

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ENSIGN US SOUTHERN DRILLING LLC,
Petitioner,

v.

C&M OILFIELD RENTALS, LLC
D/B/A C-MOR ENERGY SERVICES
Patent Owner.

Case No. IPR2023-00804
U.S. Patent No. 10,976,016

**PATENT OWNER'S RESPONSE
TO PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 10,976,016**

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I. INTRODUCTION

The Petition fails to establish a *prima facie* case of obviousness for any ground. Notably, none of the cited references disclose a *crown deck*, as required by the claims, and as defined by the parties.

Although the Board correctly found Gowanlock lacks a crown deck for Ground 1, for Ground 2 it preliminarily found that Swivelpole discloses a crown deck based on photographs showing a walking surface, a handrail, drawings depicting walkways and platforms, and testimony from Mr. Hamdan. But such general structures do not suffice.

As Mr. Hamdan recently admitted, Swivelpole “doesn’t literally disclose a crown deck, but it literally discloses a pole that **could be** mounted to a handrail of a deck.” This is a departure from the Petition, as if not explicitly disclosed by the reference, it would need to be inherently disclosed, yet the Petition fails to take the position that a crown deck is necessarily present in Swivelpole. Absent a teaching of a crown deck in Swivelpole, Petitioner simply cannot meet its burden of proving obviousness.

Additionally, Swivelpole’s long and slender design intended to illuminate a walking surface of a general platform or stairwell makes it unsuitable for (i) the extreme conditions on a 100-foot-high crown deck where the lighting system is used,

and (ii) illuminating the wellsite at the ground 100+ feet below. This disconnect highlights the Petition's speculative combination rooted in hindsight, not evidence.

For Ground 3's APA, the Board found that a POSITA "would have understood from the depiction and description of Figure[] 2 in the '016 patent [which included the phrase "Existing Crown Deck 110"] that Figure 1 includes a crown deck." ID at 42. Respectfully, this is incorrect as (i) the term "existing" means "current" not "conventional" or part of the prior art, (ii) the text is only found in Figure 2, a figure depicting the invention not the prior art, (iii) the reference numeral 110 is only used in the specification once to describe the crown, not the crown deck, and as such its inclusion in Figure 2, was clearly a typographical error, and (iv) the WDTX recognized this explaining that using "110" to describe the crown in Figure 1 and the reference to "Existing Crown Deck 110" in Figure 2 is a "one-off labeling oddity." In any event, the Institution decision ("ID") preliminary found that that Petitioner did not show a reasonable likelihood of prevailing on its obviousness challenge for Ground 3.

Ground 4 fares no better, as it too tries to combine disparate components in illogical ways based again on hindsight reasoning.

Finally, the facts around the introduction and sales of Patent Owner ("PO")'s Crown Jewel lighting system provide compelling secondary considerations of non-obviousness. The Crown Jewel system, which embodies and is coextensive with the

patented invention, fulfilled a longstanding and unaddressed need in the drilling industry. It has achieved remarkable commercial success, received substantial industry praise, has been copied by competitors, including Petitioner.

In view of these irreparable deficiencies pervading the asserted grounds, the claims must be confirmed as not being unpatentable.

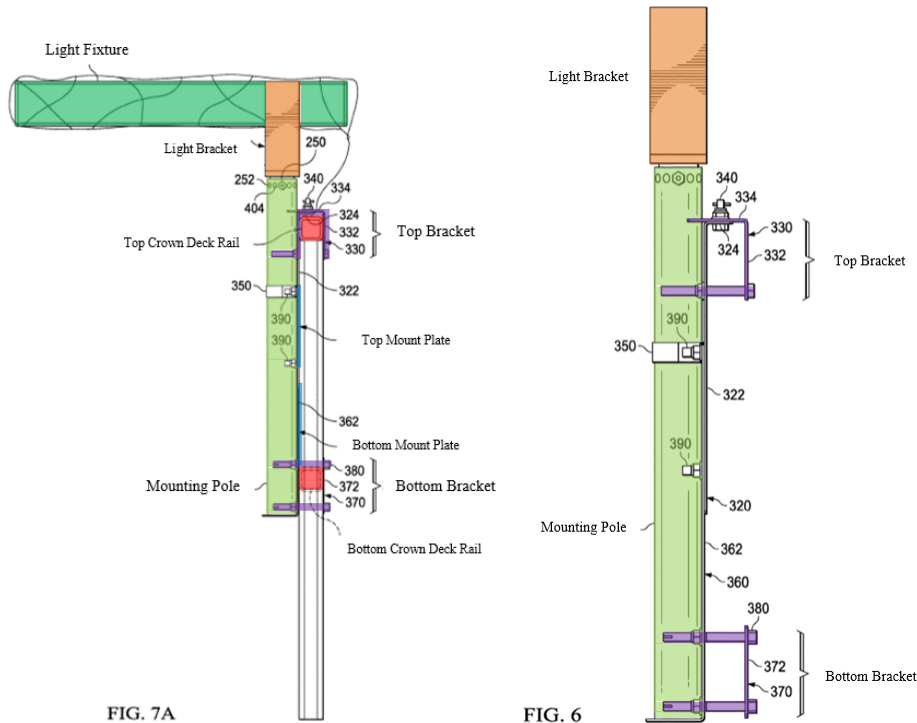
II. OVERVIEW OF THE '016 PATENT

The '016 Patent generally relates to lighting systems used on drilling rigs. Ex.1001, Abstract. These systems are “critical to ensure continuous and safe operation of well sites.” *Id.*, 1:13-14. The '016 Patent explains that, “[t]o ensure even and effective lighting of the well site, lighting systems have previously been installed on the uppermost portion of the drilling rig, also referred to as the ‘crown’ of the rig.” *Id.*, 1:14-17.

Unlike the prior art, the '016 Patent claims, among other things, a modular lighting system mounted on a rig where a plurality of light units are each separately attached to a **crown deck** of the rig and comprise a mounting pole, a light fixture having one or more lights, and a bracket configured to attach the mounting pole to the crown deck. *See, e.g., id.*, claim 1. Generally, these lights units have a “low profile to minimize the wind shear forces that may be experienced by the light units at the top of a structure.” *Id.*, 4:58-60.

Figures 6 and 7A (below) provide an overview of one embodiment. *Id.*, 2:10-

15, 3:5-8. Light fixture 248 (green) may be connected to light bracket 400 (orange).
Id., 4:31-40. Mounting pole 240 (light green) is attached to the crown deck using brackets 300 and 310 (top and bottom, respectively) (purple) that attach to top rail 242 (red) and bottom rail 244 (red). *Id.*, 3:38-59, 4:30-53.



III. CLAIM CONSTRUCTION

In the ID, the Board applied the claim constructions set forth in the Claim Construction Order from the WDTX proceeding. ID at 8.

IV. PERSON OF ORDINARY SKILL IN THE ART

For this proceeding only, PO does not dispute Petitioner's level of ordinary skill in the art.

V. MR. HAMDAN'S EXPERT OPINION SHOULD BE GIVEN LITTLE-TO-NO WEIGHT

In determining the probative value of an expert opinion, courts “consider three factors: (1) the interest of the expert in the outcome of the case, (2) the presence or absence of factual support for the expert’s opinion, and (3) the strength of any opposing evidence. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294-295 (Fed. Cir. 1985).¹

Applying those factors to the opinions of Petitioner’s expert Jake Hamdan, the Board should afford them little to no weight. *Spinal Elements, Inc. v. Spectrum Spine IP Holdings, LLC*, PGR2021-00050, Paper 47 at (PTAB Aug. 17, 2022) (giving the expert’s “unsupported, conclusory opinion no weight.”); *EC Data Sys. Inc., v. J2 Global, Inc.* No. 2014-008203, 2014 WL 7171966 at *4-5 (PTAB Dec. 15, 2014) (applying *Ashland* factors); *Ex Parte Magna Elecs., Inc.*, No. 2013-004164, 2014 WL 2360424 at *3-6 (PTAB May 28, 2014) (same).

A. Mr. Hamdan’s interest in the outcome of the case.

Mr. Hamdan is biased as having an outside interest in the challenged patent being found unpatentable. Ensign Drilling Inc. has employed Mr. Hamdan since

¹ An additional factor is the “nature of the matter sought to be established,” here, obviousness. *Ashland Oil*, 776 F.2d at 294.

2018 as its Vice President of Engineering. Ex.1007 at 3. He works for “corporate” or “the mother company” that owns Petitioner Ensign US Southern Drilling LLC. *Id.*

Mr. Hamdan is responsible for “develop[ing] plans and goals for improving equipment,” “new product development,” and “planning, execution and technical support of all designs and equipment.” *Id.* Critically, as Ensign was losing market share to PO, Mr. Hamdan was tasked with designing and developing a product to compete with PO’s light system. Ex.2013. PO accuses the competing product of infringement in the parallel district court action.

Mr. Hamdan gave “direction” on “how to design it.” Ex.2012 at 180:3-181:9. And he did so *after* analyzing PO’s product that practices the challenged claims, technical drawings for that product, “how things are fastened and secured” for that product, “the means of fastening the system or connecting the system to the Ensign rig for safety analysis,” “the weight of the assemblies and the brackets and what the system would weigh,” and “how the assembly of fasteners are being used and assess the risk of fall or DROPS.” *Id.*, at 205:12-206:2. As discussed in Section X *infra*, these activities are evidence of copying and objective indicia of secondary considerations of non-obviousness of the challenged patent.

Moreover, Mr. Hamdan admitted that he is “obligated professionally to be” “loyal” to Ensign. Ex.2012, 385:2-4. Although he insisted that his loyalty does not

“affect [his] professional judgment” and “ethical responsibilities,” he confirmed that it was “absolutely,” i.e., with no qualifications or restrictions, “part of [his] job” to look out for Ensign’s best interests “absolutely.” *Id.*, 385:2-24.

The evidence establishes he “has a substantial interest in the outcome of the case.” *Magna*, 2014 WL 2360424 at *3 (expert “employed by Patent Owner when he provided the expert opinion...has a substantial interest in the outcome of the case”). Thus, the Board should disregard, or at the very least afford little weight to, Mr. Hamdan’s opinions. *NOF Corp. v. Nektar Therapeutics*, IPR2019-01396, Paper 28 at 6-7 (PTAB Jun. 10, 2020) (testimony less persuasive where expert was employed by Petitioner).

B. Mr. Hamdan provides no factual support for his opinions.

Mr. Hamdan’s conclusory opinions should be afforded little weight because they are unsupported by facts or technical analysis. *Ashland Oil*, 776 F.2d at 294-295 (explaining “the presence or absence of factual support for the expert’s opinion” should be analyzed in determining the probative value of an expert opinion); *TQ Delta, LLC v. CISCO Sys., Inc.*, 942 F.3d 1352, 1362-63 (Fed. Cir. 2019) (expert’s conclusory opinions are “inadequate to support the Board’s fact finding”); *SEKO S.p.A. v. CM2W JSC*, No. PGR2020-00006, Paper 16 at 13-14 (PTAB May 4, 2020) (“Because [expert]’s conclusory testimony is not supported by the cited paragraphs, we do not find it persuasive.”); *Roxane Labs., Inc. v. Novartis AG*, IPR2016-01461,

Paper 9, 10 (PTAB Feb. 13, 2017) (“As the Board has stated repeatedly, conclusory expert testimony is entitled to little or no weight.”).

