

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.

IPR2024-01214

Patent 8,286,750 B1

**PETITIONER’S AUTHORIZED RESPONSE TO DIRECTOR REVIEW
REQUEST**

Table of Contents

I.	INTRODUCTION	1
II.	BACKGROUND	2
III.	ARGUMENT.....	4
	A. HuxWrx’s Requested Relief Would Destroy Public Notice	4
	B. HuxWrx’s Proposed Construction Is Unmoored From the Patent’s Own Lexicography and Prosecution History.	7
	C. HuxWrx Seeks to Expand “Radially Serpentine” To Cover Any Flow Path.....	14
IV.	Conclusion	15
	Certificate Of Service.....	17

I. INTRODUCTION

The Director should deny HuxWrx's Request for Director Review because the Board's careful, thorough, and reasoned analysis of the claim's meaning is correct. Although the Board affirmed the validity of *every* original claim HuxWrx chose to defend and all but one proposed substitute claim, HuxWrx now seeks to have its cake and eat it too by seeking to upend one of the lynchpins upon which the validity of the confirmed claims rests. Indeed, the disputed claims (both original and amended) were confirmed in large part *because of* the Board's careful analysis and correct interpretation of the term "radially serpentine." Adopting HuxWrx's broad interpretation of "radially serpentine" would undermine not only the validity of the disputed claims by capturing fluid flow disclosed by the prior art, but also public notice by divorcing the meaning of that term from the intrinsic evidence.

The Board carefully considered all intrinsic evidence as well as the extrinsic evidence of record (including HuxWrx's general dictionary definitions) to correctly construe "radially serpentine" to mean what the '750 Patent itself says: a back-and-forth flow around a radius of the off-axis chamber. The Board also correctly held that Figure 14 does not depict a radially serpentine flow but, rather, a circumferential (and, when combined with axial travel, helical) flow around the longitudinal axis. HuxWrx's proposed construction, if adopted, would: unmoor the

term from the patent's own lexicography and prosecution history, expand "radially serpentine" to cover virtually any flow path at the expense of public notice and require re-litigation of the validity of both the original and amended claims, as HuxWrx's construction would sweep in longstanding prior art flows.

For these reasons, policy strongly counsels against Director intervention. The Director should deny review.

II. BACKGROUND

Over the course of this proceeding, the validity of the challenged claims ultimately turned on one intrinsic, dispositive question: what does "radially serpentine" mean in the '750 Patent? At institution, the Board construed "radially serpentine" based on the patent's express definitional language, *i.e.*, a pathway that causes fluids "to flow back and forth around a radius of the off axis chamber."). (ID (Paper 7) at 11–14.) The specification delineates and separately defines other flow types, such as "axially serpentine" (flow that travels "back and forth along a length of the off axis chamber") and a "helical fluid pathway" (flow that spirals around the central chamber along a length). (*Id.* (discussing construction and the patent's taxonomy).) The Board rejected efforts to add extra narrowing requirements (such as "advance outwardly" or mandatory multiple direction changes) and avoided "pile on" limitations, focusing instead on enforcing the one boundary the patent itself defines: "around a radius." (ID (Paper 7) at 13–14

(rejecting “advance outwardly”), 12–13 (rejecting additional direction-change requirement).)

The Board also rejected HuxWrx's repeated attempts to characterize Figure 14 as depicting “radially serpentine” flow. The Board explained that the text discussing Figure 14 neither used the term “radially serpentine” nor described the fluid flow in the same way the '750 Patent described radially serpentine flow. Instead, that text describes flow through annular spaces between concentric cylinders, *i.e.*, flow that is circumferential about a *longitudinal axis*, not

Notably, HuxWrx initially agreed that “radially serpentine” means “a back and forth flow around a radius of the off axis chamber,” but then pushed a contrary meaning—a “back and forth flow path around a longitudinal axis” (*i.e.*, a “circumferentially serpentine pathway”)—to support its amendment positions. (MTA PG at 5–6.) At the hearing, the record revealed HuxWrx's ultimate goal: a construction under which “*any* fluid flow” would qualify as “radially serpentine,” thus removing the term as an obstacle to proving infringement in the underlying litigation. (Hearing Tr. at 15:9–16:10.)

