

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

NATIONAL OILWELL DHT, L.P.,	§	
Plaintiff,	§	
	§	
v.	§	CIVIL ACTION NO. 2-14-1020
	§	
AMEGA WEST SERVICES, LLC,	§	
Defendant.	§	

MEMORANDUM AND ORDER

This patent case is before the Court on the Motion for Summary Judgment of Non-Infringement of U.S. Patent No. 6,431,294 (“the ’294 Patent”) (“Motion”) [Doc. # 76] filed by Defendant Amega West Services, LLC (“Amega”). Amega argues that it does not infringe the ’294 Patent because its devices do not have a “drill bit support coupled to the body” or a “mass movable relative to the body for impacting on the drill bit support.” Plaintiff National Oilwell DHT, L.P. (“NOV”) filed an Opposition [Doc. # 89], and Amega filed a Reply [Doc. # 92].

Also pending is Amega’s Motion for Partial Summary Judgment of Non-Infringement of U.S. Patent Nos. 6,279,670 (“the ’670 Patent”) and 6,508,317 (“the ’317 Patent”) (“PSJ Motion”) [Doc. # 79]. Amega argues that its devices do not infringe the ’317 Patent or certain claims of the ’670 Patent, either literally or through the doctrine of equivalents, because they do not include an “open axial drilling fluid

flow port” or its equivalent. NOV filed an Opposition (“PSJ Response”) [Doc. # 90], and Amega filed a Reply (“PSJ Reply”) [Doc. # 93].

The Court has carefully reviewed the full record and applicable legal authorities. Based on that review, the Court **grants** both Motions.¹

I. BACKGROUND

NOV is the owner of the ’294 Patent, the ’670 Patent, and the ’317 Patent (“the Patents-in-Suit”), which cover vibration tools² for use in drilling operations. Vibration tools are used to create vibratory forces to reduce friction as a drill string is moved within a bore and/or to vary the downward force exerted on a drill bit.

The ’294 Patent states that a “percussion drill **10** has a tubular fluid transmitting body **14**, with a drill bit **16** mounted on a drill bit support **20**.” *See* ’294 Patent, Abstract. Claim 1 contains six separate limitations: (1) a fluid transmitting body; (2) a drill bit support coupled to the body; (3) a mass movable relative to the body for impacting on the drill bit support; (4) a means associated with the mass for creating a fluid pressure force on said mass; (5) a rotating valve located in the body for

¹ In its Motion for Partial Summary Judgment, Amega does not seek summary judgment on claims 1-4, 8, and 10 of the ’670 Patent. NOV’s complaint as to those patent claims remains pending.

² The ’670 Patent and the ’317 Patent refer to the subject vibration tool as a “downhole flow pulsing apparatus.” *See, e.g.*, ’670 Patent, Abstract; ’317 Patent, Abstract. The ’294 Patent refers to the vibration tool as a “percussion drill.” *See, e.g.*, ’294 Patent, Abstract.

controlling flow of fluid through the body to produce a varying fluid pressure force on the mass and induce acceleration of the mass; and (6) a valve motor for driving said valve. *See* '294 Patent, Claim 1.

The '670 Patent and the '317 Patent disclose vibration tools that use “a drive system that includes a positive displacement motor (sometimes referred to as a ‘PDM’) to drive a specially constructed valve assembly that is tailored for use with a PDM.” Plaintiff’s Written Tutorial [Doc. # 41], p. 4. “[B]ecause the speed of a PDM is proportional to the rate of flow of fluid through the PDM, the frequency of the vibrations produced by the tool of the [Patents-in-Suit] can be controlled by varying the rate of fluid flow through the tool.” *Id.* at 5.

These two patents describe a PDM rotor coupled to a movable valve plate, which interacts with a stationary plate. *Id.* at 6. Each plate contains an opening through which fluid can pass. *See id.* As the PDM rotor moves the movable plate relative to the stationary plate, the overlap between the openings of the two plates will vary the flow of fluid through the valve. *See id.* The variations in fluid flow through the overlapping openings of the valve produce varying drilling fluid pressures that can be used to create desired vibrations. *See id.*

NOV filed this lawsuit, alleging that Amega is infringing the Patents-in-Suit through its AmegaVIBE friction reduction drilling tools (collectively referred to

herein as “AmegaVIBE”). Following a hearing pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996) (“*Markman* hearing”), on March 5, 2019, the Court issued its Memorandum and Order on Claim Construction (“*Markman* Ruling”) [Doc. # 66]. The Court construed the claim term “open axial drilling fluid flow port,” found in Claims 11 and 13 of the ’670 Patent and Claims 1 and 5 of the ’317 Patent, to mean “a bore extending along a longitudinal axis of the valve through which drilling fluid can pass and that is always at least partially open.”³ *See Markman* Ruling, p. 13.