Here, as in *Xerox*, the only “evidence” Petitioner cites for certain of its key arguments is the unsupported, conclusory opinions from its expert. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential). For example, regarding the limitation of claim 1 that recites “a plurality of light units, each light unit separately attached to the crown deck of the rig,” Mr. Hamdan provides the following conclusory statement for Ground 3: “A POSITA would readily employ the lights, mounting poles, and brackets shown in the Swivelpole catalog or Chinese ‘413 above to separately attach a plurality of light units to a crown deck or a hand railing, i.e., guard rail, around the crown deck.” Ex.1008, p.70. As in *Xerox*, this merely repeats verbatim the conclusory assertions for which it is offered in support. Specifically, Petitioner states the same, citing page 70 of Mr. Hamdan’s declaration. Pet. 78. As in *Xerox*, Mr. Hamdan does not cite any additional supporting evidence or provide any technical reasoning to support his statement. Ex.1008, p.70.

Thus, Mr. Hamdan’s testimony on this missing limitation and all others for which he similarly offers conclusory statements should be entitled to little weight because “the cited declaration testimony is conclusory and unsupported [and] adds little to the conclusory assertion for which it is offered to support.” *Xerox*, Paper 9

at 15; *Kinetic Techs., Inc. v. Skyworks Sols., Inc.*, IPR2014-00529, Paper 8 at 15 (PTAB Sept. 23, 2014).

C. The strength of any opposing evidence warrants affording Mr. Hamdan's opinions little to no weight.

The strength of the opposing evidence also undermines the probative value of Mr. Hamdan's opinions. *Rockwell Automation, Inc. v. Automation Middleware Sols., Inc.*, IPR2017-00469, Paper 10 at 19-20 (PTAB July 18, 2017) (giving expert testimony little weight when "the evidence of record introduced by Patent Owner contradict[ed] Petitioner's [and its expert's] identification of [the invention] as a primitive operation."). The strong, opposing evidence includes (1) the opinions offered by Dr. Wooley (Ex.2006) as discussed *infra* in Sections VI-IX; and (2) the evidence of secondary considerations of non-obvious as discussed *infra* in Section X.

VI. GROUND 1

Petitioner has failed to show Gowanlock anticipates any challenged claim.

A. Gowanlock Overview

WO 2018/042348A1 ("Gowanlock") is titled "Drilling Rig with Attached Lighting System and Method." Ex.1003, (54). It discloses a "method of providing lighting to a drilling rig site," by attaching the light fixture "directly to the crown of a drilling rig on each of at least two sides, wherein the light fixture contains a fixed

or removable light fixture attachment connecting the light fixture to the crown[.]”
Id., (57).

B. Gowanlock does not disclose a “crown deck.”

Each challenged claim recites a “crown deck.” The term “crown deck” means “a collection of structures within the crown that includes a walking surface, parts supporting the walking surface, and any associated handrail.” Pet. 20. Gowanlock discloses no such thing, as the Board correctly determined in the ID. ID at 17.

Figure 1A (below) shows “a lighting system mounted on a drilling rig.” Ex.1003, [0012]. At most, Gowanlock discusses for this figure a “crown block 13” and a crown, which is a “collection of structures at the uppermost portion of a drilling rig.” Pet. 20. A POSITA would understand a “crown block” to be the “assembly of sheaves and pulleys at the top of the derrick or mast over which a hoisting or drilling line is reeved.” Ex.2006, ¶48. **Figures 1B and 2** do not disclose a “crown deck” either. Pet. 52-57. Instead, they disclose a “light fixture” (101, 203), “bracket” (102, 204), and “light fixture attachment” (103, 202). Ex.1003, [0013], [0014].

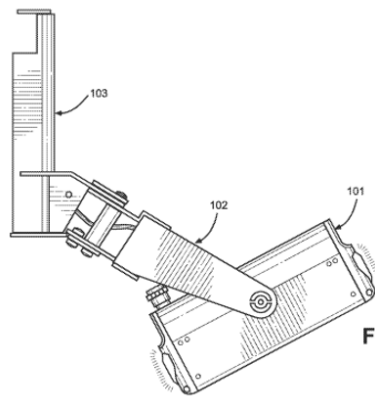
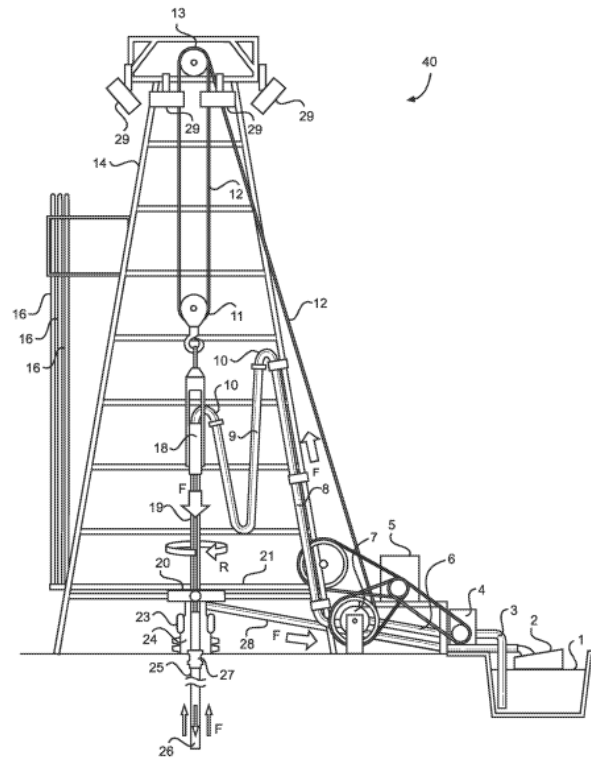


FIG.1B

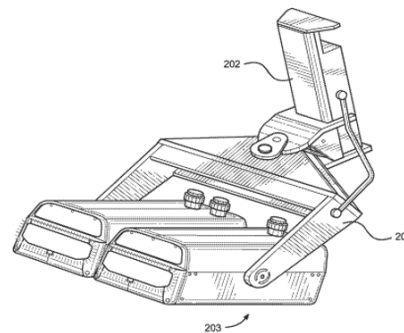


FIG. 2

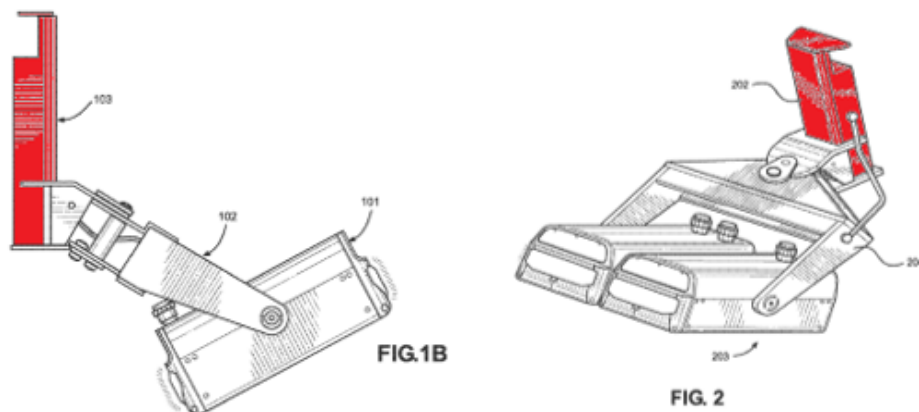
C. Gowanlock does not disclose a “mounting pole.”

Gowanlock does not disclose a “mounting pole.”

Citing Figures 1A, 1B, and 2, Petitioner contends “Gowanlock discloses a short mounting pole which it describes as a ‘light fixture attachment (103 and 202)’

in paragraph [0019].” Pet. 52. But a “light fixture attachment (103 and 202)” is not a “mounting pole,” and Petitioner fails to provide an explanation to the contrary.

As shown in Figures 1B-2 (below), Gowanlock’s “light fixture attachment” (red) is a short, singular component with a rectangular indentation at one end that hangs off the rig. Ex.2006, ¶53. Gowanlock discusses the “light fixture attachment” once: “[a]nd in this embodiment, the light fixture is connected to the crown directly through the light fixture attachment (103 and 202).” Ex.1003, [0019].



Indeed, Mr. Hamdan admitted at deposition that he “wouldn’t say [Gowanlock] literally discloses a mounting pole.” Ex.2012, 104:17-25. Instead, changing course from his declaration, Mr. Hamdan testified Gowanlock “inherently and visually discloses a mounting pole.” *Id.*, 105:4-7. This opinion should be rejected for three, independent reasons. **First**, the Petition controls, and Mr. Hamdan

failed to opine in his declaration that Gowanlock inherently discloses a “mounting pole.” **Second**, when asked for his understanding of what an “inherent disclosure” is, Mr. Hamdan indicated it meant “obvious or implied or common,” and he confirmed that was the understanding he applied in rendering his new “inherency” opinion. *Id.*, 95:12-25. But the standard for inherent disclosure is not “obvious or implied or common” and is much more stringent: “the missing characteristic” must be “***necessarily present***, or inherent, in the single anticipating reference.” *Pungkuk Wire Mfg. Co. v. Seong*, IPR2016-00763, 2017 WL 3535009, at *3 (PTAB Aug. 16, 2017) (citation omitted). Thus, even if this new position were considered, Mr. Hamdan applied an incorrect understanding of inherent disclosures and, therefore, his opinion that Gowanlock now “inherently” discloses a “mounting pole” must be rejected. **Third**, Mr. Hamdan testified paragraphs 84-85 of his declaration provide the basis for his opinion that Gowanlock inherently discloses a “mounting pole.” Ex.2012, 105:4-18. But those paragraphs say nothing about Gowanlock inherently disclosing a “mounting pole.” Ex.1008, ¶¶84-85.

D. Gowanlock does not disclose “a bracket configured to attach the mounting pole to the crown deck of the rig.”

Petitioner contends “**Gowanlock** discloses a **bracket** (102 and 204) **configured to attach the mounting pole to the crown deck** of the rig,” citing Figures 1A, 1B, and 2 in support. Pet. 52. This is incorrect for at least three, key reasons:

First, as discussed, Gowanlock does not disclose a “crown deck.” Thus, Gowanlock cannot disclose “a bracket configured to attach the mounting pole to *the crown deck* of the rig.”

Second, as discussed, Gowanlock does not disclose a “mounting pole.” Thus, Gowanlock cannot disclose “a bracket configured to attach the *mounting pole* to the crown deck of the rig.”

Third, bracket 102 and 204 are not “configured to attach the mounting pole to the crown deck of the rig.” Ex.1003, [0019]. Gowanlock explains: “[t]he light fixture (101 and 203) as shown in this embodiment also in Figure 1B and in perspective view in Figure 2 is held by a bracket (102 and 204) which permits the light fixture to swivel both in a horizontal and vertical orientation.” *Id.* The “bracket (102 and 204)” attaches the light to the “light fixture attachment” but not to anything else. *Id.* In other words, Gowanlock’s alleged “bracket” is not “configured to attach the mounting pole to the crown deck of the rig,” as claimed. Ex.2006, ¶64. The Board confirmed the same: “We do not agree with Petitioner that either structure 102 or 204 attaches a mounting pole to a crown deck, as claim 1 requires.” ID at 17.

