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WESTERN DISTRICT OF TEXAS
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IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

CONCRETE SUPPORT SYSTEMS, LLC, §
PLAINTIFF, §
V. §
BOND FORMWORK SYSTEMS, LLC §
AND BRADLEY BOND, §
DEFENDANTS. §
§

CAUSE NO. 1:20-CV-1150-LY

MEMORANDUM OPINION AND ORDER ON CLAIMS CONSTRUCTION

Before the court are the parties’ Joint Claim Construction Statement filed July 8, 2021 (Doc. #26), Plaintiff Concrete Support Systems, LLC’s (“Concrete Support”) Claim Construction Brief (Doc. #29), Defendants Bond Formwork Systems, LLC and Bradley Bond’s (collectively, “Bond”) Opening Claim Construction Brief (Doc. #30), Concrete Support’s response (Doc. #32), and Bond’s reply (Doc. #31).

The court held a claim-construction hearing on October 26, 2021. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). The court renders this memorandum opinion and order to construe certain terms of United States Patent No. 10,024,069 (“’069 Patent”). Having considered the patent, prosecution history, applicable law, briefing, and arguments of counsel, the court renders the following claim-construction order.

I. Introduction

Concrete Support sues Bond for infringement of the ’069 Patent, entitled “Construction Prop Assembly.” The ’069 Patent involves technology relating to scaffolding or “shoring” systems, which provide temporary support in construction projects while concrete hardens. Once

the concrete dries and achieves the desired level of strength, the shoring system components are removed, revealing newly formed concrete structures that no longer require support and can hold loads.

Shoring systems include support shafts, crossbeams, platforms, and other components depending on the needs of the construction project. The unit of fitted-together components is called the “assembly,” and the assembly used for “propping” up concrete forms is called a “prop assembly.”

Construction projects sometimes require shoring systems for horizontal concrete forms at differing heights. Previously, shoring systems required multiple prop assemblies to support multiple platform heights. The '069 Patent describes a shoring system that supports platforms of differing heights on the same prop assembly, thereby reducing the number of required components and saving costs for certain projects.

II. Legal Standard

Determining infringement is a two-step process. *See Markman*, 517 U.S. at 384 (“[There are] two elements of a simple patent case, construing the patent and determining whether infringement occurred . . .”). First, the meaning and scope of the relevant claims must be ascertained. *Id.* Second, the properly construed claims must be compared to the accused device. *Id.* Step one, claim construction, is the issue before the court.

Claim construction is “‘exclusively’ for ‘the court’ to determine.” *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 321 (2015). The court construes patent claims without the aid of a jury. *See Markman*, 517 U.S. at 391. The words of a claim “are generally given their ordinary and customary meaning.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “[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” *Id.* at 1313. The person of ordinary skill in the art is considered to have read the claim term in the context of the entire patent. *Id.* To ascertain the meaning of a claim, a court must look to the claim, the specification, and the patent’s prosecution history. *Id.* at 1314–17.

Claim language guides the court’s construction of a claim term. *Id.* at 1314. “[T]he context in which a term is used in the asserted claim can be highly instructive.” *Id.* Other claims, asserted and unasserted, can provide additional instruction because “terms are normally used consistently throughout the patent” *Id.* Differences among claims, such as additional limitations in dependent claims, can provide further guidance. *Id.* at 1314–15.

Claims must also be read “in view of the specification, of which they are a part.” *Forest Lab ’ys, LLC v. Sigmapharm Lab ’ys, LLC*, 918 F.3d 928, 933 (Fed. Cir. 2019). “[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.’” *Phillips*, 415 F.3d at 1315 (quoting *Vitronics*, 90 F.3d at 1582). In the specification, a patentee may define a term to have a meaning that differs from the meaning that the term would otherwise possess. *Id.* at 1316. In such a case, the patentee’s lexicography governs. *Id.* The specification may also reveal a patentee’s intent to disavow claim scope. *Id.* Such intention is dispositive of claim construction. *Id.* Although the specification may indicate that a certain embodiment is preferred, a particular embodiment appearing in the specification will not be read into the claim when the claim language is broader than the embodiment. *Electro Med. Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

The prosecution history is another tool to supply the proper context for claim construction because it demonstrates how the inventor understood the invention. *Phillips*, 415 F.3d at 1317. A patentee may also serve as her own lexicographer and define a disputed term in prosecuting a patent. *Home Diagnostics, Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004). Similarly, distinguishing the claimed invention over the prior art during prosecution indicates what a claim does not cover. *Spectrum Int'l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1378–79 (Fed. Cir. 1988). The doctrine of prosecution disclaimer precludes a patentee from recapturing a specific meaning that was previously disclaimed during prosecution. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). A disclaimer of claim scope must be clear and unambiguous. *Middleton, Inc. v. Minnesota Mining & Mfg. Co.*, 311 F.3d 1384, 1388 (Fed. Cir. 2002).