In the Final Written Decision, the Board reaffirmed both its previous construction and previous factual conclusion: Figure 14 depicts flow “around a longitudinal axis of the chamber” (*i.e.*, circumferential flow) and not flow “around a radius of the chamber” as required for “radially serpentine.” (FWD (Paper 43) at

15–16.) The Board further explained that, when the circumferential/axis-based movement shown in Figure 14 is considered “along a length,” the specification labels that a “helical fluid pathway,” confirming that Figure 14’s structure does not result in radially serpentine flow under the patent’s own definitional structure. (FWD (Paper 43) at 16.)

III. ARGUMENT

A. HuxWrx’s Requested Relief Would Destroy Public Notice

1. HuxWrx’s Requested Relief, Not The FWD, Would Destroy Public Notice.

HuxWrx argues that allowing the Board’s opinion to stand may “mislead the public” because Federal Circuit review may be unavailable to a prevailing party, and because Petitioner allegedly seeks to “take advantage” of the Board’s construction elsewhere. (Req. at 14–15.) The record demonstrates the opposite: it is HuxWrx’s expansive construction that threatens the notice function.

The Board’s construction is rooted in the patent’s explicit definitional language: “radially serpentine” requires “back and forth” flow “around a radius of the off axis chamber.” (EX1001 at 4: 34–37.) The patent separately defines other flow types, including “axially serpentine” and “helical” (spiraling around the central chamber along a length). (*Id.* at 4:41–44.) Notably, during prosecution of the application resulting in the ’750 Patent, HuxWrx amended the claims that issued as independent claims 1 and 19 to recite that the serpentine fluid pathway

“is at least one of axially serpentine and radially serpentine.” Ex. 1004, 88, 90; *id.* at 40 (presenting the final claim numbering). In its prosecution argument, HuxWrx confirmed the correct meaning of “radially serpentine” by stating that 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 93. To be clear, the “axis” referred to by HuxWrx in this sentence was *the radius* of the off axis chamber. (*Id.* (page 7, lines 20–22 corresponding to EX1004 at 4:34–37).) As a result, the intrinsic prosecution history as argued by HuxWrx itself confirms the Board’s correct interpretation and provides clear meaning to the term.

HuxWrx’s requested relief would blur if not erase the boundaries HuxWrx itself created to obtain its patent. The record shows how HuxWrx’s interpretive drift, anchored in multiple, generalized dictionary senses of “around,” leads to a construction so broad as to cover anything, including circumferential and helical patterns the patent separately distinguished. (Petitioner’s MTA Sur-Reply at 4–5 (noting HuxWrx’s attempt to recast “radially serpentine” as covering virtually any pattern, including “axial, circumferential, helical, and even random turbulence”).)

A construction that would encompass “any” flow pattern is the antithesis of public notice. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, (2014) (“[A] patent must be precise enough to afford clear notice of what is claimed, thereby apprising the public of what is still open to them. Otherwise there would be a zone

of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims.”) In contrast, the Board’s approach—which enforces the patent’s own definitional structure and rejects efforts to conflate distinct categories—safeguards notice. (ID (Paper 7) at 11–14; FWD (Paper 43) at 14–17.)

Additionally, in explaining at length that HuxWrx prevailed before the Board, the Request betrays HuxWrx’s real aim: not to correct an outcome in this IPR, but to obtain a broader construction for strategic use elsewhere. Indeed, HuxWrx asserts Petitioner is attempting to “take advantage” of the Board’s construction in district court and is asserting preclusion. (Req. at 14–15.) By “tak[ing] advantage,” HuxWrx means that Petitioner intends to consistently apply the exact same definition of “radially serpentine” in parallel litigation as the meaning found by the Board and used to uphold the validity of HuxWrx’s claims.

At bottom, the record shows that expanding “radially serpentine” to include circumferential longitudinal-axis flow would collapse the patent’s internal taxonomy and create greater public uncertainty, not less. (ID (Paper 7) at 11–14; FWD (Paper 43) at 14–17.)

2. HuxWrx’s Requested Relief Would Necessarily Require This Entire Proceeding To Start Over From Scratch.

HuxWrx asks the Director to broaden “radially serpentine” to include “back-and-forth flow around a longitudinal axis,” then remand for the Board to “re-examine” the issues under that broadened understanding. (Req. at 13–15.) In other

words, HuxWrx seeks not a narrow corrective tweak but a full-blown re-litigation of the entire proceeding.