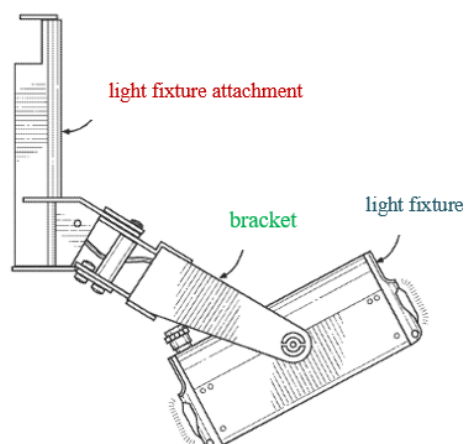


FIG. 1B

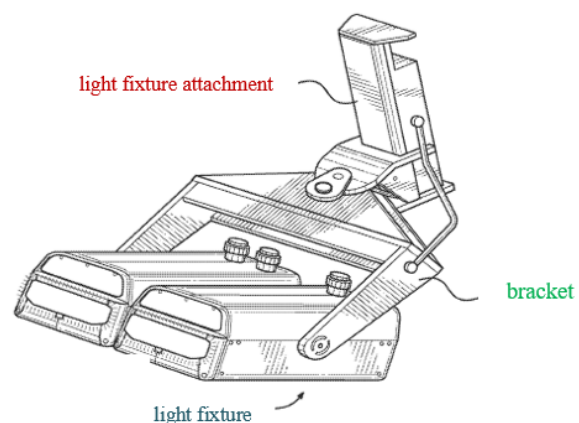


FIG. 2

Ex.1003 at Figs. 1B, 2 (annotated).

Mr. Hamdan repeats Petitioner's "summary chart," and fails to identify where Gowanlock discloses the limitation or provide any reasoning or other evidentiary support, and thus should be given no weight. *Xerox*, Paper 9 at 15.

Petitioner's "summary chart" does not compel a different result. As shown below, the statements after the citation to Gowanlock's [0019] are not statements from [0019] at all, but rather *Petitioner's* desired manifestation passed off as quotes from Gowanlock. As explained, the words "crown deck," "deck," "mounting pole," "pole," and "handrail" do not appear anywhere in Gowanlock.

Pet. 57	Ex.1003, [0019] (in relevant part)
"[0019] The light fixture (101 and 203) as shown in this embodiment also in Figure 1B and in perspective view in Figure 2 is held by a bracket (102 and 204) which permits the light fixture to swivel both in a horizontal and vertical orientation. <u>The brackets and mounting</u>	"[0019] ... The light fixture (101 and 203) as shown in this embodiment also in Figure 1B and in perspective view in Figure 2 is held by a bracket (102 and 204) which permits the light fixture to swivel both in a horizontal and vertical orientation. And in this embodiment,

<u>poles also allow mounting or affixing the lights to differently configured, designed, or configured crown decks, including handrails.”</u>	the light fixture is connected to the crown directly through the light fixture attachment (103 and 202) ...”
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Compare Pet. 57, and Ex.1008, pp.52-53, with Ex.1003, [0019].

Accordingly, the Board reached the correct conclusion: “We do not agree with Petitioner that either structure 102 or 204 attaches a mounting pole to a crown deck, as claim 1 requires.” ID at 17.

E. Gowanlock does not disclose “the bracket is connected to the crown deck of the rig using bolts.”

Knowing Gowanlock does not disclose bolts, Petitioner asserts “Gowanlock discloses a bracket (102 and 204) which is *inherently* connected to the crown deck of the rig using bolts.” Pet. 53; *id.*, 57. Indeed, Mr. Hamdan admitted that Gowanlock does not expressly disclose this limitation. Ex.2012, 120:16-19 (“Gowanlock does not literally disclose a bracket connected to the crown deck of the rig using bolts, correct? A. Literally, no.”).

But for inherency, “the missing characteristic” must be “*necessarily present*.” *Pungkuk*, 2017 WL 3535009, at *3. Nothing in Gowanlock indicates that bolts, rather than some other way of attaching, like a weld, rivets, screws, pins, or clamps, are necessarily present. Ex.2006, ¶¶68-71.

The Board correctly determined that “Petitioner has not demonstrated the Gowanlock’s bracket is connected to the crown deck using bolts, or that bolts are necessarily present in Gowanlock’s structure.” ID at 18. Petitioner does not and cannot show evidence to the contrary.

VII. GROUND 2

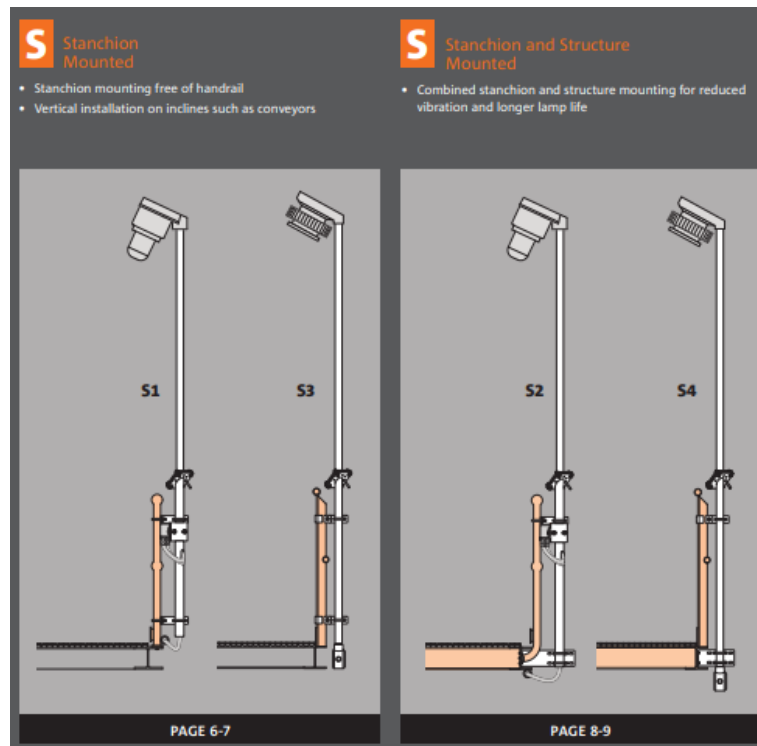
Petitioner fails to show this combination renders any challenged claim obvious.

A. Swivelpole Overview

The Swivelpole Catalog discloses a system, the “core” of which “is its unique [] swivel mechanism.” Ex.1004, p.4. Its “swivel mechanism lets you lower – and rotate – a light fitting to a safe working level in minutes” without “ladders,” “scaffolding,” or “fall arrest systems.” *Id.*, p.2. That mechanism “[a]llows one-person” to “control[] lowering of the pole top section and luminaire.” *Id.*, p.4.



Id., 3.



Applications for the products include “[w]alkway lighting, platforms, stairways, spiral stairways, conveyors.” Ex.1004, p.6; *id.*, p.8 (“[i]deal for area lighting along industrial walkways, platforms, stairways, spiral stairways”), 9 (same and adding “roof tops”) For this purpose, they employ small, low-power “LED” and “Well Glass” lights. *Id.*, pp.9-11. The figures labeled S1 and S2 in the figure above illustrate “Well Glass” lights, and the figures labeled S3 and S4 illustrate small “LED” lights. Ex.2006, ¶75. The systems can withstand luminaires with a maximum weight of 44 lbs. Ex.1004, p.5.

B. The combination does not disclose a “crown deck.”

For the reasons discussed for Ground 1, which are incorporated here, Gowanlock does not disclose a “crown deck.” For Ground 2, Petitioner reuses the same Gowanlock arguments as in Ground 1. Pet. 58-59, 63, 65-69.

Swivelpole does not disclose a “crown deck.”² Indeed, Mr. Hamdan admits

² It is respectfully submitted that the Board mistakenly stated that, “[l]ater in its Preliminary Response, PO later acknowledges that Petitioner identifies a crown deck in Swivelpole.” ID at 27 (citing Paper 6 at 26-27). Nowhere on pages 26 through 27 (or elsewhere) of the Preliminary Response does PO “acknowledge[] that Petitioner identifies a crown deck in Swivelpole.” Instead, PO maintained that (1) Swivelpole does not disclose a “crown deck,” and (2) Petitioner failed to show

Swivelpole “doesn’t literally disclose a crown deck.” Ex.2012, 122:6-7. He also admits Swivelpole does not disclose a pole attached to a crown deck’s handrail. *Id.*, 122:10-18 (“ Q. But it doesn’t specifically disclose a pole that is attached to the handrail of a crown deck, correct? A. It doesn’t literally say that, no.”).

Instead, in Mr. Hamdan’s view, Swivelpole “literally discloses a pole that *could be* mounted to a handrail of a deck.” *Id.*, 122:5-9 (“A. It literally discloses a crown deck? A. **It doesn’t literally disclose a crown deck**, but it literally discloses a pole that *could be* mounted to a handrail of a deck.”³).

But Mr. Hamdan’s opinion is incorrect. **First**, this is speculation without any evidence and, thus, must be excluded. **Second**, it is an unsupportable proposition, as “a handrail of a deck” is not the same as a “crown deck.” Ex.2006, ¶83. Mr. Hamdan admitted as much. Ex.2012, 146:11-16 (“Q...So you can have handrails associated with a rig that are not handrails of a crown deck, right? A. Absolutely. It means they’re found everywhere on the rig, not just on a crown deck.”). Thus, even

otherwise. *E.g.*, Paper 6 at 23 (“Neither Petitioner nor its expert ever identify any alleged ‘crown deck’ in Swivelpole. Nor could they.”), 27 (“A ‘crown deck’ is a specific structure disclosed in neither Gowanlock nor Swivelpole.”).

³ Emphasis throughout this Response is added unless otherwise noted.

if there is “a pole that *could be* mounted to the handrail of a **deck**,” that does not mean there is a pole mounted to the handrail of a **crown deck**.

Petitioner further contends “[a] POSITA would readily employ the lights, mounting poles, and brackets shown in the Swivelpole catalog above to separately attach a plurality of light units to a crown deck or a hand railing, i.e., guard rail, around the crown deck.” Pet. 66-67. But the figures to which Petitioner points do not show a “crown deck,” or a lighting system suitable for a “crown deck.” Ex.1004, p.6; Ex.2006, ¶¶82-83. Absent such evidence, the Board cannot find it is disclosed.

Critically, a POSITA would not understand the use of Swivelpole on a general walkway, platform, or stairway to disclose use on a “crown deck.” Ex.2006, ¶83. Swivelpole has low-power light fixtures designed to illuminate an area 8-10 feet beneath the lights. *Id.* Swivelpole also uses a slender, low-strength pole. *Id.* Such components would not be acceptable for lighting a wellsite from the crown deck at 100+ feet away where the components would be subject to the crown deck's harsh environment. *Id.*

According to the Board, “[p]age three of Swivelpole includes a photograph depicting a walking surface, parts supporting the walking surface, and a handrail, and the same structures are depicted in the drawings of the ‘Stanchion Mounted’ and ‘Stanchion and Structure Mounted’ options on page six of Swivelpole.” ID at 30. From this, the Board concluded “Petitioner makes a sufficient showing that

Swivelpole in combination with Gowanlock teaches a crown deck.” *Id.*

While the Board gave credence to this ground, it is respectfully submitted that the Board misapprehended the purported evidence in the Petition. ***First***, pages 3 and 6 **do not** show a “crown deck,” which is construed as to “a collection of structures within the crown that includes a walking surface, parts supporting the walking surface, and any associated handrail.” Ex.1009 at 17; ID at 8. ***Second***, when making this finding, the Board did not have the benefit of Mr. Hamdan’s later admissions that showing a general walking surface or handrail is not the same as showing the crown deck’s walking surface or associated handrail. Ex.2012, 145:11-15 (“Q. So this is all to say that not all walking surfaces associated with a rig are walking surfaces of a crown deck, correct? A. Correct.”), 146:11-16 (“Q....So you can have handrails associated with a rig that are not handrails of a crown deck, right? A. Absolutely. It means they’re found everyone on the rig, not just on a crown deck.”). ***Third***, the Board did not have the benefit of Mr. Wooley’s opinion that a POSITA would recognize Swivelpole is not suitable for lighting the wellsite surrounding the base of the derrick from a crown deck. Ex.2006, ¶83.