Although “less significant than the intrinsic record in determining the legally operative meaning of claim language,” the court may rely on extrinsic evidence to “shed useful light on the relevant art.” *Phillips*, 415 F.3d at 1317 (internal quotations omitted). Technical dictionaries and treatises may help the court understand the technology and the way one skilled in the art might use a claim term, but such sources may also provide overly broad definitions or may not be indicative of how a term is used in the patent. *See id.* at 1318. Similarly, expert testimony may aid the court in determining the meaning of a term in the pertinent field, but “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.” *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms” *Id.* Extrinsic evidence may be useful when considered in the context of the intrinsic evidence, but it cannot “alter a claim construction dictated by a proper analysis of the intrinsic evidence.” *Id.* at 1319; *On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1139 (Fed. Cir. 2004). To the extent the court “make[s] subsidiary factual findings

about th[e] extrinsic evidence,” the court construes the claims in light of those factual findings. *Teva Pharms.*, 574 U.S. at 320.

III. Analysis

The parties dispute seven claim terms. The court will address each in turn.

1. “fixed beam-head prop assemblies”

The parties’ proposed constructions of this term, as used in Claims 1, 2, 4, 6, 13, 15, and 16 of the ’069 Patent, are listed in the following table:

Plaintiff’s Construction	Defendants’ Construction
Prop assemblies comprising an upper portion, a lower portion, a variable height, and a threaded collar. ¹	Prop assemblies comprising a fixed beam-head.

The crux of the parties’ dispute on this term is whether a “fixed beam-head prop assembly” necessarily includes a fixed beam-head. Concrete Support argues that the patentee created the

¹ The proposed construction listed in the table reflects the most recent position that Concrete Support has taken on this claim term. In the joint claim-construction statement, Concrete Support proposed the following construction for “fixed beam-head prop assemblies”:

Prop assembly comprising beam-heads that are fixed into position.

“Fixed” means to be securely placed and able to support beams and panels for the purpose of pouring and supporting concrete.

“Beam-head” means a component for supporting one or more beams in position.

“Prop assemblies” means the configuration of components that allows multiple beams and panels to be supported at varying heights to allow for the pouring and support of concrete to create formworks.

Later in the claims-construction briefing, Concrete Support argued that the court should construe the term as “1) a prop assembly, consisting of 2) one or more beam-heads, that can be 3) fixed into position.” At the claims-construction hearing, Concrete Support changed its proposed construction to “prop assemblies comprising an upper portion, a lower portion, a variable height, and a threaded collar,” which reflects the definition of “fixed beam-head prop assemblies” included in the claims section of the ’069 patent.

term “fixed beam-head prop assembly” for nomenclature purposes and notes that the patentee might have used the terms “CSS prop assembly” or “Bond prop assembly” to describe the same concept. Concrete Support further argues that “fixed beam-head prop assembly” is broad enough to include a prop assembly that does not include a fixed beam-head. According to Concrete Support, the term covers any prop assembly with at least two beam-heads that can be fixed into position to support beams.

Conversely, Bond argues that a “fixed beam-head prop assembly” must include at least one fixed beam-head. Bond notes that every description and illustration of the prop assembly includes a fixed beam-head supporting a secondary beam. Bond further notes that “prop assembly” does not appear in the claims without the modifier “fixed beam-head.” Bond argues that any construction that does not include the words “fixed beam-head” would impermissibly “read out” this phrase from the claim terms. *See Convolv, Inc. v. Compaq Comput. Corp.*, 812 F.3d 1313, 1318 (Fed. Cir. 2016) (construction of term “user interface” should not read out the word “user”).

The court agrees with Concrete Support that “fixed beam-head prop assemblies” does not necessarily comprise at least one fixed beam-head. Although the patent frequently describes an embodiment comprising one fixed beam-head in the lower portion of the assembly and one drop head in the upper portion of the assembly, “fixed beam-head prop assemblies” need not be limited to this particular embodiment. *See Phillips*, 415 F.3d at 1323 (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”). The ’069 Patent does not expressly restrict the invention to a prop assembly requiring a fixed beam-head. *See Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1117 (Fed. Cir. 2004) (“[E]ven where a patent describes only a single embodiment, claims will not be ‘read restrictively unless the patentee has