Following discovery, Amega filed its Motion for Summary Judgment of Non-Infringement as to the ’294 Patent, and its Motion for Partial Summary Judgment of Non-Infringement as to the ’670 Patent and the ’317 Patent. The pending motions have been fully briefed and are now ripe for decision.

II. APPLICABLE LEGAL STANDARDS

A. Summary Judgment Standard

Rule 56 of the Federal Rules of Civil Procedure provides for the entry of summary judgment, after adequate time for discovery and upon motion, against a party who fails to make a sufficient showing of the existence of an element essential

³ The claim terms “a drill bit support coupled to the body” and “a mass movable relative to the body for impacting on the drill bit support,” found in asserted Claims 4 and 17 of the ’294 Patent, were not contested claim terms and were not at issue in the *Markman* proceeding.

to the party's case, and on which that party will bear the burden at trial. *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986). “When evaluating a motion for summary judgment, the court views the record evidence through the prism of the evidentiary standard of proof that would pertain at a trial on the merits.” *SRAM Corp. v. AD-II Eng'g, Inc.*, 465 F.3d 1351, 1357 (Fed. Cir. 2006).

Summary judgment on infringement is appropriate only if there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. *See Ultimatepointer, L.L.C. v. Nintendo Co., Ltd.*, 816 F.3d 816, 824 (Fed. Cir. 2016). The infringement analysis at the summary judgment stage requires the Court to compare the patent claims as construed with the accused device. *See Convolv, Inc. v. Compaq Computer Corp.*, 812 F.3d 1313, 1317 (Fed. Cir. 2016).

B. Standard for Literal Infringement

“[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States . . . infringes the patent.” 35 U.S.C. § 271(a); *Lexmark Int'l, Inc. v. Impression Prods., Inc.*, 816 F.3d 721, 726 (Fed. Cir. 2016); *Int'l Bus. Machines Corp. v. Booking Holdings Inc.*, 775 F. App'x 674, 677 (Fed. Cir. May 22, 2019). “An infringement analysis has two steps.” *Indivior Inc. v. Dr. Reddy's Labs., S.A.*, 930 F.3d 1325, 1336 (Fed. Cir. 2019) (citing *Clare v. Chrysler*

Grp. LLC, 819 F.3d 1323, 1326 (Fed. Cir. 2016)). In the first step, the Court construes the asserted claims. *Id.*

In the second step, the Court determines whether the accused product meets each limitation of the claim as construed. *See id.* The comparison is only to the patent claims, not to any specific embodiment in the patent specification or to the patent holder's commercial embodiment. *See Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1347 (Fed. Cir. 2003); *Fleet Eng'rs, Inc. v. Mudguard Techs., LLC*, 761 F. App'x 989, 992 (Fed. Cir. Feb. 25, 2019). "The patentee has the burden of proving infringement by a preponderance of the evidence." *Eli Lilly & Co. v. Hospira, Inc.*, 933 F.3d 1320, 1328 (Fed. Cir. 2019).

C. Standard for Infringement under Doctrine of Equivalents

"The doctrine of equivalents prevents an accused infringer from avoiding infringement by changing only minor or insubstantial details of a claimed invention while retaining their essential functionality." *Sage Prod., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1424 (Fed. Cir. 1997); *Choon's Design, LLC v. Idea Vill. Prod. Corp.*, 776 F. App'x 691, 697 (Fed. Cir. June 24, 2019). "A finding of infringement under the doctrine of equivalents requires a showing that the difference between the claimed invention and the accused product was insubstantial." *Crown Packaging Tech., Inc. v. Rexam Beverage Can Co.*, 559 F.3d 1308, 1312 (Fed. Cir. 2009).

The Federal Circuit has emphasized that the doctrine of equivalents is the exception and “not the rule.” *Eli Lilly & Co. v. Hospira, Inc.*, 933 F.3d 1320, 1330 (Fed. Cir. 2019). “Patent infringement is principally determined by examining whether the accused subject matter falls within the scope of the claims.” *Id.*

III. MOTION ADDRESSING '294 PATENT

The '294 Patent, entitled “Percussive Tool,” discloses a percussion drill that provides percussive action at the drill bit to improve the drilling rate. It is uncontested that asserted Claims 4 and 17 of the '294 Patent, which depend from Claim 1, require both a “drill bit support coupled to the body” and a “mass movable relative to the body for impacting on the drill bit support.” *See* PSJ Response, p. 2; '294 Patent, Claim 1.