Moreover, Swivelpole’s teachings cannot be applied to a crown deck based on the principle that “[a] reference may be read for all that it teaches, including uses beyond its primary purpose.” ID at 30 (quoting *In re Mouttet*, 686 F.3d 1322, 1331 (Fed. Cir. 2012)). In *Mouttet*, the issue was whether changing the prior art computing

device's optical paths to electronic wires changed the principles of its operation. 686 F.3d at 1332. The Federal Circuit affirmed the Board's finding that "the difference in the circuitry—electrical versus optical—does not affect the overall principle of operation of a programmable arithmetic processor[.]" *Id.*

Here, changing the Swivelpole's application from general walking surfaces or handrails to a "crown deck" would require completely changing its structure and principles of operation. Ex.2006, ¶86 (explaining changes). Mr. Hamdan admitted he "probably wouldn't use [Swivelpole's] swive joint." Ex.2012, 292:21-25. He could not "think of any value off the top of [his] head" that the swivel joint would provide in a lighting system connected to a crown deck. *Id.* 294:11-20. He explained there would be no need for the swivel joint for someone to access the light. *Id.* 290:10-20.

C. The combination does not disclose a "mounting pole."

For the reasons discussed for Ground 1, which are incorporated here, Gowanlock does not disclose a "mounting pole."

Swivelpole does not disclose the "mounting pole" required by the claims. A POSITA would understand from the claims' plain language that the mounting pole must be attached to the crown deck. Ex.2006, ¶89. And a POSITA would understand Swivelpole to be unsuitable for such a use. For example, a POSITA

would not think to use Swivelpole's long, slender pole with swivel joint on a crown deck, which is subject harsh environmental conditions. *Id.*

D. The combination does not disclose “a bracket configured to attach the mounting pole to the crown deck of the rig.”

For the reasons discussed for Ground 1, incorporated here, Petitioner fails to show Gowanlock discloses “a bracket configured to attach the mounting pole to the crown deck of the rig.”

Petitioner alleges that if “Gowanlock is asserted to somehow be missing this limitation, it was common knowledge and/or well-known by POSITA to use a bracket to attach a mounting pole to a crown deck (or anything else) as is described and/or shown throughout the Swivelpole catalog.” Pet. 61; *id.* (same for claim 2 plus “using bolts”). Petitioner further contends Swivelpole “shows a bracket configured to attach the mounting pole to the crown deck or a hand railing, i.e., guard rail, around the crown deck.” Pet. 68; Ex.1008, p.57. But neither Petitioner nor its expert identify “a bracket configured to attach the mounting pole to the crown deck of the rig,” as claimed. Pet. 65-69; Ex.1008, ¶83.

Petitioner's arguments are incorrect. **First**, the claim requires attachment to a crown deck, not merely any handrail, and “crown deck” means more than just a handrail. Specifically, even if Swivelpole disclosed a bracket attached to a handrail of some sort, it never discloses a “crown deck,” so a POSITA would not understand

any alleged bracket to be “configured to attach the mounting pole to the crown deck of the rig.” *See* Ex.2006, ¶80. As Mr. Hamdan admitted, not all handrails associated with a rig are handrails associated with a crown deck. Ex.2012, 146:11-16.

Second, a POSITA would never use any Swivelpole bracket to “attach the mounting pole to the crown deck of the rig” because it would not be assumed to withstand the rigors of the environment at the top of the rig. Ex.2006, ¶94. Crown decks experience significant vibrations and sway when the rig is drilling or being operated. *Id.*, ¶80; Ex.2012, 151:23-6 (“Q. So obviously, the rig is not a perfectly stationary structure, right? You’re moving a lot of equipment around, you’re doing a lot, and it’s going to move a little bit, right? A. Of course it does. It sways quite a bit, actually. Q. It sways. And so... A. It sways and vibrates, yes.”). Crown decks are also subject to high winds and other weather elements, including a risk of lightning strikes, drastic changes in wind pressure, and exposure to other harsh elements at a crown 100+ feet in the air. Ex.2006, ¶94; Ex.2012, 149:9-14 (“Q....You may be subject to much higher winds on a crown deck at 100-plus feet up in the air than you would be for a platform with a mud tank 48 inches off the ground, fair? A. Of course you can be, yes.”).

Mr. Hamdan agreed a POSITA would not modify Gowanlock to include an alleged bracket from Swivelpole or vice versa. For example, although Mr. Hamdan opines “[a] POSITA would readily employ the lights, mounting poles, and brackets

shown in the Swivelpole catalog [] to separately attach a plurality of light units to a crown deck” (Ex.1008, ¶83), he admitted he “[w]ouldn’t use any of the brackets” in either references and instead “would use something similar.” *Id.*, 279:8-18.

E. The combination does not disclose a “bracket [] connected to the crown deck of the rig using bolts.”

For the reasons discussed for Ground 1, incorporated here, Gowanlock does not disclose this limitation.

Swivelpole does not disclose this limitation either. Despite stating “[t]he Swivelpole catalog figure above shows a bracket that *may be* connected to the crown deck or a hand railing, i.e., a guard rail, around the crown deck using bolts,” Petitioner fails to identify the alleged “bracket,” let alone “bolts” that connect it to the crown deck of the rig, as claimed. Pet. 68; *id.*, 61; Ex.1008, p.58 (same).

Because neither Swivelpole nor Gowanlock discloses a “crown deck,” and Petitioner does not identify one, Swivelpole cannot disclose this limitation. Ex.2006, ¶¶76-77. If Petitioner points to alleged brackets or bolts for a general walking surface or a general handrail, Mr. Hamdan admitted that such general surfaces or handrails are not the claimed “crown deck.” Ex.2012, 145:11-15, 146:11-16.

In fact, Mr. Hamdan admitted he would need to “size the bolts according to the analysis that you do,” and he would not use any bolts allegedly disclosed in either

Gowanlock or Swivelpole for the combined system. *Id.*, 299:25-300:5. A POSITA would not be motivated to undertake this undue experimentation to combine Gowanlock and Swivelpole to meet this limitation.

F. No motivation to combine the references with a reasonable expectation of success.

There are several independent reasons why a POSITA would not have been motivated to combine the references with a reasonable expectation of success.

1. Neither reference teaches a “crown deck,” as claimed.

Petitioner argues that “[a] POSITA would readily know to combine the mounting poles and brackets shown in the Swivelpole catalog with the method to separately attach a plurality of light units to a crown deck or a hand railing, i.e., guard rail, around the crown deck as taught by Gowanlock.” Pet. 34; Ex.1008, ¶84; Ex.2012, 232:15-233:5 (same).

Yet, as discussed previously, neither reference discloses a “crown deck” or even a handrail around a “crown deck.” For this reason alone, there can be no motivation to combine. If for some reason combined, a POSITA would either use the Swivelpole on a general walkway or stairway around the wellsite as disclosed therein, or the Swivelpole would somehow be used with Gowanlock’s system at the **crown**, as neither reference teaches a **crown deck**.

2. Any alleged motivation to combine is based on hindsight.

Petitioner argues “a POSITA would combine the references for the obvious

and predictable result of placing or improving modular lighting on a crown deck,” specifically suggesting “a POSITA would readily attach lights as shown in Gowanlock to a Swivelpole mounting pole on a crown deck and/or handrail because the Swivelpole, which swivels from a point on a pole, would make the lights more accessible and easier to adjust.” Pet. 34 (citing Ex.1008, ¶85).

To reach this conclusion, Petitioner started with the claims and worked backwards, the very definition of impermissible hindsight reasoning, as the references do not even disclose a “crown deck.” *See Orexo AB v. Actavis Elizabeth LLC*, 903 F.3d 1265, 1271 (Fed. Cir. 2018) (“It is inappropriate to use the template provided by the inventor, to render the inventor’s contribution obvious.”); *KSR Int’l. Co. v. Teleflex Inc.*, 550 U.S. 398, at 421 (2007) (“A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.”).

3. *A POSITA would never use Swivelpole at Gowanlock’s crown.*

A POSITA would understand Swivelpole to be unsuitable for use at the crown where Gowanlock’s lights are underslung. For example, a POSITA would not think to use the Swivelpole’s long, slender pole with swivel joint allowing it to pivot in half at such a height, as (i) Swivelpole’s lights are built to illuminate the pathway beneath the lights, not the ground 100 feet plus below the rig, (ii) Swivelpole would not be suitable to support Gowanlock’s heavy lights, which are underslung precisely

because they are so heavy, (iii) there is no need to add 8-10 feet of height, which is the height of the Swivelpole, at the crown, as this adds complexity and moves the light source even further away from the ground to be illuminated beneath the rig, (iv) it would have been unsafe to use Swivelpole's long and slender pole, with a pivot point along its length, at the crown, as it would not be able to withstand the high winds and drilling vibrations at 100 feet plus above the ground, and could snap and drop components to the ground severely injuring or killing members of the drilling crew, and (v) there is nothing in Gowanlock or Swivelpole that teaches a POSITA how to attach Swivelpole's pole to a crown deck, as neither reference discloses a crown deck. Ex.2006, ¶¶115-122.

A POSITA would further understand that Swivelpole's inability to withstand the rigors of the elevated location where Gowanlock's system is used would create safety risks. For example, using Swivelpole at Gowanlock's crown (not "crown deck," which is not disclosed) would increase the "DROPS" risk. *Id.*, ¶114. Specifically, should the swivel hinge fail, then the light fixture, the pole's top portion, and all components required to make the Swivelpole function as designed may fall. *Id.*

In addition, a POSITA would not use Swivelpole because it should be removed for transportation of the rig. Specifically, with Swivelpole's light extending 8-10 feet from Gowanlock's crown, a POSITA would understand that the

safest approach would be to remove the system during mast raising and lowering. *Id.*, ¶124. Yet, as Mr. Hamdan admitted, he would “never consider a light that had to be – we would never design a light that would have to be removed for transportation” or during “mast raising and lowering” due to increased safety risks. Ex.2012, 177:25-178:3, 178:14-19.

4. Modifying Gowanlock to add Swivelpole would frustrate the purpose of each reference.

First, Swivelpole's lights are intended to light areas such as walkways, stairways, and conveyors immediately beneath light. Ex.1004 at 6 (discussing “applications”), 8-11 (indicating installed heights of 8-10 feet). As such, they are clearly unsuitable for the '016 Patent's intended purpose, which is illuminating the wellsite around the bottom of the derrick. Ex.2006, ¶¶114-120.

While Gowanlock is intended to illuminate a wellsite, albeit achieving it in a manner that differs from what is recited in the challenged claims, Gowanlock uses heavy lights slung under the **crown** (not crown deck) and attached via a light fixture attachment (102 and 202). Ex.2006, ¶119.

As Mr. Hamdan admitted, “if the lights supplied by Swivelpole or the lights that are shown in the figures...aren't strong enough, then you would look to an alternative light with more lumens to attach to the Swivelpole.” Ex.2012 at 256:19-266:6. And as explained above, a POSITA would never place Gowanlock's heavy

lights on the top of Swivelpole's long and slender 8-10 foot high pool at the crown of a rig. Ex.2006, ¶137. It would similarly frustrate the purpose of Gowanlock to combine (1) its method of using a light fixture attachment (102 and 202)—a short singular component—to attach a light fixture directly to the crown, thereby keeping the system's center of gravity close to the rig, with (2) Swivelpole's long, slender pole with swivel joint allowing it to snap in half. *Id.* Specifically, using Swivelpole's long, slender pole with swivel joint would both (1) extend the center of gravity further away from the rig, and (2) introduce a new (and unnecessary) potential point of failure at the swivel joint. *Id.*

As such, modifying Gowanlock to add Swivelpole's poles and/or lights would frustrate the purpose of Gowanlock to illuminate the ground around the wellsite.

