

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SILENCERCO WEAPONS RESEARCH, LLC,

Petitioner,

v.

HUXWRX SAFETY CO. LLC,

Patent Owner.

Case IPR2024-01214

Patent 8,286,750

**PATENT OWNER'S REQUEST FOR DIRECTOR REVIEW OF FINAL
WRITTEN DECISION UNDER 37 C.F.R. § 42.75**

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Patent Owner HuxWrx Safety Co, LLC (“HuxWrx”) respectfully requests that the Director review the Board’s construction of the term “radially serpentine.” The Board found every claim that Patent Owner defended to be patentable, and it granted Patent Owner’s Motion to Amend with respect to every remaining proposed substitute claim save one. But in reaching its decision, the Board construed the term “radially serpentine,” which appears in every original and substitute claim, unduly narrowly. The Board’s construction is inconsistent with the specification, prosecution history, and even the understanding of both parties’ experts in this case.

While Patent Owner believes it would have prevailed even under a proper interpretation of “radially serpentine,” it is important that the Director correct the Board’s construction. Because Patent Owner prevailed, the Federal Circuit will not correct the Board’s error on any appeal by Patent Owner from this IPR. Thus, absent Director review, the Board’s erroneous construction will be the final word on the meaning of “radially serpentine” until a court provides a different interpretation. The public will thus be misled as to the scope of the ’750 patent, undermining the public-notice function of patents and their intrinsic records. Indeed, Petitioner itself is taking the position that it does not infringe under the Board’s construction and that the Board’s construction is preclusive in parallel district court litigation. The Director should thus review the Board’s decision, interpret “radially serpentine” correctly, and remand to the Board for a proper analysis.

I. BACKGROUND

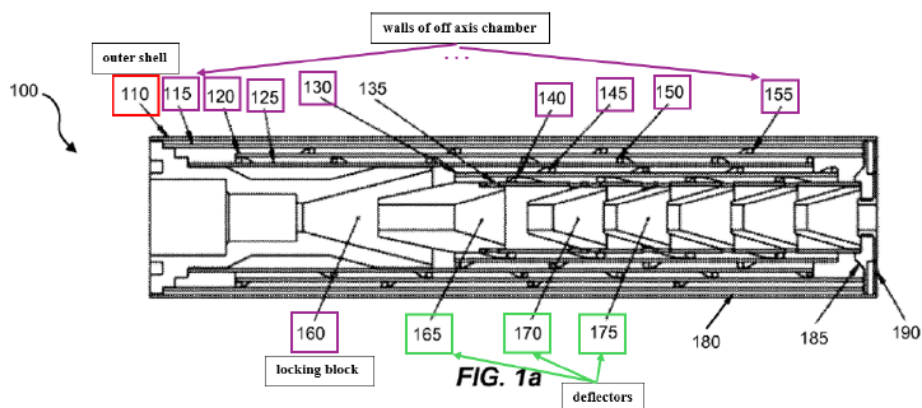
A. The '750 Patent

U.S. Patent No. 8,286,750 (“the ’750 patent”) relates to energy capture and control devices to address problems associated with high energy sources, in particular weapons. Specifically, the ’750 patent discloses and claims energy capture and control devices, such as firearm suppressors, that, among other things, have an “off axis chamber” into which “gases, sound/shock waves, and/or particulates” are redirected, and this off axis chamber has internal walls that “defin[e] a serpentine or winding fluid pathway.” Ex. 1001, 4:10-29. This serpentine pathway “can provide an increased volume for fluid expansion and increased acoustic absorbent path length,” increasing the efficacy of energy capture and control devices. *Id.* at 4:29-31.

The ’750 patent describes two types of serpentine pathways that off axis chambers can have: (1) “axially serpentine” pathways, and (2) “radially serpentine” pathways. According to the specification, an “axially serpentine fluid pathway . . . causes fluids received in the off axis chamber to travel back and forth along a length of the off axis chamber.” *Id.* at 4:32-34. The specification discloses two embodiments of a “radially serpentine” pathway. In one embodiment, “a radially serpentine fluid pathway . . . causes the fluids received in the off axis chamber to flow back and forth around a radius of the off axis chamber.” *Id.* at 4:34-37. In

another embodiment, the “radially serpentine pathway . . . causes the fluids to flow back and forth around a radius of the off axis chamber while also traversing a length of the off axis chamber.” *Id.* at 4:37-41. Each claim of the ’750 patent (both original and substitute) requires a fluid pathway that is either “axially serpentine” or “radially serpentine.” *See id.* at claims; Motion to Amend (Paper 18), App. A.