demonstrated a clear intention to limit the claim scope using “words or expressions of manifest exclusion or restriction.””). The claims section of the ’069 Patent twice includes the language: “each of said one or more fixed beam-head prop assemblies comprise an upper portion, a lower portion, a variable height, and a threaded collar.” Notably, this definition of “fixed beam-head prop assemblies” does not include the term “fixed beam-head.” The court finds that a person of ordinary skill in the art, when reading the term in the context of the entire patent, would understand the term “fixed beam-head prop assemblies” as broad enough to encompass a prop assembly comprising one or more beam-heads that are fixed into position to support poured concrete. A person of ordinary skill in the art would *not* understand “fixed beam-head prop assemblies” to require at least one fixed beam-head, because the term is broad enough to encompass, for example, drop heads in both the lower and upper portions of the prop assembly.

The court construes the term “fixed beam-head prop assemblies” as **“Prop assemblies comprising an upper portion, a lower portion, a variable height, and a threaded collar.”**

2. “drop-head”

The parties’ proposed constructions of this term, as used in Claims 1, 2, 3, 4, 12, 14, and 16 of the ’069 Patent, are listed in the following table:

Plaintiff’s Construction	Defendants’ Construction
A beam-head having an end cap seat that is movable and can be fixed in more than one position along the central shaft of the beam-head component and can be lowered, or dropped, from the fixed position to allow for the removal of forming components.	Beam-head having an end cap seat that is easily removable from the central shaft of the beam-head such as by striking a star.

Concrete Support disagrees with two aspects of Bond’s construction of the term “drop head”: (1) the use of “removable” and (2) the inclusion of “by striking a star.” Bond argues that

Concrete Support's construction impermissibly broadens the term in a way that allows "drop head" and "fixed beam-head" to be used interchangeably.

At the claims-construction hearing, Bond agreed that "releasable" more accurately describes the functioning of the end cap seat in the drop head than the word "removeable." When "released," the end cap seat can move up and down the shaft before it is again "fixed" into place. The end cap seat cannot be easily detached from the shaft and therefore "removeable" does not aptly describe how the drop head functions.

Bond further agreed at the claims-construction hearing that "such as by striking a star" is unnecessary to the court's construction of the terms. After eliminating "such as by striking a star" and substituting "releasable" for "removable," the court finds the parties' constructions to be substantially similar. The court disagrees with Bond that Concrete Support's construction of "drop head" is "interchangeable" with that of "fixed beam-head," as the proposed construction of "drop head" describes how the end cap set can be easily lowered and dropped, whereas the construction of "fixed beam-head" does not. The court will combine aspects of both parties' constructions of "drop head" in the term's final construction.

The court construes the term "drop head" as **"Beam-head having an end cap seat that is easily releasable from the central shaft and can be lowered, or dropped, from the fixed position to allow for the removal of forming components."**

3. "fixed beam-head"

The parties' proposed constructions of this term, as used in Claims 1, 7, and 11 of the '069 Patent, are listed in the following table:

Plaintiff's Construction	Defendants' Construction
<p>Beam-heads having an end cap seat that can be fixed into position.</p> <p>“Fixed” means to be steadfast and able to support beams and panels for the purpose of pouring and supporting concrete.</p> <p>“Beam-head” means a component for supporting one or more beams in position</p>	<p>Beam-head having an end cap seat that is permanently attached to a fixed location on the central shaft by welding, by being formed as a single uniform body with the shaft or in some other manner that makes the end cap seat not easily removable from the shaft.</p>

Concrete Support disagrees with two aspects of Bond’s construction of the term “fixed beam-head”: (1) the use of “permanently” and (2) the references to “welding” or “being formed as a single uniform body.” Bond again argues that Concrete Support’s construction impermissibly broadens the term in a way that allows “drop head” and “fixed beam-head” to be used interchangeably.

First, Concrete Support argues that “permanently” should not be included in the construction of “fixed beam-head,” noting that the word “permanent” does not occur in the specification or in any other aspect of the ’069 Patent. Bond, on the other hand, argues that the specification teaches two embodiments for a fixed beam-head: one that consists of two or more parts welded together and another that consists of a single, weld-free uniform body. Bond argues that—unlike a drop head—a fixed beam-head “cannot be released by a simple action such as striking a star,” and is thus “permanently attached.” The court agrees with Concrete Support that the construction of “fixed beam-head” should not include “permanently,” as this word does not appear in the ’069 Patent and impermissibly narrows the term. *See Source Vagabond Sys. Ltd. v. Hydrapak, Inc.*, 753 F.3d 1291, 1299 (Fed. Cir. 2014) (“[I]f we once begin to include elements not mentioned in the claim, in order to limit such claim . . . we should never know where to stop.”) (quoting *McCarty v. Lehigh Val. R.R. Co.*, 160 U.S. 110, 116 (1895)).