Second, the combined system would frustrate the purpose of Swivelpole, rendering it inoperable for its intended purpose because, according to Petitioner's "expert," a POSITA would remove the swivel mechanism in the combined system. Ex.2012 at 292:21-293:5. But Swivelpole's "core" "is its unique [] swivel mechanism." Ex.1004, p.4. Its "swivel mechanism lets you lower – and rotate – a light fitting to a safe working level in minutes" without "ladders," "scaffolding," or "fall arrest systems." *Id.*, p.2. That mechanism "[a]llows one-person" to "control[] lowering of the pole top section and luminaire." *Id.*, p.4. Mr. Hamdan even admitted

Swivelpole's "main feature" being "advertis[ed]" and "emphasize[d]" in the catalog is its swivel mechanism. Ex.2012, 306:7-13, 310:11-17.

Moreover, if Petitioner, however, intended Swivelpole to replace one of the Gowanlock components, leaving Gowanlock's underslung lights, then there would be no need to "lower – and rotate – a light fitting" as contemplated by Swivelpole if its long slender pole is slung under the crown as in Gowanlock. Ex.2006 at ¶120. The worker installing or changing the light would either need to be (1) *below* the combined system's "light fitting," whereby there would not need to lower, rotate, or otherwise swivel the light fitting so that the worker can reach it,⁴ or (2) *above* the combined system's "light fitting," whereby the leverage required to raise (not "lower," as Swivelpole suggests) the "light fitting" so that the worker could reach it would increase the burden on the worker and diminish any efficiency the system might otherwise purport to provide. *Id.* And, either way means such as a ladder, scaffolding, and fall arrest system would be required—that which Swivelpole is designed to avoid. *Id.*

⁴ As Mr. Hamdan admitted, in the Gowanlock system, you would "have to go work underneath the deck to be able to adjust" or do maintenance work on the lights. Ex.2012, 276:10-17; Ex.2006 at ¶ 119 (confirming the same).

Most importantly, Mr. Hamdan admitted that he “probably wouldn’t use [Swivelpole’s] swivel joint” in a combined system and it is “very likely” that he would **remove** the swivel joint feature. Ex.2012, 292:21-293:5. He explained that “the swivel joint allows you to bring the upper portion of the pole down to a lower height so you could maintain the light.” *Id.* He further explained that if the lights of the system were “accessible...the way they are,” then there would not be a need for the swivel joint mechanism. *Id.* That swivel joint mechanism would be more useful where a POSITA is seeking to illuminate a walkway immediately below the light versus seeking to illuminate the wellsite beneath the crown deck instead of the crown deck itself. *Id.* For this reason, he opined that, “[c]onventionally,” you “probably wouldn’t see” a Swivelpole on a crown deck. *Id.* Because persons “are not hanging out at the crown,” and persons “are going up to the crown deck to perform very – you know, specific tasks,” a Swivelpole with its swivel joint would not be useful versus “a high traffic area” where “you are walking underneath it.” *Id.* These admissions contradict Petitioner’s provided motivations.

For at least these reasons, a POSITA would not think to combine Gowanlock with Swivelpole, let alone be motivated to do so.

5. *Combining the references would require a complete redesign, using little if anything from the references.*

Combining the references as Petitioner proposes would require a complete

redesign of the references, using little if anything from the references. *Id.*, ¶148. This became clear during Mr. Hamdan's deposition when he admitted that would not use any of the references' key components. Ex.2012 at 287:15-20. He admitted that he **would not** use any of (1) Swivelpole's swivel joint mechanism (*id.*) (2) any lights disclosed in either reference (*id.* at 265:19-266:3), 266:22-267:6); (3) any bracket allegedly in Gowanlock or Swivelpole (*id.* at 279:14-18); or (4) any bolts allegedly in Gowanlock or Swivelpole (*id.* at 299:22-300:10).

With this, Mr. Hamdan walked away from the combination he proposed in his declaration, suggesting instead that he would conjure up a completely different device. As such, Petitioner fails to explain how and why the references would be combined, and how a POSITA would have had a reasonable expectation of success that such a combination would work.

6. Petitioner's provided "motivations" are non-sensical.

First, it would not be "a simple combination of known elements to obtain predictable results" to "separately attach pole mounted lights with brackets attached to a crown deck or a hand railing around a crown deck," as Petitioner contends. Pet. 35. Nor would a POSITA understand it to be a "simple substitution of one known element (the Swivelpole catalog lights) for another (Gowanlock's separately attached crown deck lights) to obtain predictable results." *Id.*

This is not a “simple combination” or “simple substitution” for the reasons explained above in Sections VII(F)(1-5). Nor is there any “predictable result” where Petitioner fails to ever explain how Gowanlock would be modified in light of Swivelpole. Ex.1006, ¶¶129-131. Instead, one is left to speculate and, as explained above, a POSITA would never modify Gowanlock based on Swivelpole.

Second, Petitioner contends a POSITA would be “combine the references for the obvious and predictable result of placing or improving modular lighting on a crown deck of a rig.” Pet. 34. And, according to Petitioner, a POSITA would be motivated to combine the references based on “the use of known techniques (attaching lights with brackets and poles to a crown deck or a hand railing around a crown deck) to improve similar devices in the same way.” *Id.*, 35-36.

This is improper circular reasoning. According to Petitioner, the invention is predictable because it is arranged as in the claims (i.e., by “placing ... [a] modular lighting on a crown deck of a rig”) and is an improvement over itself, as there were no earlier crown deck lighting systems. Similarly circular is the suggestion that a “known technique[]” was “attaching lights with brackets and poles to a crown deck or a hand railing around a crown deck”—the very invention itself—despite the fact none of the references disclose a “crown deck.” All the while, Petitioner never identifies what constitutes the “similar devices” for this alleged motivation or the “same way” it purports to exist.

Third, Petitioner contends “the combination addresses the known problems (admitted in the Background of the ’016 patent) with certain types of rig lighting that used heavy frames that added weight and were potentially difficult to install because cranes were required.” Pet. 35; Ex.1008, ¶86. Petitioner similarly contends a POSITA would be motivated to combine the references because it “addresses the known problems [] with certain types of rig lighting that used heavy frames that added weight and were potentially difficult to install because cranes were require.” Pet. 35; Ex.1008, ¶86. **But suggesting that a problem was known in the industry by pointing to the patent’s discussion is textbook hindsight reasoning.** See *Orexo*, 903 F.3d at 1271 (“It is inappropriate to use the template provided by the inventor, to render the inventor’s contribution obvious.”).

Fifth, Petitioner argues a motivation based on Swivelpole’s “swivel to allow installation, adjustment, and maintenance of the light fixtures, [to] provide functionality and flexibility to the rig lighting.” Pet. 35. As described in previously, this is contradicted by Mr. Hamdan’s deposition testimony where he said he would likely remove the swivel.

Sixth, Petitioner alleges that “lights with mounting poles attached with brackets have been attached to many items such as guardrails for years using tools available in most hardware stores and commonly fabricated in oil field equipment fabrication shops and rig upyards.” Pet. 36. But none of these alleged components

or any disclosure of them are part of the Petition's ground. Instead, Petitioner only put forward Gowanlock and Swivelpole.

Seventh, a POSITA would not be motivated to combine Gowanlock and Swivelpole to arrive at the claimed invention just because Swivelpole allegedly “shows that its mounting poles *may be* readily attached to hand railings.” Pet. 34. However, this says nothing about the handrailing of a **crown deck**, and Mr. Hamdan admitted that not all handrails are handrails of a crown deck. Ex.2012, 146:11-16.

Eighth, Petitioner asserts a POSITA would have “had good reasons to pursue the known options in the Swivelpole catalog using ordinary skill and common sense to arrive at” the challenged claims, and there are “only a finite number of ways to attach lights to a crown deck or a surrounding hand railing.” Pet. 37-38. But Petitioner never explains how Gowanlock would be modified in light of Swivelpole. As shown above, a POSITA would not be motivated to modify Gowanlock based on Swivelpole or otherwise combine them. As such, it was not “common sense” to do so. Also, starting with the claims and saying it would require “ordinary skill” falls prey to hindsight reasoning. Because there is nothing in the prior art that teaches the “crown deck” limitations, this is nothing more than unsupported expert testimony that simply repeats the claim elements without even being able to point out a “crown deck” in the references.

Ninth, Petitioner argues “use of...mounting poles with brackets and bolts allows mounting or affixing the lights to differently configured, designed, or configured decks, including those with or without handrails.” Pet. 34-35; Ex.1008 ¶85. But this conclusory statement does not even purport to provide motivation to combine the specific references to arrive at the claimed invention, which recites attachment to a crown deck. As such, this statement does not provide any motivation to combine.

VIII. GROUND 3

Petitioner has failed to show Swivelpole and Chinese '413 in view of the APA renders any challenged claim obvious.

A. Chinese '413 Overview

The Chinese '413 Patent, entitled “Novel Lighting Lamp Stand for Oil Drilling Rig Well Site,” discloses a “lamp stand for an oil drilling rig well site [with] a lamp base, an upper half part of the lamp stand, a lower half part of the lamp stand, and a lamp head.” Ex.1005, ¶57.

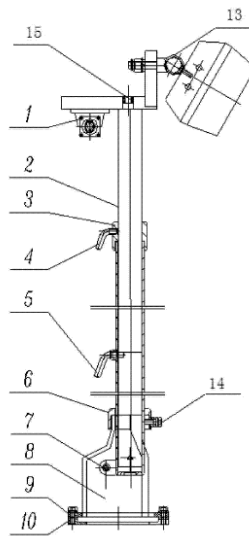


Fig. 1

B. “Admitted Prior Art” Overview

The '016 Patent's Figure 1 “illustrates a prior art crown-mounted frame-based lighting system.” Ex.1001 at 1:563-64. “The prior art lighting system is built from a single frame 120 which includes multiple frame lights 130.” *Id.*, 2:25-27. “The frame lights 130 are rigidly fixed onto the frame 120 and cannot be adjusted or repositioned.” *Id.*, 2:27-29. “The frame 120 may be installed on the crown 110, or top, of a drilling rig such that the ground around the drilling rig is illuminated when in use.” *Id.*, 30-32.

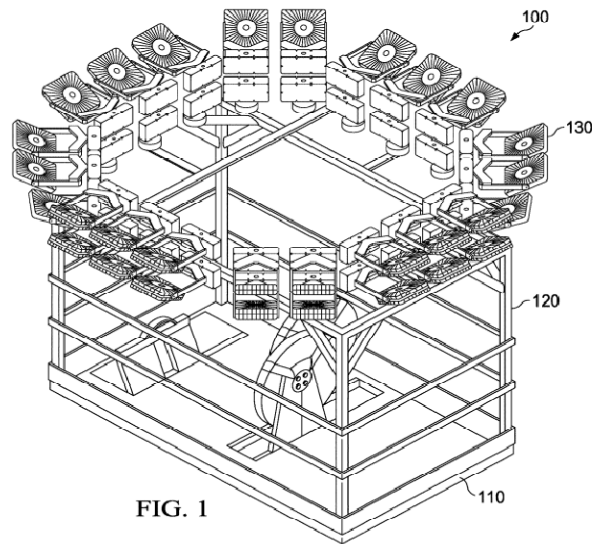


FIG. 1

C. The combination does not disclose a “crown deck.”

Swivelpole does not disclose a “crown deck” for the reasons discussed for Ground 2, which are incorporated here.