The record confirms that the Board's construction drove party positions and the decision's merits framework. Under the Board's construction, Petitioner conceded Thurler did not disclose a radially serpentine flow required by claim 9. (FWD (Paper 43) at 24.) Under the same construction, Petitioner withdrew entire grounds tied to "radially serpentine" involving Barlowatz, Reeves, and Eichenseher. (FWD (Paper 43) at 33–37.) Those are not trivial points; they show why HuxWrx's requested rewrite would destroy the trial record and the decision's logic. Should the Director grant HuxWrx's requested review and adopt its proposed construction, the entire IPR proceeding would need to be restarted with this construction, new grounds of invalidity asserted, and ultimately, a new trial undertaken to address the prior art in light of this broadened construction.

B. HuxWrx's Proposed Construction Is Unmoored From the Patent's Own Lexicography and Prosecution History.

1. HuxWrx's Figure 14 Argument Is Wrong.

HuxWrx argues the Board "correctly defined" "radially serpentine" as "a back and forth flow around a radius of the off axis chamber," but then supposedly erred in concluding Figure 14 is not radially serpentine. (Req. at 9.) The record shows the Board's conclusion about Figure 14 was not an "error." Instead, the Board simply compared the term's express definition to the fluid flow described in

connection with Figure 14, which led to the inescapable conclusion that Figure 14 does not depict or describe a “radially serpentine” flow.

At institution, the Board squarely addressed the very point HuxWrx now presses: the applicant's assertion during prosecution that Figure 14 illustrated radially serpentine flow. The Board disagreed, explaining that the Figure 14 discussion “does not mention a ‘radially’ serpentine flow,” and instead describes flow through annular spaces between concentric cylinders; “[t]hus, the flow described here flows circumferentially about the central chamber, not radially.” (ID (Paper 7) at 14.) The Board then adopted the same construction that was *expressly* set forth in the specification and which the Board used throughout the case: “radially serpentine” means “a back and forth flow around a radius of the off axis chamber.” (ID (Paper 7) at 14.)

In the briefing and at the hearing, Petitioner addressed Figure 14 in light of the same intrinsic terms relied upon by the Board: the Figure 14 passage describes “concentric incomplete cylinders,” with offset gaps that cause gases to move “in a circumferential way,” expanding from one larger circumference to the next, but “does not mention a radius at all” and is “altogether different ... a circumferential flow.” (Hearing Tr. (Paper 42) at 10:20–13:3.)

At final decision, the Board reaffirmed the same point, explaining that Figure 14's depicted flow is “around a longitudinal axis” (i.e., circumferential) and

therefore “not around a radius of the chamber,” which is required for “radially serpentine.” (FWD (Paper 43) at 15–16, 12–17 (construction discussion).)

HuxWrx's claimed “error” is therefore not an error at all. It is simply HuxWrx's disagreement with the intrinsic record, its own statements during the prosecution history and the Board's consistent conclusion that Figure 14 discloses circumferential, not radially serpentine flow. (ID at 14; FWD at 15–16.)

2. HuxWrx's “Traversing A Length” Argument Fails.

HuxWrx asserts the Board “appears to believe” radially serpentine requires a path that “encircles” a radius and changes direction, and that such a view would make it impossible to “travers[e] a length of the off axis chamber,” supposedly excluding a preferred embodiment. (Req. at 9–10.) This is incorrect.

First, the Board expressly recognized the specification language that radially serpentine can be “around a radius ... while also traversing a length.” (ID (Paper 7) at 11 (quoting Ex. 1001, 4:34–41).) The Board did not add an “encircling”¹ requirement that makes traversing length impossible, but rather applied the patent's own language and then evaluated Figure 14 against that language.

¹ HuxWrx accuses the Board of improperly implying the word “encircling,” yet during prosecution when distinguishing prior art, HuxWrx emphasized that radially serpentine means “fluid would flow back and forth from **clockwise to counter-clockwise around the axis** as described in page 7, lines 20-22 [referring to the radius].” Ex. 1004 at 93 (emphasis added). Thus, it was HuxWrx who emphasized the “encircling” nature of “radially serpentine” fluid flow. The Board simply applied it.

Second, the Board rejected the very sort of extra limitations HuxWrx accuses the Board of imposing. HuxWrx itself notes Petitioner abandoned an “advance outwardly” requirement the Board rejected. (Req. at 9 n.1 (citing ID at 13–14).) As such, the Board declined to pile on extra constraints. Instead, the Board was enforcing the one constraint the patent actually defines: “around a radius of the off axis chamber.” (ID at 11–14; FWD at 12–17.)