The AmegaVIBE is a friction reduction tool, which is different from a percussive tool. The AmegaVIBE is placed in a drill string, usually over 1500 feet away from the drill bit. It is undisputed that the AmegaVIBE is connected to the drill pipe in the drill string; it is not connected directly to the drill bit.

In the claim term “drill bit support coupled to the body,” NOV asserts that the “body” is the “fluid transmitting body.” *See id.* at 10. NOV’s assertion is supported by the language of the '294 Patent, which provides for “a fluid transmitting body and a drill bit support coupled “to the body.” *See* '294 Patent, Claim 1. Amega agrees,

noting that the drill bit support must be “coupled to the [fluid transmitting] body.” *See* Reply, p. 2.

In support of its argument that the AmegaVIBE contains a “drill bit support coupled to the body,” NOV relies on its technical expert, Ed Hemphill. In his report, Hemphill stated that the “drill bit is ultimately supported by the outer housing of the AmegaVIBE tool” and that “the tool’s housing ultimately supports the drill bit.” *See* Response, p. 12 (citing Hemphill Report at Appx 031). It is NOV’s position that the outer housing of the AmegaVIBE satisfies the requirement for a “drill bit support coupled to the body.”

As an initial matter, Hemphill provides no explanation for his statement that the outer housing of the AmegaVIBE *supports* the drill bit, which is usually located more than 1500 feet along the drill string away from the housing and, in many instances, approximately 2000 feet away. Hemphill’s conclusory statement is mere *ipse dixit*, which is insufficient to avoid summary judgment. The Court is not required to “admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert.” *Kumho Tire*, 526 U.S. at 157; *Chan v. Coggins*, 294 F. App’x 934, 939 (5th Cir. Oct. 2, 2008). Where the opinion “is fundamentally unsupported, then it offers no expert assistance to the jury.” *Guile v. United States*, 422 F.3d 221, 227 (5th Cir. 2005) (quoting *Viterbo v. Dow Chem. Co.*, 826 F.2d 420, 422 (5th Cir. 1987)). In

such cases, there is “simply too great an analytical gap between the data and the opinion proffered.” *Gen. Elec. Co. v. Joiner*, 422 U.S. 136, 146 (1997); *Atl. Specialty Ins. Co. v. Porter, Inc.*, 742 F. App’x 850, 855 (5th Cir. 2018). “A claim cannot stand or fall on the mere *ipse dixit* of a credentialed witness.” *McManaway v. KBR, Inc.*, 852 F.3d 444, 449 (5th Cir. 2017). Therefore, Hemphill’s statement in his report that the housing “supports the drill bit” does not present a genuine issue of material fact regarding whether the AmegaVIBE has “a drill bit support.”

Additionally, even if the Court were to allow Hemphill’s unsupported statement as evidence of a “drill bit support” in the AmegaVIBE, NOV has no evidence of a drill bit support “coupled to the body.” As noted above, NOV argues, and Amega agrees, that the housing of the AmegaVIBE is the “fluid transmitting body.” NOV takes the position that the housing of the AmegaVIBE is also the drill bit support. NOV fails to explain or, more importantly, to present evidence regarding how the drill bit support could be coupled to the fluid transmitting body when, under NOV’s argument, the drill bit support and the fluid transmitting body are the same housing. Claim 1 of the ’294 Patent, from which asserted Claims 4 and 17 depend, clearly lists the fluid transmitting body and the drill bit support coupled to the body as separate limitations. Therefore, if, as the parties agree, the housing of the AmegaVIBE is the fluid transmitting body, then the housing of the AmegaVIBE cannot also be the drill bit

support for purposes of the “drill bit support coupled to the body” limitation of the ’294 Patent.

NOV has failed to present evidence that raises a genuine issue of material fact in support of its position that the AmegaVIBE includes a “drill bit support coupled to the body” as required for infringement of the ’294 Patent.⁴ As a result, Amega is entitled to summary judgment on non-infringement as to this patent.

IV. MOTION ADDRESSING ’670 PATENT AND ’317 PATENT

A. Background

The ’317 Patent is a divisional of, and shares a common specification with, the ’670 Patent. Alan Martyn Eddison and Ronnie Hardle (collectively, “patentee”) are the named inventors and applicants for the two patents. Both patents relate to downhole drilling tools. Asserted Claims 11 and 13 of the ’670 Patent, and asserted Claims 2 and 5 of the ’317 Patent, each cover a valve containing the following limitation:

a valve . . . including first and second valve members each defining a respective axial flow opening and which openings are aligned to collectively define an open axial drilling fluid flow port through the valve.