The ’750 patent discloses several exemplary devices with serpentine pathways. For example, Figure 1a, reproduced with annotations below, discloses a device with an outer shell (110) and a central chamber including deflectors (165, 170, 175) that allow a high energy material (e.g., a projectile) to pass through “while redirecting at least a portion of gases, sound/shock waves, and/or particulates into the off axis chamber.”



Ex. 1001, Fig. 1a (annotated), 4:19-26. In this embodiment, the “multiple internal walls 115, 120, 125, 130, 140, 145, 150, and/or 155” form “an axially serpentine pathway which helically spirals around the central chamber along a length of the off axis chamber.” *Id.* at 4:27-29, 60-64.

Figure 14, reproduced below, discloses another exemplary device. Specifically, it discloses a device that “includes multiple segments 500 which each have concentric offset cylinders 505.” *Id.* at 9:7-10.

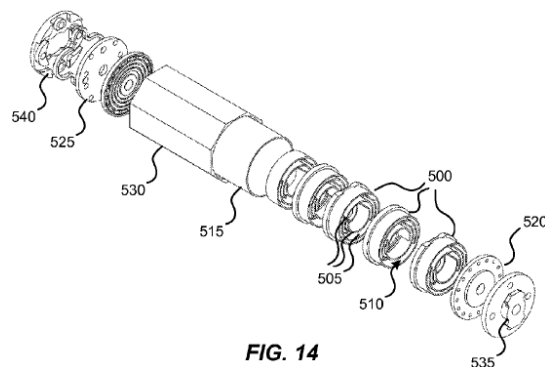
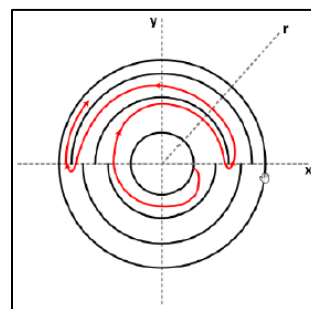


FIG. 14

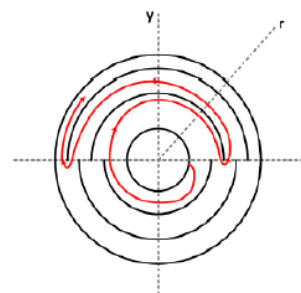
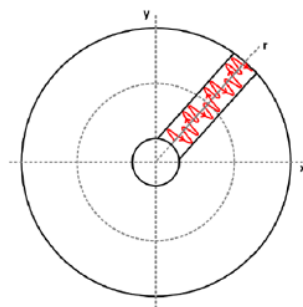
“Gases flow into a serpentine path 510 created by the offset cylinders 505.” *Id.* at 9:10-11. “The serpentine path in this case is a series of annular spaces which are connected and progressively larger,” resulting in the flow shown to the right. *Id.* at 9:11-13; *see* Petition (Paper 2) at 17; Ex. 1013, ¶ 128, Fig. 2; Ex. 2001, ¶¶ 58-59. At issue in this case is whether a pathway that directs fluids back and forth around the longitudinal axis, like that shown in Figure 14, is “radially serpentine.”