Next, Concrete Support disagrees with Bond's proposal to include "welding" or "being formed as a single uniform body with the shaft" in the construction of "fixed beam-head." The court agrees with Concrete Support that the inclusion of these specific embodiments unnecessarily limits the term. *See Phillips*, 415 F.3d at 1323 ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.").

However, the court agrees with Bond that Concrete Support's proposed construction of "fixed beam-head" overly broadens the term. The "drop head" differs from the "fixed beam-head" in that the end cap seat can be easily released and lowered from the fixed position. The end cap seat in the "fixed beam-head," on the other hand, cannot be easily released or lowered. Aspects of Bond's proposed construction better establish this distinction as it would be understood by a person of ordinary skill in the art, reading the claim term in context of the entire patent.

The court construes the term "fixed beam-head" as **"Beam-head having an end cap seat that is attached to a fixed location on the central shaft in a manner that makes the end cap seat not easily releasable from the shaft."**

4. *"selectively attached to"*

The parties' proposed constructions of this term, as used in Claims 1, 4, 12, and 16 of the '069 Patent, are listed in the following table:

Plaintiff's Construction	Defendants' Construction
Attached in a manner such that it is movable or adjustable and can be fixed in more than one position.	Attached in a manner such that it is easily removable from the central shaft such as by striking a star.

Concrete Support again disagrees with Bond's use of "removable" and "such as by striking a star." Bond disagrees with Concrete Support's inclusion of "adjustable" and "can be fixed in

more than one position,” arguing that Concrete Support cannot cite language from the specification to support these additions. In the claims-construction hearing, Bond agreed that “releasable” can replace “removable” in the construction of “selectively attached to.” Bond also agreed that “such as by striking a star” can be removed.

The court agrees with Bond that Concrete Support does not provide language from the patent that supports adding “adjustable” and “can be fixed in more than one position” to the court’s construction of “selectively attached to.” *See Vitronics*, 90 F.3d at 1582 (“[W]e look to the words of the claims themselves . . . to define the scope of the patented invention”).

The court construes the term “selectively attached to” as **“Attached in a manner such that it is easily releasable from the central shaft.”**

5. “attached around and to”

The parties’ proposed constructions of this term, as used in Claims 1 and 7 of the ’069 Patent, are listed in the following table:

Plaintiff’s Construction	Defendants’ Construction
Attached in a manner such that the end cap seat completely encircles (attaches around) and cannot be removed from the central shaft.	Permanently attached to a fixed location on the central shaft by welding, by being formed as a single uniform body with the shaft or in some other manner that makes the end cap seat not easily removable from the shaft.

Concrete Support again disagrees with Bond’s use of “permanently,” “welding,” and “being formed as a single uniform body.” Bond does not disagree with any specific aspect of Concrete Support’s proposed construction but argues that the construction is impermissibly broad. In the claims-construction hearing, Bond agreed with Concrete Support’s assertion that the end cap seat for a fixed beam-head “completely encircles” and “cannot be removed” from the central shaft. Bond further agreed that “releasable” can replace “removable” in the term’s construction.

The court agrees with Concrete Support that the construction of the term “attached around and to” should not include “permanently,” as this limitation does not find support in the claim language or specification. *See Vagabond*, 753 F.3d at 1299. Likewise, the court agrees with Concrete Support that the construction need not include the two specific embodiments related to “welding” or “being formed as a single uniform body.” *See Phillips*, 415 F.3d at 1323. The court finds that Concrete Support’s language that “the end cap seat completely encircles (attaches around) and cannot be removed from the central shaft” more aptly reflects the word “around” in the term “attached around and to” than does Bond’s proposed construction. However, the court finds the parenthetical in Concrete Support’s proposed construction unnecessary for the factfinder. The court will combine aspects of the parties’ proposed constructions of “attached around and to” in the term’s final construction.

The court construes the term “attached around and to” as **“Attached in a manner such that the end cap seat completely encircles and cannot be easily released from the central shaft.”**

6. *“locking element”*

The parties’ proposed constructions of this term, as used in Claims 8 and 13 of the ’069 Patent, are listed in the following table:

Plaintiff’s Construction	Defendants’ Construction
Any means of locking the lower and upper portions of the prop assembly into place such that beams and panels may be supported to allow for the pouring and support of concrete to create formworks, this includes but is not limited to external pins or threaded rings.	Pin or other element that is inserted through an exterior aperture of the lower portion of the prop and an interior aperture of the upper portion of the prop to lock the lower and upper portions in place.