As to APA, the '016 Patent describes Figure 1 as showing “a prior art **crown-mounted** frame-based lighting system.” Ex.1001 at 1:63-64. As Petitioner acknowledges, a “crown” is a collection of structures at the uppermost portion of a drilling rig. *Id.*, 20. In contrast, a “crown deck” is a collection of structures *within the crown* that includes a walking surface, parts supporting the walking surface, and any associated handrail. *Id.* As the Board noted, “APA expressly refers to Figure 1 as illustrating a **crown**.” ID at 41.

Nevertheless, the Board also noted that “Figure 2 also includes elements 110, which it labels ‘Existing Crown Deck 110.’” *Id.* From this the Board found a POSITA “would have understood from the depiction and description of Figure[] 2

in the '016 patent that Figure 1 includes a crown deck.” ID at 42.

However, it is respectfully submitted that the Board overlooked how the specification only states “[t]he frame 120 may be installed on **the crown 110, or top**, of a drilling rig such that the ground around the drilling rig is illuminated when in use.” Ex.1001 at 2:30-32. Item 110 is nowhere else mentioned in the written description, and there is not a single statement therein that describes item 110 as a “crown deck.” And, as the agreed-to construction acknowledges, a “crown” is “the collection of structures at the uppermost portion of a drilling rig,” and the “crown deck” is “a collection of structures within the crown that includes a walking surface, parts supporting the walking surface, and any associated handrail.” Pet. 20; Ex.1008 ¶20.

Regardless, the item numbers do not limit or otherwise affect the claims’ scope. *See, e.g., Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, No. 2:14-CV-0911, 2015 WL 6956722, at *7 (E.D. TEx.Nov. 9, 2015) (“Courts that have considered the implications of the use of reference numbers in a claim have followed the general rule that reference numbers do not limit the claims. The MPEP similarly states that reference numbers are ‘considered as having no effect on the scope of the claims[.]’”).

The WDTX court’s claim construction memorandum—from where Petitioner pulled its “crown deck” construction—rejected this same position based on item 110.

Ex.1009 at 6. The court explained that using “110” to describe the crown in Figure 1 and the reference to “Existing Crown Deck 110” in Figure 2 is a “one-off labeling oddity.” *Id.*

Petitioner also cites Chinese '413's figure for this limitation, providing the following conclusory statement without ever identifying a “crown deck”: “A POSITA would readily employ lights, mounting poles, and brackets...to make a modular lighting system *mounted on a rig* as it is admitted in the '016 Background that the existing system in Figure 1 is too heavy and difficult to install.” *Id.*, 76-77. But mounting a light on a rig is not what is claimed, and Petitioner nowhere identifies a “crown deck” in Chinese '413. Nor can it. *See* Ex.1005.

Mr. Hamdan admitted Chinese '413's Figure does not show a rig, a derrick, a crown deck, or handrails. Ex.2012 at 58:14-60:13. Instead, he argued (outside the scope of his declaration) that he can infer Chinese '413's lamp stand would be installed on a rig generally because (1) its title refers to “oil drilling rig well site” (*id.* at 44:15-18); (2) it refers to “[a] novel lighting lamp support of a petroleum drilling machine well site” (*id.* at 44:19-25); (3) it has a “base plate” (*id.* at 55:6-7) and (iv) “it has to fold down for transportation” (*id.* at 55:7-10).

Each of Mr. Hamdan's arguments fails. As to (1)-(2), Mr. Hamdan admitted “the well site and the rig is [sic] two different – are two different things.” *Id.* at

53:18-20. He testified a “well site” is “just a piece of land” that is leased by the oil company “where you’re going to go drill the wells.” *Id.* at 54:6-8. Thus, the reference to an “oil drilling well site” or “lighting lamp support of a petroleum drilling machine well site” would not lead a POSITA to conclude that the Chinese ‘413 system is installed on a rig, let alone a “crown deck” as claimed. Ex.2006 at ¶162.

As to (3) regarding a “base plate,” if Mr. Hamdan intended to identify “fixing plate 10 under the lamp base” (which he did not in his declaration), Chinese ‘413 states the “fixing plate 10” “can be welded on the top of **a platform** of a part that needs lighting.” *Id.*, [0023]. But, as discussed previously, Mr. Hamdan admitted that disclosing a general platform around a rig site is not the same as disclosing a **crown deck**. Even so, the welding of “fixing plate 10” is in reference to “a platform of a part that needs lighting,” and a POSITA would not understand a “crown deck” itself to be “a part that needs lighting”; instead, for the challenged claims, it is the well site that is illuminated. Ex.2012 at 291:2-9; Ex.1004 at [0023].

As to (4) regarding Mr. Hamdan’s belief that the Chinese ‘413 system “has to fold down for transportation” (Ex.2012 at 48:18-22), the reference discloses no such thing. But even if the Chinese ‘413 system “has to fold down for transportation,” a POSITA would not understand the Chinese ‘413 system is installed on a rig, let alone a “crown deck.” Ex.2006, ¶165. For example, as Mr. Hamdan admitted, lighting

towers used around a wellsite can be folded down or disassembled for transportation, but that does not mean the lighting towers are installed on a rig, let alone a crown deck. Ex.2012, 51:2-6; Ex.2006, ¶165 (explaining the same).

Finally, Petitioner cites the undated and unauthenticated pictures at Exhibits 1012 and 1012-A as showing “common knowledge” for the Swivelpole-Chinese ‘413-APA combination. Pet. 39, 70. But the Board should disregard the pictures, as Petitioner did not identify them as part of its Ground. *Apple Inc. v. AliveCor, Inc.*, IPR2022-00873, Paper 7 at 16 n.1 (“We give no weight to the picture ... because the Petition does not identify the source or date of the picture.”). Indeed, Mr. Hamdan admitted he has not opined on those pictures at Exhibits 1012 and 1012-A as part of the invalidity grounds in his declaration. Ex.2012, 376:2-16.

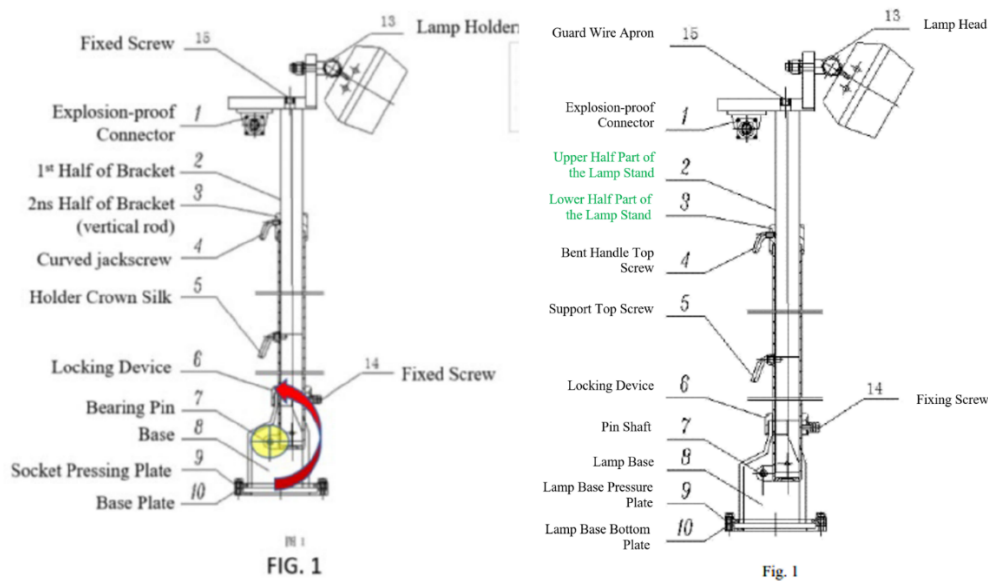
D. The combination does not disclose “a bracket configured to attach the mounting pole to the crown deck of the rig.”

Swivelpole does not disclose this limitation for the reasons discussed for Ground 2, incorporated here.

Petitioner alleges “Chinese ’413 figure [] show[s] a bracket configured to attach the mounting pole to the crown deck or a hand rail, i.e., guard rail, around the crown deck.” Pet. 79. Petitioner purports to identify items 2 and 3 in Figure 1 of Chinese ’413 as the claimed “bracket.”

Petitioner is wrong for multiple reasons. *First*, Petitioner’s annotated Figure

1 (bottom left) misrepresents Chinese '413. *Compare* Pet. 78, and Hamdan Decl. ¶79 with Ex.1005 at ¶18. Items 2 and 3 are part of a lamp stand. Indeed, Figure 1 shows “2. upper half part of the lamp stand” and “3. lower half part of the lamp stand.” Ex.1005, [0018]. It adds that “[a] lamp stand part 2 and lamp stand part 3 are two fully independent parts.” Ex.1005, [0023]. The Board agreed: “Petitioner’s annotation of Figure 1 is inaccurate, and elements 2 and 3 are incorrectly labeled as parts of a bracket.” ID at 42.



Compare Pet. 78, with Ex.1005 at Fig. 1 (annotated).

Second, Chinese '413's lamp stands part 2 and 3 are not, as Petitioner contends, “configured to attach the mounting pole to the crown deck or a hand rail, i.e., guard rail, around the crown deck.” Pet. 79. Chinese '413 never discusses a

“crown deck,” “hand rail,” or even a “guard rail.” Petitioner identifies no evidence to the contrary.

Mr. Hamdan **admitted** Chinese ‘413’s Figure 1 does not show a rig, a derrick, a crown deck, or handrails. Ex.2012, 58:14-60:13. And each of the reasons Mr. Hamdan offers for being able *infer* Chinese ‘413’s lamp stand would be installed on a rig are misplaced for the reasons discussed in Section VIII(C).

Third, Chinese ‘413 discusses attaching the lamp stand with welds, not a bracket. Ex.1005, [0023]; ID at 42 (discussing the same). Thus, a POSITA would not understand Chinese ‘413 to disclose a bracket, let alone one “configured to attach the mounting pole to the crown deck of the rig.” Ex.2012, ¶¶171-72.

Petitioner and its expert do not (and cannot) rely on any APA for this missing element. *See* Pet. 79; Hamdan Decl. p. 72; Ex.2006, ¶¶171-72.

E. The combination does not disclose a “bracket [] connected to the crown deck of the rig using bolts.”

For the reasons discussed for Ground 2, incorporated here, Swivelpole does not disclose this limitation.

Petitioner alleges “Chinese ‘413 figure above show[s] a bracket that *may be* connected to the crown deck using bolts.” Pet. 79. However, neither Petitioner nor its expert provide support for this conclusion. Indeed, Chinese ‘413 **never** mentions or shows bolts, a crown deck, or even brackets. Ex.2006, ¶174.

Petitioner does not and cannot rely on APA for this limitation. Pet. 73; Ex.1008, p.71.

F. No motivation to combine the references with a reasonable expectation of success.

1. *A POSITA would not be motivated to combine the references with a reasonable expectation of success.*

Although unclear, it appears Petitioner contends that a POSITA would be motivated to combine (1) (a) “the lights, mounting poles and brackets shown in the Swivelpole catalog,” *or* (b) “the lights, mounting poles and brackets shown in...Chinese ’413, with (2) the alleged “crown deck” of the APA (i.e., Figure 1 of the ’016 Patent). *See* Pet. 39; Ex.1008 ¶94.

This is wrong for several, independent reasons. ***First***, the APA does not disclose a crown deck, and neither do the other references. Therefore, a POSITA would never be motivated to modify these references to create a modular lighting system that is attached to a crown deck that none of these references even contemplated.

Second, as discussed previously, Swivelpole’s critical component is its swivel joint. Yet according to Petitioner’s “expert,” a POSITA would be motivated to remove the swivel joint in any combination, as discussed in Section VII(F)(4). Ex.2012 at 292:21-293:5 To do so would render Swivelpole inoperable for its intended purpose. Ex.2006, ¶¶180-81.