B. Relevant Proceedings

Petitioner challenged all 22 claims of the '750 patent, arguing that the prior art showed both axially serpentine and radially serpentine fluid pathways. *See generally* Petition (Paper 2). Petitioner asserted that no specific constructions were required, but set forth its own understanding of certain terms, including “radially serpentine.” *Id.* at 12-19. With respect to “radially serpentine,” Petitioner argued that “a serpentine fluid

pathway which is . . . radially serpentine” is “a fluid pathway that causes fluids to flow back (e.g., counterclockwise) and forth (e.g., clockwise) in alternate rotational directions, changing direction at least twice, while advancing outwardly along a radius of the off-axis chamber.” *Id.* at 16. Petitioner and its expert provided two examples of what they believed would satisfy this definition of “radially serpentine,” shown below:



Pet. at 15, 17. In the first, the fluid circles a radius drawn from the central chamber to a point in the outer shell. Petitioner asserted that this example is how “radially serpentine” is described “in lines 34-37 of column 4 of the ’750 Patent.” Pet. at 15. Figure 2 depicts what Petitioner’s expert characterized as “the radially serpentine fluid pathway illustrated in FIG. 14.” Ex. 1013, ¶ 128. Petitioner asserted that this example is also “radially serpentine” because, during prosecution, the applicant represented that Figure 14 disclosed a radially serpentine fluid pathway. Pet. at 16-17.

In its Institution Decision, the Board rejected Petitioner’s argument that a radially serpentine flow “requires two or more changes of direction” or that it “only flows outwardly along a radius of the off axis chamber.” Institution Decision (Paper 7) at 12-13. Thus, the Board preliminary construed “radially serpentine” as “a back

and forth flow around a radius of the off axis chamber.” *Id.* at 14. In the course of making its decision, however, the Board stated that it “disagree[d] with the Applicant’s assertion during prosecution that Figure 14 illustrates a device with a radially serpentine fluid pathway,” despite Petitioner’s and its expert’s contrary understanding. *Id.* at 14. The Board found that “the flow described [in Figure 14] flows *circumferentially* about the central chamber, not radially,” despite the patent never using the word “circumferential.” *Id.* (emphasis in original).

Patent Owner filed a Patent Owner Response, in which it defended only certain claims of the ’750 Patent, and a Motion to Amend, in which it sought to non-contingently amend certain claims and contingently amend others. Papers 17, 18. Patent Owner agreed with the Board that “radially serpentine” means “a back and forth flow around a radius of the off axis chamber” in view of the specification and prosecution history. Patent Owner Response (Paper 17) at 10, 12-16. But Patent Owner made clear that, contrary to the Board’s Institution Decision, Figure 14 depicted “radially serpentine” flow because such an interpretation was supported by the specification, file history, and Petitioner itself. *Id.* at 13-16.

In Reply, Petitioner changed its tune. Petitioner acknowledged that it and its expert initially “identified a radially serpentine fluid pathway illustrated in Fig. 14 that serpentine back (*i.e.*, counterclockwise) and forth (*i.e.*, clockwise) while advancing radially outward through a series of annular spaces that are connected and

progressively larger.” Petitioner’s Reply (Paper 20) at 10-11. Yet, in a clear attempt to obtain a benefit in district court litigation between the parties, SilencerCo decided that it agreed with the Board’s erroneous construction. It stated: “Since filing the Petition, Petitioner has reviewed the Board’s ID and the reasons supporting the Board’s preliminary construction of the fluid flow of Fig. 14 as ‘circumferential,’” and “[i]n view of the Board’s reasoning for the distinction between ‘radially serpentine’ and ‘circumferential’ fluid flow, Petitioner agrees with the Board.” *Id.* at 12. In view of its newfound view of the claims, Petitioner withdrew five of the grounds in its Petition “contingent upon the Board’s holding with respect to the definition of ‘radially serpentine.’” *Id.* at 24-25. And, in its Surreply to Patent Owner’s Motion to Amend, Petitioner relied on its new understanding of “radially serpentine” to oppose Patent Owner’s Motion to Amend. *See* Petitioner’s Sur-Reply to MTA (Paper 34) at 4-8.