Third, the “preferred embodiment” rhetoric depends on HuxWrx’s circular premise that Figure 14 depicts a radially serpentine flow.² The Board rejected that premise based on the intrinsic record: Figure 14 and the corresponding text do not depict or describe radially serpentine flow and instead depict and describe circumferential flow. (ID (Paper 7) at 14; FWD (Paper 43) at 15–16.) A construction does not “exclude” an embodiment merely because the proponent wants to label it with a claim term the intrinsic record does not support

Finally, HuxWrx’s “traverse a length” argument is a strawman. The Board’s construction requires “back and forth around a radius”; it does not forbid axial movement. (Paper 7 at 11–14; Paper 22 at 5–6.) HuxWrx’s own expert admitted that “any movement of any distance along the longitudinal axis of the device

² HuxWrx asserts that “there is no doubt that claim 2 is intended to cover Figure 14.” (Req. at 10.) However, the language of claim 2 belies this point, as elements of Claim 2, such as common off-axis chamber, plurality of sub-chambers, and radially serpentine pathway, are not used to describe Fig. 14. (EX1001 at 9:1–20.)

necessarily traverses a length of the device.” (MTA Sur-reply (Paper 34) at 7–8 (citing EX1040, 45:3–18).) Thus, the premise of HuxWrx’s critique, that “around a radius” necessarily excludes “traversing a length,” fails on HuxWrx’s own expert’s testimony. The real problem for HuxWrx is not the Board’s construction; it is that the patent never describes Figure 14 as having the defined “back and forth around a radius” behavior, whether or not some axial movement also occurs. (FWD (Paper 43) at 15–16; ID (Paper 7) at 14.)

3. The Board Considered HuxWrx’s Prosecution History Argument And Reasonably Concluded The Prosecution History Cannot Rewrite The Patent’s Intrinsic Definitions.

HuxWrx relies heavily on certain statements during prosecution asserting that Figure 14 provides support for “radially serpentine.” (Req. at 11–12 (citing Ex. 1004 at 54, 93–95).) The Board expressly considered the cited statement and treated the assertion appropriately in light of the entire file history. (FWD (Paper 43) at 15–16 (citing HuxWrx’s prosecution history statements describing “radially serpentine” as alternating clockwise to counterclockwise around the radial axis).)

At institution, the Board addressed the applicant’s assertion that Figure 14 illustrates radially serpentine and explained why it disagreed: the Figure 14 discussion “does not mention a ‘radially’ serpentine flow,” instead describing circumferential flow through annular spaces between concentric cylinders; “[t]hus, the flow described here flows circumferentially about the central chamber, not

radially.” (ID (Paper 7) at 14.) The Board then adopted the construction rooted in the only definitional language in the specification: “radially serpentine” means “a back and forth flow around a radius of the off axis chamber.” (*Id.* at 11, 14.)

In the FWD, the Board again considered HuxWrx's prosecution argument and declined to alter the intrinsic meaning on that basis. As the Board explained, the applicant's use of “the axis” referred to the “radius of the off axis chamber,” and the patent separately defines “helical fluid pathway” for flow that spirals around the central chamber along a length—the type of fluid flow HuxWrx now seeks to redefine as “radially serpentine.” (FWD (Paper 43) at 16 (prosecution discussion); *see also* ID (Paper 7) at 11 (helical separately defined) and FWD (Paper 43) at 14–16 (distinguishing “helical” and rejecting conflation with “radially serpentine”).)

In sum, HuxWrx's Request asks the Director to elevate cherry-picked prosecution statements above other prosecution statements that contradict HuxWrx's position, above the patent's definitional structure, above the entirety of the intrinsic record, and above the Figure 14 disclosure itself. But the Board considered those statements and both properly and reasonably refused to use them to erase intrinsic boundaries. (ID (Paper 7) at 11–14; FWD (Paper 43) at 12–17.)

4. HuxWrx's “Helical Becomes Radially Serpentine When It Changes Direction” Theory Contradicts The Intrinsic Definitional Structure.

HuxWrx argues that when a “helical” flow “changes directions,” the flow becomes “radially serpentine,” and faults the Board for referring to Figure 14 as helical/circumferential. But the intrinsic record, on which the Board relied, defines these terms as distinct categories. Nowhere does the intrinsic record support HuxWrx’s expansive view, which would eviscerate these distinct categories.

