bent or flexed without breaking;

(2) With respect to the design patents, at this stage of the case, the court construes:

(a) The '842 Patent to claim "the ornamental design of a horizontal conduit as shown in Figures 1-7."

(b) The '843 Patent to claim "the ornamental design of a vertical conduit as show in in Figures 1-7" as well as "horizontal conduits as shown in Figures 1-7."

IT IS SO ORDERED.

Dated: **May 22, 2019**

/s/ Lawrence J. O'Neill
UNITED STATES CHIEF DISTRICT JUDGE