In its Final Written Decision, the Board upheld the patentability of every claim that Patent Owner defended, and it granted Patent Owner’s Motion to Amend with respect to every proposed substitute claim that was not contingent on the unpatentability of a surviving claim except for one. FWD (Paper 43) at 56-57. However, the Board doubled down on its unduly narrow understanding of “radially serpentine.” The Board characterized the flow shown in Figure 14 as “around a longitudinal axis of the chamber,” not “around a radius of the chamber,” and stated

that this is “circumferential[]” flow. *Id.* at 15-16. The Board believed that the prosecution history supported this result. It recognized that, during prosecution, “[t]he Applicant argued that ‘radially serpentine’ means the ‘fluids travel in an alternating clockwise to counterclockwise pattern’ and the ‘fluid would flow back and forth from clockwise to counter-clockwise around the axis as described in page 7, lines 20-22.’” *Id.* at 16 (quoting Ex. 1004 at 93). Yet the Board stated that it understood “the Applicant’s use of ‘the axis’ of rotation to refer to the ‘radius of the off axis chamber,’” and thus “the Applicant interpreted a ‘radially serpentine’ fluid pathway to require the fluid to flow back and forth from clockwise to counterclockwise around the radius of the off axis chamber.” *Id.* Finally, the Board found that “[t]he depicted flow of fluids is ‘around the central chamber within the off axis chamber,’ which, when also considering the fluid movement along a length of the off axis chamber,’ the ’750 patent refers to as ‘a helical fluid pathway.’” *Id.* Based on this understanding, the Board accepted Petitioner’s concessions that certain prior art did not teach a “radially serpentine” flow path, and it accepted Petitioner’s withdrawal of entire grounds in the Petition on the same basis. *Id.* at 24, 28, 33-37.

II. ARGUMENT

The Director should review and correct the Board’s incorrect interpretation of “radially serpentine.” A request for Director review is appropriate when a decision presents “(a) an abuse of discretion, (b) important issues of law or policy, (c)

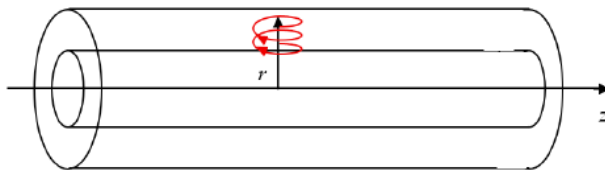
erroneous findings of material fact, or (d) erroneous conclusions of law.” Director Review Process, § 2.B, <https://www.uspto.gov/patents/ptab/decisions/director-review-process>. The Board’s incorrect claim construction presents an erroneous conclusion of law. And, because the Board’s error is not immediately correctable by the Federal Circuit, this case presents important policy issues—failing to correct the Board’s error would undermine the public notice function that patents and their prosecution histories are supposed to provide.

A. The Director Should Correct the Board’s Incorrect Interpretation of “Radially Serpentine.”

The Board’s construction of “radially serpentine” is legally erroneous. While the Board correctly defined “radially serpentine” as “a back and forth flow around a radius of the off axis chamber,” it incorrectly concluded that the flow shown in Figure 14 is not a radially serpentine flow. FWD (Paper 43) at 14-17. The Board, instead, appears to believe that a “radially serpentine” path is only a flow path that circles a radius drawn from the central chamber to a point in the outer shell and changes directions at least once.¹ In other words, the Board appears to believe that a “radially

¹ To be clear, while the pathway of Figure 14 would cause fluids to move outward from the center of the device, there is no basis to conclude that fluids must advance outwardly along a radius. Indeed, Petitioner abandoned this argument, and the Board rejected it. ID (Paper 7) at 13-14; Petitioner’s Reply (Paper 20) at 16 n.9.

serpentine” pathway encompasses only a pathway like the one illustrated below (omitting a change of direction for clarity).

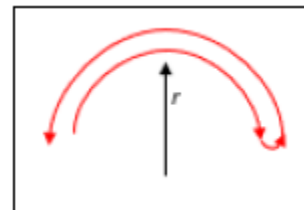


See Ex. 2003, ¶ 32. This construction is inconsistent with the specification, the prosecution history, and the understanding of both POSITAs in this IPR.