Third, it would fundamentally alter the purpose of the APA's "frame-based lighting system" to add the alleged "lights, mounting poles and brackets shown in the Swivelpole catalog," as Petition contends. *Id.*, ¶182. For a POSITA to obtain any value from Swivelpole's "swivel" feature, a POSITA would need to completely redesign the APA's monolithic "frame-based lighting system." *Id.*

Fourth, it would fundamentally alter the purpose of the APA's "frame-based lighting system" to add the Chinese '413's alleged "lights, mounting poles and brackets." *Id.* ¶183. Chinese '413 shows a single "lamp stand" that can "slide up and down and rotate" and has a "light base" that "can be rotated by 360 degrees." Ex.1005, [0020]-[0023]. For a POSITA to obtain any value from these telescoping or rotatable features, a POSITA would need to remove all components of the APA's "frame-based lighting system." Ex.2006, ¶183.

Fifth, a POSITA would not add the alleged "lights" of either Swivelpole or Chinese '413 to the APA. The APA's "frame-based lighting system" is "built from a single frame 120 which includes multiple frame lights 130." Ex.1001 at 2:25-27. These "multiple frame lights 130" provide the lumen output required to light the well site surrounding the derrick. Ex.2006, ¶184. A POSITA would understand that this to be 100+ feet away from the light source. *Id.* In contrast, as discussed in Section VII(F)(6), Swivelpole's 8-10-foot height is designed to illuminate the area

immediately beneath it. *Id.*, ¶83. Likewise, Chinese '413's lights also illuminate the area immediately beneath. *Id.*, ¶186.

Sixth, as discussed in Section VII(F), a POSITA would not be motivated to use Swivelpole on a crown or crown deck because it would increase the "DROPS" risk. Ex.2006, ¶114. A POSITA would not be motivated to use the Chinese '413 system for the same reasons. Ex.2006, ¶188; Ex.1005 at Fig. 1, [0018].

2. *Petitioner's provided "motivations" are non-sensical.*

Petitioner's alleged motivations to combine are nearly identical to the alleged motivations for Ground 2, and each fails for the same reasons discussed in Section VII.F, which are incorporated here.

IX. GROUND 4

Petitioner has failed to show Magnalight in view of the APA renders any challenged claim obvious.

A. Magnalight Overview

Magnalight (Ex.1006) depicts a person in what appears to be a parking lot, assembling and disassembling some sort of device. The video shows no rig or any other indicia of a wellsite. The text beneath the viewer states that the device shown is an "adjustable aluminum mount" with an "adjustable J-hook bottom bracket." Ex.1006A. The device allegedly includes a "Work Light" with a "yolk" providing "vertical 90 degrees of tilt and 360 degrees of pivot rotation." *Id.* The "Work Light"

is described as a “12 volt work light.” *Id.* Petitioner and its expert provide two screen shots (below) in discussing Magnalight's alleged disclosures.



Pet. 29-30, 46-47, 86-87; Ex.1008, pp.49-50, 74-75, 80-81.

B. The combination does not disclose a “crown deck.”

Petitioner has not shown the APA discloses a “crown deck” for the reasons discussed for Ground 3, which are incorporated here.

Petitioner makes conclusory statements about a crown deck being “described and/or shown” in Maganlight. Pet. 81-82; Ex.1008, pp.78-82. But Petitioner never identifies a “crown deck.” Indeed, for claim 23's limitation reciting “a crown deck at the top of the derrick,” Petitioner only relies on the APA as allegedly disclosing it. *See* Pet. 83; Ex.1008, p.82.

Mr. Hamdan admitted that Magnalight does not disclose a rig, let alone a “crown deck.” Ex.2012, 330:7-10 (“Q. ... There’s nothing in the Magnalight video that shows a rig, right? A. That shows a rig? I do not recall seeing a rig on the Magnalight video.”).

Nevertheless, Mr. Hamdan contends Magnalight “*has the ability to be* attached to a handrail that exists on a crown deck” because, in his view, the rectangular structure with wheels in the video “could be interpreted as it’s intended to mimic a handrail.” Ex.2012, 330:7-334:5. But this is incorrect, as a POSITA would not understand the rectangular structure with wheels on the ground to be a “handrail” and certainly not one associated with a “crown deck.” Ex.2006, ¶204. In fact, Mr. Hamdan eventually admitted that (i) he does not know what Magnalight’s creators intended the rectangular object to “mimic,” (ii) a handrail around a crown deck does not have wheels at the bottom, and (iii) the rectangular object is not being used as a handrail in the video. Ex.2012, 333:5-20, 336:7-337:6.

C. The combination does not disclose a “mounting pole.”

Petitioner does not (and cannot) rely on the APA as allegedly disclosing a “mounting pole.” Pet. 81, 87-89; Ex.1008, pp.82-83.

Instead, Petitioner summarily states that “[a] POSITA would readily employ the lights, mounting poles, and brackets shown in the Magnalight YouTube video above.” Pet. 87; *id.*, 81-84, 87-89. But a POSITA would not understand Mangalight

to disclose a “mounting pole” because it shows only a J-hook bracket with two linear components that fold at the J-hook bracket’s center. Ex.2006, ¶¶205-207.

Beyond that, Mr. Hamdan provides (i) an unidentified and undated photo as allegedly showing that “a light fixture or other items are commonly attached to a handrail via a pole, a bracket, and/or more screws or bolts,” Ex.1008 ¶108, and (ii) a picture of a flag pole to support the conclusory statement that “[p]oles have been attached to crown deck hand railing with flag, airplane lights, and other structures attached,” *id.*, ¶1009.

But Mr. Hamdan admitted he does not rely on the pictures (also at Ex.1008 ¶62) for his obviousness combination. Ex.2012, 337:1-14. And, even so, his bare reference to these pictures lacks the “requisite articulated reasoning with rational underpinning.” *Charter Commc ’ns v. Spring Commc ’ns Co.*, IPR2019-01137, Paper 9 at 26 (PTAB Dec. 9, 2019). Thus, they should be given no weight. *Xerox*, Paper 9 at 15.

D. The combination does not disclose a “a bracket configured to attach the mounting pole to the crown deck of the rig.”

Petitioner does not (and cannot) rely on the APA as allegedly disclosing this limitation. Pet. 81, 87-89; Ex.1008, pp.82-83.

Magnalight does not disclose this limitation because a POSITA would understand the alleged “bracket” to which Petitioner points is not “configured to

attach the mounting pole to the crown deck of the rig,” as claimed. Ex.2006, ¶209. Magnalight shows a temporary J-hook bracket that cannot be used “to attach the mounting pole to the crown deck of the rig” because, as shown in the video, there is no “crown deck,” the device is easily lifted from the rectangular structure, and it appears to wobble as it is both installed and removed. *Id.*; Ex.1006 at 0:35–0:37. This confirms what a POSITA would already understand: Magnalight would not be able to withstand the harsh conditions at a “crown deck” and would pose impossible structural hurdles to such use. *Id.*

E. The combination does not disclose a “bracket [] connected to the crown deck of the rig using bolts.”

Petitioner does not (and cannot) rely on the APA as allegedly disclosing this limitation. Pet. 81, 87-89; Ex.1008, pp.82-83.

Magnalight does not disclose this limitation either. For the reasons discussed in Section IX(D), incorporated here, Magnalight does not disclose “a bracket configured to attach the mounting pole to the crown deck of the rig.” As such, it cannot disclose “the bracket is connected to the crown deck of the rig using bolts.”

Petitioner only suggests Magnalight “shows a bracket that *may be* connected to the crown deck or a hand railing, i.e., guard rail, around the crown deck using bolts.” Pet. 88; Ex.1008 ¶111. This is because Magnalight does not actually disclose this limitation. Instead, a POSITA would understand that, instead of using bolts,

Magnalight uses a “J-hook” system that sits atop some rectangular structure. Ex.2006, ¶¶211-13.

Petitioner's statement that “[t]he Magnalight YouTube video and/or as commonly known by a POSITA disclose a bracket that *may be* used to connect to the crown deck of the rig using bolts” is also unsupported. Pet. 82. Just because something *could be* done in the abstract based on present knowledge does not mean that a reference discloses it to a POSITA for the application that is claimed.

F. No motivation to combine the references with a reasonable expectation of success.

A POSITA would not be motivated to combine the references' teachings with a reasonable expectation of success.

1. A POSITA would not be motivated to combine the references with a reasonable expectation of success.

A POSITA would not be motivated to combine Magnalight with the APA with a reasonable expectation of success. Ex.2006, ¶214. In particular, a POSITA would not consider using Magnalight at the top of a rig where the APA's frame-based system is located. *Id.*, ¶215. Magnalight shows a flimsy device with a J-hook and two folding linear structures that is not attached to the silver, rectangular structure in a stable, safe, or secure fashion. *Id.* Put differently, a POSITA would not understand Magnalight's ability to sit atop the rectangular structure to translate to the type of robust, secure, and sturdy system required for something located at the

top of a drilling rig. *Id.*

Additionally, the combination would alter the fundamental purpose of Magnalight. *Id.* ¶216. To utilize the APA's "frame-based lighting system" as part of the combined system in any way, a POSITA would need to remove Magnalight's adjustability, tilt, and pivot rotation features. *Id.* ¶217. Again, this would replace Magnalight, not add to it, thereby defeating its intended operation. *Id.*

Moreover, a POSITA would understand Magnalight's light to be unsuitable for use at the top of a rig to illuminate the wellsite around the derrick's base. *Id.*, ¶218. Specifically, a POSITA would understand the "12 volt work light" that can allegedly mount to a "rail, ladder, or scaffolding" is designed to illuminate an area within a close distance from the light, not a wellsite at 100+ feet away. *Id.*

Additionally, the combination would present significant safety concerns, including additional, unwanted "DROPS" risks. *Id.* ¶219. For example, if the loose-fitting "J-hook" failed when subject to the harsh environment at the top of the rig (which is likely), or the rotatable components did not withstand the wear-and-tear to which it would be subject (which is also likely), the light and all components of the device would fall. *Id.* Thus, a POSITA would not be motivated to use the Magnalight with the APA's frame-based light system at the crown. *Id.*

2. Petitioner's provided "motivations" are non-sensical.

Petitioner's alleged motivations to combine are nearly identical to the alleged

motivations for Ground 2, and each fails for the same reasons discussed in Section VII.F, which are incorporated here.

The only motivation that is arguably unique for Ground 4 is Petitioner's "mak[ing] the lights more accessible and easier to adjust" statement, which is still nearly the same as for Ground 2. Pet. 48. It is insufficient for the same reasons. In addition, the description beneath the video viewer on which Petitioner purports to rely says nothing about accessibility. And Magnalight's so-called "adjustability" would deter a POSITA from combining the references, as discussed above. Ex.2006, ¶222.