⁴ Because NOV has failed to present evidence of a “drill bit support” in the AmegaVIBE, it has similarly failed to present evidence of a “mass movable relative to the body for impacting *on the drill bit support.*”

PSJ Motion, p. 14 (quoting Claims 11 and 13 of the '670 Patent and Claims 2 and 5 of the '317 Patent). The Claims require (1) that the first and second valve members each define “a respective axial flow opening,” and (2) that those respective openings are aligned to collectively define an “open axial drilling flow port.” The Court construed the claim term “open axial drilling fluid flow port” to mean “a bore extending along a longitudinal axis of the valve through which drilling fluid can pass and that is always at least partially open.” *See Markman Ruling*, p. 13.

B. Literal Infringement

Amega seeks summary judgment that the AmegaVIBE does not include the limitation of “a bore” that is “always at least partially open.” NOV responds with evidence that the AmegaVIBE contains various openings that collectively result in the “valve of the AmegaVIBE” being “always at least minimally open.” *See PSJ Response*, p. 13 (quoting Amega’s Technical Expert). NOV also presented evidence that the “flow of fluid passing through the valve is never stopped as the valve rotates.” *See id.* NOV’s evidence, however, demonstrates only that *the valve* remains open because there are multiple bores that open and close at different times.

NOV has not presented evidence that the AmegaVIBE operates in such a way that there is a single “flow port” or “bore” that is always at least partially open. Indeed, NOV admits that when the openings extending through the stationary and

rotating valves align, “the openings collectively define two or more open bores” that are “always at least partially open.” *See id.* at 4. NOV has not presented evidence that operation of the AmegaVIBE creates at any time a single bore that always remains at least partially open, rather than opening a bore that is then closed, after which another, different bore opens. Therefore, Amega is entitled to summary judgment on the literal infringement claim as to the ’670 Patent and the ’317 Patent.

C. Doctrine of Equivalents

NOV argues that the AmegaVIBE⁵ infringes the ’670 Patent and the ’317 Patent under the doctrine of equivalents. Amega argues that NOV is barred by the prosecution history from asserting the doctrine of equivalents. When the patentee “originally claimed the subject matter alleged to infringe but then narrowed the claim in response to a rejection, he may not argue that the surrendered territory comprised unforeseen subject matter that should be deemed equivalent to the literal claims of the issued patent.” *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 733-34 (2002); *see also Conoco, Inc. v. Energy & Envtl. Int’l, L.C.*, 460 F.3d 1349, 1363 (Fed. Cir. 2006).

⁵ NOV distinguishes between the pre-2017 AmegaVIBE design and the “2017 and beyond” version of the AmegaVIBE. In the “2017 and beyond” version, the axial openings align to define three flow ports, while in the pre-2017 version, the axial openings at times define only two flow ports. For purposes of the prosecution history estoppel argument, the Court’s analysis is the same for both versions.

During the prosecution of the '670 Patent, the patentee distinguished the pending claims from prior art, specifically U.S. Patent No. 2,780,438 ("*Bielstein*"). In response to the Patent Examiner's rejection of then-pending claim 14 of the '670 Patent, the patentee distinguished *Bielstein* as having an axial drilling fluid flow port that "is alternatively closed and opened." The patentee distinguished *Bielstein* as having ports that are axially misaligned at times, and "do not define an open axial drilling fluid port" because *Bielstein*'s passageways "alternatively closed and opened." The Examiner persisted in the rejection of the claim, and the patentee cancelled claim 14. *See* Amendment After Final Action [Doc. # 44-1], p. 231. The patentee did not, however, retract its position regarding *Bielstein*. Indeed, the patentee later, in its application for the '317 Patent, again expressed its disagreement with the prior rejection of claim 14 and argued that the flow ports in *Bielstein* "do not define an open axial drilling fluid port." Based on this prosecution history, NOV cannot now argue that the AmegaVIBE flow ports which, like *Bielstein*, alternatively open and close, are the equivalent of the claimed "open axial drilling fluid flow port."