The '750 patent discloses two embodiments of a “radially serpentine” fluid pathway. It first discloses that a “radially serpentine” pathway can be one “which causes the fluids to flow back and forth around a radius of the off axis chamber.” Ex. 1001, 4:34-37. It also discloses that a “radially serpentine” path can be one “which causes the fluids to flow back and forth around a radius of the off axis chamber *while also traversing a length of the off axis chamber.*” *Id.*, 4:37-41 (emphasis added). If a “radially serpentine” pathway were one that required rotation encircling a radius, as the Board believes, then fluid would never be able to “travers[e] a length of the off axis chamber,” and the construction of “radially serpentine” would improperly exclude a preferred embodiment. See *Funai Elec. Co. Ltd. v. Daewoo Elecs. Corp.*, 616 F.3d 1357, 1371 (Fed. Cir. 2010). Indeed, dependent claim 2 requires that the “common off axis chamber comprises a plurality of sub-chambers . . . each with the radially serpentine fluid pathway.” Ex. 1001, cl.2 And there is no doubt that claim 2 is intended to cover Figure 14. But under the Board’s construction, it would not.

Understanding “radially serpentine” to include the flow path of Figure 14 would ensure that both definitions (and Figure 14) are claimed. Ex. 2003, ¶¶ 33-34.

The Board appears to understand the word “around” in its construction as requiring rotation of fluids such that they encircle an imaginary line drawn from the central chamber to the outer shell. But “around” does not require rotation. For example, Merriam-Webster online provides several definitions of “around,” including “in, along, or through a circuit,” “here and there: from one place to another,” and “in or to an opposite direction or position,” none of which require rotation. Ex. 2004. A flow path in which fluids move from one side of a radius to another in a cylindrical suppressor, like that shown to the right and in Figure 14, thus fit within the definition of “around” a radius. Even if “around” did imply rotation, such a flow indeed rotates around the radius, as shown in the image above. *See* Ex. 2003, ¶¶ 35-36.



Any ambiguity about what it means for fluid to move “around” a radius is dispelled by the prosecution history. When the applicant added the term “radially serpentine” to the independent claims, it made clear that Figure 14 provides support for “radially serpentine.” Ex. 1004 at 093 (“Support for radially serpentine can be found at page 7, lines 21-24 and FIG. 14). And it described “radially serpentine flow” as one “in which fluid would flow back and forth from clockwise to counter-clockwise around the axis *as described in page 7, lines 20-22 and shown in figure 14 (see units*

500, 505 and 510.).” *Id.* (emphasis added). The applicant proceeded to distinguish prior art based on this understanding of “radially serpentine,” arguing that a prior art reference that disclosed fluids spiraling throughout the length of the device was not “radially serpentine” because “the spiraled direction is only one direction (i.e. clockwise but not counterclockwise).” *Id.* at 94-95.

This portion of the file history also reveals why the Board was incorrect when it referred to Figure 14 as a “helical fluid pathway.” FWD (Paper 43) at 16. A “helical fluid pathway . . . causes the fluids to spiral around the central chamber within the off axis chamber along a length of the off axis chamber.” Ex. 1001 at 4:41-44. But, when that pathway changes directions, it becomes “radially serpentine,” as the prosecution history makes clear. Ex. 1004 at 94-95.

The Board erroneously dismissed the prosecution history because it understood “the Applicant’s use of ‘the axis’ of rotation to refer to the ‘radius of the off axis chamber.’” FWD (Paper 43) at 16. Not only is this understanding inconsistent with the applicant’s statement that Figure 14 shows a “radially serpentine” pathway, it ignores that the applicant later made clear that the “axis” he was referring to was the longitudinal axis: “This axially serpentine flow is different from radially serpentine flow in which fluid would flow back and forth from clockwise to counterclockwise *around the longitudinal axis* as described in page 7, lines 20-22 and shown in Figure 14 (see units 500, 505 and 510).” Ex. 1004 at 054 (emphasis added). The Board’s

understanding of the prosecution history was thus incorrect. When properly understood, the specification and file history make clear that Figure 14 shows a flow that is “radially serpentine.” *See Univ. of Mass. v. L’Oreal S.A.*, 36 F.4th 1374, 1379 (Fed. Cir. 2022) (internal quotation marks omitted) (“The prosecution history, in particular, may be critical in interpreting disputed claim terms, and even where prosecution history statements do not rise to the level of unmistakable disavowal, they do inform the claim construction. . . . We conclude that the claim language is not plain in the respect at issue and that the proper interpretation is determined by the specification and, most pointedly, by the prosecution history.”).