The crux of the parties’ disagreement on this term is whether the “locking element” must include a pin. Concrete Support argues that “locking” can be accomplished by any number of

devices, not just a pin. Bond argues that Concrete Support’s proposed construction is impermissibly broad because the ’069 patent discloses only a pin as the locking element. Bond further argues that its proposed construction describes “pin *or other element*” (emphasis added), which, Bond argues, is broader than the single embodiment disclosed in the patent.

The court agrees with Bond that the proposed construction’s inclusion of “pin or other element” is broad enough to avoid limiting the claim construction to a single embodiment. *See Netword, LLC v. Centraal Corp.*, 242 F.3d 1347, 1352 (Fed. Cir. 2001) (“Although the specification need not present every embodiment or permutation of the invention and the claims are not limited to the preferred embodiment of the invention [citation omitted], neither do the claims enlarge what is patented beyond what the inventor has described as the invention.”).

The court construes the term “locking element” as **“Pin or other element that is inserted through an exterior aperture of the lower portion of the prop and an interior aperture of the upper portion of the prop to lock the lower and upper portions in place.”**

7. “affixed to”

The parties’ proposed constructions of this term, as used in Claim 12 of the ’069 Patent, are listed in the following table:

Plaintiff’s Construction	Defendants’ Construction
Attached to the central shaft in a manner that prevents removal and allows the end cap seat to be fixed in place in order to support beams.	Permanently attached to a fixed location on the central shaft by welding, by being formed as a single uniform body with the shaft or in some other manner that makes the end cap seat not easily removable from the shaft.

The parties’ arguments for this term mirror those for the term “attached around and to,” as both terms describe the end cap seat’s connection to the central shaft for the fixed beam-head. Concrete Support again disagrees with Bond’s use of “permanently,” “welding,” and “being

formed as a single uniform body.” Bond argues that Concrete Support’s proposed construction is impermissibly broad. Bond agreed in the claims-construction hearing that “releasable” can replace “removable.”

The court agrees with Concrete Support that the construction of the term “affixed to” should not include the word “permanently,” as this limitation does not find support in the claim language or specification. *See Vagabond*, 753 F.3d at 1299. Likewise, the court agrees with Concrete Support that the construction need not include the two specific embodiments related to “welding” or “being formed as a single uniform body.” *See Phillips*, 415 F.3d at 1323.

The court construes the term “affixed to” as **“Attached to a fixed location on the central shaft in a manner that makes the end cap seat not easily releasable from the shaft.”**

A. Summary table of the court’s construction of the disputed terms

Claim Term	Court’s Construction
“fixed beam-head prop assemblies” (claims 1, 2, 4, 6, 13, 15, 16)	Prop assemblies comprising an upper portion, a lower portion, a variable height, and a threaded collar.
“drop-head” (claims 1, 2, 3, 4, 12, 14, 16)	Beam-head having an end cap seat that is easily releasable from the central shaft and can be lowered, or dropped, from the fixed position to allow for the removal of forming components.
“fixed beam-head” (claims 1, 7, 11)	Beam-head having an end cap seat that is attached to a fixed location on the central shaft in a manner that makes the end cap seat not easily releasable from the shaft.
“selectively attached to” (claims 1, 4, 12, 16)	Attached in a manner such that it is easily releasable from the central shaft.
“attached around and to” (claims 1, 7)	Attached in a manner such that the end cap seat completely encircles and cannot be easily released from the central shaft.
“locking element” (claims 8, 13)	Pin or other element that is inserted through an exterior aperture of the lower portion of the prop and an interior aperture of the upper

	portion of the prop to lock the lower and upper portions in place.
“affixed to” (claim 12)	Attached to a fixed location on the central shaft in a manner that makes the end cap seat not easily releasable from the shaft.

IV. Conclusion

For the above reasons, the court construes the disputed claims as noted and so **ORDERS**. No other claim terms require construction.

IT IS FURTHER ORDERED that this cause is set for a Scheduling Conference on **January 30, 2023, at 9:30 a.m.**, in Courtroom 7, Seventh Floor, United States Courthouse, 501 W. 5th Street, Austin, Texas 78701. The parties shall meet and confer in advance of that date in an attempt to settle this case. If the case is not settled, the parties shall confer in an attempt to reach agreement on a schedule to follow for the remainder of this case. The court will render a Scheduling Order as a result of the aforementioned Scheduling Conference.

SIGNED this 2nd day of November, 2022.


 LEE YEAKEL
 UNITED STATES DISTRICT JUDGE