NOV responds that Amega misunderstands the basis for NOV's doctrine of equivalents argument. Specifically, NOV states its argument as follows:

... NOV believes that the limitation is met equivalently. This is because, in *all alignments* and for *all orientations* of the first and second valve members of the [AmegaVIBE] tool, the axial openings in the first [rotating] valve member align with the axial openings in the [second]

valve member to collectively define a bore extending along a longitudinal axis of the valve through which drilling fluid can pass such that the collective interaction of the axial openings defined by the first and the second valve members always define a bore passing through the valve which drilling fluid can pass that is always open.

PSJ Response, pp. 18-19 (emphasis in original). NOV appears to argue that the three fluid flow openings in the AmegaVIBE, even though each one alternatively opens and closes, are the equivalent of “a bore” that is “always at least partially open” as described in the ’670 Patent and the ’317 Patent because fluid can always flow through one of the three openings.

NOV argues further that it is not attempting to recapture subject matter surrendered through the patentee’s statements to the patent examiner in order to distinguish *Bielstein*. See Response, p. 19. NOV asserts that the patentee distinguished *Bielstein* by noting that when the valve in *Bielstein* “was in the fully-open position (*i.e.*, the position of maximum flow through the valve) there was no fluid flow through the axial openings” See *id.* at 20. Although this was one basis for distinguishing *Bielstein*, the patentee also distinguished *Bielstein* as having an axial drilling fluid flow port that “is alternatively closed and opened.” See Prosecution History [Doc. # 44-1], p. 218. NOV cannot now recapture through assertion of the doctrine of equivalents an axial drilling fluid flow port, even if comprised of multiple openings, that “is alternatively closed and opened.”

NOV argues also that there are significant differences between the AmegaVIBE and the device described in *Bielstein* that preclude the application of prosecution history estoppel in this case. NOV asserts that, unlike the *Bielstein* device where there were intervals when no fluid flowed through an axial opening, in the AmegaVIBE fluid always flows through ports in the valve. *See* Response, p. 21. NOV asserts also that, unlike *Bielstein*, the AmegaVIBE has axial openings that are always at least partially aligned such that there is always fluid flowing through the valve. *See id.* Amega points out that, to the contrary, in both *Bielstein* and the AmegaVIBE, the *valve* remains at least partially open due to other openings in the valve, while each of the fluid flow ports alternatively opens and closes. *See* Reply, pp. 7-8. As noted above, the patentee specifically distinguished *Bielstein* based on the presence of flow ports that alternatively open and close, arguing that the flow ports did not constitute a “open axial drilling fluid flow port.” Therefore, the patentee disclaimed coverage of a device with a flow port that alternatively opens and closes, even though flow continued through other openings in the valve.

As discussed above, the patentee argued during the prosecution of the '670 Patent and the '317 Patent that ports that alternatively open and close, such as those in *Bielstein*, did not constitute an “open axial drilling fluid flow port.” As a result, NOV is estopped to base an infringement claim on the doctrine of equivalents

argument that the AmegaVIBE ports, whether two or three, that alternatively open and close are the equivalent of an “open axial drilling fluid flow port.” Amega is entitled to summary judgment on that claim.

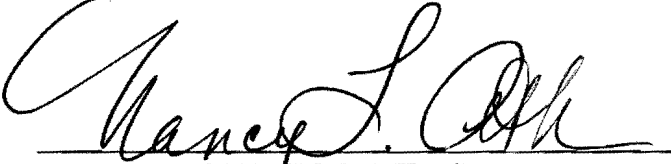
V. CONCLUSION AND ORDER

NOV has failed to present evidence that the AmegaVIBE contains “a drill bit support coupled to the body” or a “mass movable relative to the body for impacting on the drill bit.” Therefore, Amega is entitled to summary judgment of non-infringement of the '294 Patent.

NOV has failed to present evidence that raises a genuine fact dispute regarding its argument that the AmegaVIBE contains an “open axial drilling fluid flow port” as that term has been construed by the Court. NOV is barred by the prosecution history from asserting its “doctrine of equivalents” argument regarding the “open axial drilling fluid flow port” limitation. As a result, Amega is entitled to summary judgment of non-infringement as to Claims 11 and 13 of the '670 Patent and as to Claims 2 and 5 of the '317 Patent. Accordingly, it is hereby

ORDERED that Amega’s Motion for Summary Judgment of Non-Infringement of the '294 Patent [Doc. # 76] and Motion for Partial Summary Judgment of Non-Infringement of the '670 Patent and the '317 Patent [Doc. # 79] are **GRANTED**.

SIGNED at Houston, Texas, this **16th** day of **April, 2020**.



NANCY F. ATLAS
SENIOR UNITED STATES DISTRICT JUDGE