Finally, the Board ignored that both POSITAs that provided opinions in this case concluded that the flow shown in Figure 14 is “radially serpentine.” Patent Owner’s expert, who has a Ph.D. in fluid mechanics, opined that Figure 14 depicts a “radially serpentine” flow. *See* Ex. 2001, ¶¶ 9, 58-62, 176; Ex. 2003, ¶¶ 32-40. And, as explained above, Petitioner’s own expert opined that the flow shown in Figure 14 is “radially serpentine.” In his declaration accompanying the Petition, he recognized that “[i]n the ’750 Patent’s prosecution history, the patent owner explicitly references FIG. 14 (see below) as illustrating a radially serpentine fluid pathway,” and that “the radially serpentine fluid pathway in FIG. 14 is a pathway that serpentine back (*i.e.*, counterclockwise) and forth (*i.e.*, clockwise) while advancing radially outward through a series of annular spaces that are connected and progressively larger.” Ex.

1013, ¶ 128. The Board erroneously gave no weight to the unanimous view of the applicant and these POSITAs, despite that claim construction is performed from the perspective of a POSITA. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). The Director should correct the Board’s understanding and hold that “radially serpentine” includes a back-and-forth flow around a longitudinal axis, as shown, for example, in Figure 14.

B. Director Review Is Important to Maintain the Public Notice Function of Patents.

It is important that the Director correct the Board’s error. The Federal Circuit has repeatedly recognized that patents and their intrinsic records serve a public-notice function, and the law related to claim construction reflects that function. *See, e.g., Phillips*, 415 F.3d at 1319 (holding that undue reliance on extrinsic evidence may “undermin[e] the public notice function of patents”); *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1360 (Fed. Cir. 2017) (extending prosecution disclaimer to IPR proceedings to “promote[] the public notice function of the intrinsic evidence”) (quoting *Omega Eng’g, Inc. v. Raytex Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003)).

Allowing the Board’s decision to stand, however, would undermine this function because the Board’s error is not immediately correctable by the Federal Circuit. Patent Owner prevailed on every claim in this IPR except for one of its proposed substitute claims, and the Board rejected that one claim because it found it to be broader than the original claim, not because of the meaning of “radially

serpentine.” FWD (Paper 43) at 44-45. The Federal Circuit “employ[s] a prudential rule that the prevailing party in a lower tribunal cannot ordinarily seek relief in the appellate court,” so the Federal Circuit would not correct the Board’s claim construction error if Patent Owner appealed. *See SkyHawke Techs., LLC v. DECA Int’l Corp.*, 828 F.3d 1373, 1375 (Fed. Cir. 2015). Thus, absent Director review, the Board’s opinion will be the last word until a court expresses its own view. Allowing the Board’s opinion to stand thus may mislead the public as to the scope of the ’750 patent, undermining the public-notice function of the ’750 patent and its file history.

Petitioner itself is already attempting to take advantage of the Board’s construction. It contends that it does not infringe the ’750 patent under the Board’s construction, and it asserts (incorrectly) that the Board’s construction is preclusive in the parties’ district-court litigation. The Director should step in to ensure that the Board’s incorrect claim-construction ruling is not misused in this way.

III. CONCLUSION

The Director should review the Board’s Final Written Decision with respect to its understanding of “radially serpentine” and make clear that a back-and-forth flow around a longitudinal axis, as shown, for example, in Figure 14, is a “radially serpentine” pathway. Upon correction of the Board’s error, the Director should remand to the Board to re-examine the parties’ arguments using the correct understanding of “radially serpentine.”

Dated: January 16, 2026

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CERTIFICATE OF COMPLIANCE WITH PAGE LIMITS

Pursuant to 37 C.F.R. § 42.24(d), I certify that this Response complies with the page limit requirements of 37 C.F.R. §§ 42.24(a)(1)(v) and 37 C.F.R. § 42.75(c)(2) because it contains 15 pages, excluding the parts of that are exempted.

Dated: January 16, 2026

By: /s/ Brent N. Bumgardner

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CERTIFICATE OF SERVICE

I hereby certify that on January 16, 2026 a copy of Patent Owner's Request for Director Review of Final Written Decision Under 37 C.F.R. § 42.75 has been served in its entirety via email on the following:

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