At institution, the Board noted that the patent does not label the “spiral around the central chamber ... along a length” pathway “radially serpentine,” but instead as a “helical fluid pathway.” (ID (Paper 7) at 11.) The Board reinforced that definitional distinction in the FWD, explaining that a flow “around the central chamber within the off axis chamber” along a length is the type of movement the patent separately defines as “helical,” and explained that Figure 14’s disclosure does not satisfy “around a radius.” (FWD (Paper 43) at 15–16.)

HuxWrx’s change-of-direction theory is not found in the patent’s definitional text. Instead, that theory is a litigation-driven attempt to merge distinct intrinsic categories to capture Figure 14. The Board properly rejected that conflation. (ID (Paper 7) at 11; FWD (Paper 43) at 14–16.)

5. HuxWrx’s “Unanimous POSITA” Argument Is Both Overstated And Legally Beside The Point.

HuxWrx claims both POSITAs agreed Figure 14 is radially serpentine and faults the Board for giving “no weight” to that view. (Req. at 12–14.) The record

does not support HuxWrx's framing, and in any event the Board correctly anchored its construction in intrinsic evidence.

First, the Board's job is to construe claims in view of the intrinsic record; experts do not override the patent's definitional structure. The Board relied on the specification's express definition and its separate "helical" definition to avoid conflation. (FWD (Paper 43) at 14–17.) Second, the Board did not "ignore" the record; it evaluated Figure 14 against the intrinsic definition and the Figure 14 disclosure itself, which, as the Board found, describes circumferential flow and does not mention radially serpentine or radius. (FWD (Paper 43) at 15–16.)

C. HuxWrx Seeks to Expand "Radially Serpentine" To Cover Any Flow Path

1. HuxWrx's Dictionary-Driven "Around" Argument Is Exactly The Overbreadth The Board Correctly Rejected.

HuxWrx argues "around" does not require rotation and offers multiple, general dictionary definitions of "around" to claim that a flow path like Figure 14 fits "around" a radius. (Req. at 10–11 (citing Ex. 2004).) That is precisely the approach that, on this record, destroys public notice.

The record reflects HuxWrx's shifting definitions culminating in general purpose dictionary definitions so broad that "under their definition of radially serpentine, it can mean anything." (Hearing Tr. (Paper 42) at 13:19–19, 15:9–16:10.) And Petitioner's Sur-Reply to the MTA identified the same overbreadth:

HuxWrx's approach tries to recast "radially serpentine" as an umbrella for "virtually any pattern—axial, circumferential, helical, and even random turbulence—by cherry-picking general dictionary definitions of 'around,'" which would "swallow the limitation whole." (MTA Sur-Reply at 4–5.)

The Board's construction avoids that result by doing what claim construction requires: applying the patent's express definitional language and respecting the patent's distinct definitions for other flow types. (ID (Paper 7) at 11 (radially serpentine definition; helical separately defined); FWD (Paper 43) at 14–17 (same); *see also CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) ("In the absence of any evidence to the contrary, we must presume that the use of . . . different terms in the claims connotes different meanings.") Under that intrinsic framework, HuxWrx's dictionary approach is not clarifying; it is an attempt to expand "radially serpentine" until the claim language has no meaningful boundary—a result that undermines public notice of that term.

IV. CONCLUSION

For all these reasons, the Director should **DENY** HuxWrx's Request for Director Review.

Respectfully submitted:

By: /Philip W. Harris/
Philip W. Harris

On: January 26, 2026

For: Petitioner

Holland & Hart LLP

222 South Main Street, Suite 2200

Salt Lake City, UT 84101

Tel: 801.799.5767

Email: pwharris@hollandhart.com

CERTIFICATE OF SERVICE

Under 37 C.F.R. §§ 42.6, 104, and 105, the undersigned certifies that a copy of this Authorized Response to Director Review Request and all associated exhibits have been electronically¹ served, as of the date noted below on counsel for Patent Owner as follows:

Brent Bumgardner (brent@nelbum.com)
David DeZern (david@nelbum.com)
Hux-IPR (Hux-IPR@nelbum.com)
NELSON BUMGARDNER CONROY PC

Respectfully submitted:

By: /Philip W. Harris/
Philip W. Harris
On: January 26, 2026
For: Petitioner

Holland & Hart LLP
222 South Main Street, Suite 2200
Salt Lake City, UT 84101
Tel: 801.799.5767
Email: pwharris@hollandhart.com

¹ Pursuant to 37 C.F.R. § 42.105, the parties have agreed to electronic service.