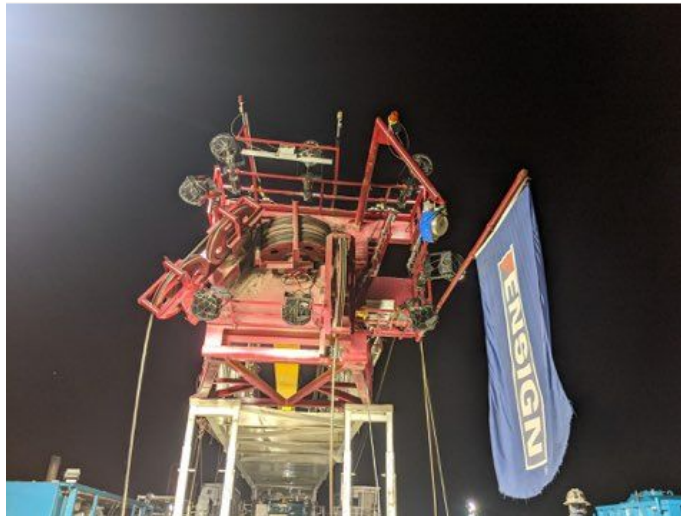
X. SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS

A. There is a strong nexus.

A nexus is presumed "when the patentee shows that the asserted objective evidence is tied to a specific product and that product 'embodies the claimed features, and is coextensive with them.'" *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (citation omitted). "The coextensive requirement does not require a patentee to prove perfect correspondence between the product and a patent claim." *Quanergy Sys., Inc. v. Velodyne Lidar USA, Inc.*, 24 F.4th 1406, 1417–18 (Fed. Cir. 2022). "Rather, it requires the patentee to demonstrate that 'the product is essentially the claimed invention.'" *Id.*

Here, a nexus is presumed because C&M's Crown Jewel product embodies the claimed features and is coextensive with them, e.g., the claimed invention is not a subcomponent of the product. Ex.2006 ¶¶234-35, App'x A.

First, the Crown Jewel practices claim 1. Ex.2006 ¶¶234-35, App'x A. As confirmed in Dr. Wooley's claim charts, and as shown in the photos below of a Crown Jewel attached to one of Petitioner's rigs, the Crown Jewel is a modular lighting system mounted on a rig. *Id.* It comprises a plurality of light units where each light unit is separately attached to a crown deck of the rig—specifically, the handrails of the crown deck. *Id.* The Crown Jewel includes a mounting pole and a light fixture comprising one or more lights. *Id.* And it uses a bracket to attach the mounting pole to the handrails of the crown deck. *Id.*



Ex.2007.



Ex.2009.



Ex.2025.



Ex.2026.

The Crown Jewel also practices claim 2. *Id.* As shown in Dr. Wooley's claim charts, the bracket is connected to the crown deck using bolts. *See* Wooley Appx.A.

The Crown Jewel also practices claim 23. *Id.* As shown in Dr. Wooley's claim charts, the Crown Jewel is installed on a rig that includes a derrick and a crown deck at the top of the derrick. *Id.* It has a plurality of light units where each light unit is separately attached to the crown deck. *Id.* Each light unit includes a mounting pole wherein each light unit comprises a separate mounting pole, such that the system comprises a plurality of mounting poles. *Id.* Each of the Crown Jewel's light units comprises a light fixture with one or more lights, and the light fixture is coupled to the mounting pole. *Id.*

As demonstrated by the evidence, the Crown Jewel has "perfect or near perfect correspondence" to the challenged claims. *Fox*, 944 F.3d at 1374 (Fed. Cir.

2019). In fact, there is nothing in claim 1 that is not in the product, i.e., the Crown Jewel product embodies the claimed features and is coextensive with them, and the product is essentially the claimed invention. Thus, PO is entitled to a presumption of nexus.

Because a nexus is presumed, the burden shifts to Petitioner to show that the objective evidence “was due to extraneous factors other than the patented invention.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317 at 1330 (Fed. Cir. 2016) (quotation omitted). Petitioner cannot carry that burden.

Any unclaimed features of the Crown Jewel are not critical and do not materially impact the product's functionality. *Quanergy*, 24 F.4th at 1418. Indeed, the Crown Jewel is coextensive with the challenged claims. Ex.2006 ¶¶234-35, App'x A.

Even if the presumption does not apply, a nexus still exists between the objective indicia and the claimed invention where “the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Fox*, 944 F.3d at 1373-74.

Here, “the claimed combination as a whole [] serves as a nexus for the objective evidence.” *WBIP*, 829 F.3d at 1330. It is undisputed that the claimed combination was not taught in the art—Petitioner admits that none of the references teach a “crown deck,” and other key limitations are missing, as discussed in Sections

VI-IX. The claimed system as a whole is what sets it apart from the prior art. *See id.* Thus, it is the precise system recited in the challenged claims that is embodied in the Crown Jewel, and the objective evidence of non-obviousness is the direct result of the invention claimed in the '016 Patent, as explained further below in the context of the objective indicia of non-obviousness.

B. Copying

Evidence of copying, which “requires the replication of a specific product,” can be demonstrated through “access to, and substantial similarity to, the patented product (as opposed to the patent).” *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004). Sufficient evidence of copying exists where “the evidence fails to persuade [the tribunal] that th[e] similarity between the parties’ respective products is either a coincidence or the result of independent creation.” *Intri-Plex*, Paper 83 at 41 (PTAB Mar. 23, 2015).

Here, the evidence of copying comes directly from Petitioner. Version 2 of Petitioner’s “Enhanced Lease Lighting System” or “ELLS” (“ELLS v2”) was created in 2021. Ex.2011; Ex.2012, 289:14-24.

There are several facts that make it clear that Ensign copied C&M’s Crown Jewel product when designing their ELLS v2 lighting system, and that the similarity between the two products is neither a coincidence nor the result of independent creation. First, Petitioner’s expert Mr. Hamdan—one of the persons involved in

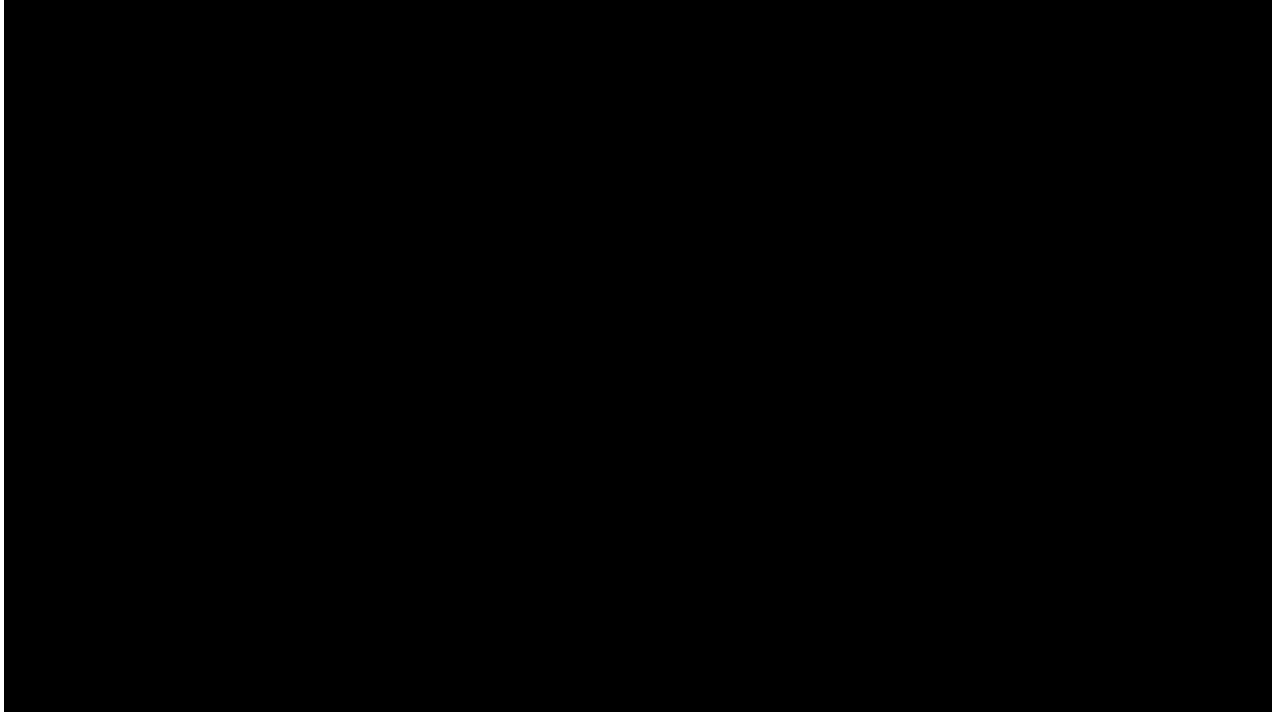
designing the ELLS v2—admitted Ensign had “review[ed] and approve[d]” C&M’s Crown Jewel so it could “be installed on [Ensign] rigs [REDACTED].” Ex.2012, 351:24-352:21. In fact, well before introducing their system, Ensign asked for and received technical drawings of C&M’s Crown Jewel, which it used to approve installation of the Crown Jewel on its rigs. Ex.2014; Ex.2012, 356:24-357:7, 357:14-358:24, 359:18-22, 366:18-22. As noted by the Federal Circuit, copying can be shown by “access to the patent product (here both the product and the engineering drawings) combined with substantial similarity to the patent product.” *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010).

Then, concerned about losing market share to an outside company and irritated that an outside company was using power supplied by its rig’s generators, Ex.2015, Ensign tried to eliminate C&M’s Crown Jewel by making a copy of it instead of developing their own design. Indeed, Ensign’s copying was so extensive that it even went so far as [REDACTED]

[REDACTED] Ex.2012, 221:13-19, 228:14-24. Mr. Hamdan was of the opinion during the ELLS v2 design

[REDACTED]
[REDACTED]
[REDACTED] Ex.2013 at 2; Ex.2012, 226:8-227:6.

Petitioner succeeded in its efforts to copy the Crown Jewel, replicating the claimed invention from at least claims 1, 2, and 23 for the ELLS v2. Ex.2006, ¶¶234-35, App'x B (providing claim charts). As summarized in the figure below from one of Ensign's documents (annotations added), the ELLS v2 satisfies each limitation.



Unabashed, Mr. Hamdan told Ensign's President that ELLS v2

Ex.2011. Mr. Hamdan also admitted

just like the

Crown Jewel and the challenged claims.

As shown in the claim charts (Ex.2006 ¶¶234-235, App'x B), Ensign's ELLS v2 is an exact and direct copy of the Crown Jewel. This secondary considerations evidence is the direct result of the claimed invention's unique characteristics, as shown by the exact one-to-one copying of the same features—i.e., the modular lighting system with light units each separately attached to a crown deck, the use of mounting poles in the system where a bracket with bolts is utilized to attach the mounting pole to the crown deck specifically. As such, even if not presumed, a nexus still exists between copying evidence and the claimed invention, which is embodied in the Crown Jewel.

C. Industry Praise

Industry praise is further evidence that the invention is not obvious. Industry praise provides “probative and cogent evidence that [a POSITA] would not have reasonably expected [the invention would be successful].” *Institut Pasteur v. Focarino*, 738 F.3d 1337, 1347 (Fed. Cir. 2013).

The industry has praised the Crown Jewel for its pole-mounted design, light weight, and increased safety by sufficiently illuminating wellsite. For example, a Chesapeake Energy employee stated: “The pole mounted design is a game changer, prior designs were heavy frame-based designs or those lights that had to be welded to the crown deck. C-MOR's design is beautiful given its light weight and

extendibility above the crown deck, allowing the attached lights to extend beyond the handrails or even turned inward during rig moves.” Ex.2016.

There is a nexus between this statement and the merits of the invention. The unique feature of the claimed invention is the modular, pole-mounted design that is attached to the crown deck, which stands in contrast to the heavy, frame-based systems in the prior art. The modular, pole-mounted design allows for the system to (1) remain lightweight, as the heavy structural frame of the prior art system is not required, and (2) extend above the handrails, which allows it to not create obstructions during rig moves.

As another example, a drilling engineer from XTO Energy stated: “I think we’re all in agreement that this system is far more superior than using the light plants. ... After looking at the design and price, I know we all feel there should be no reason not to have these on every rig in the Permian.” Ex.2017, 9.

This evidence is the direct result of the claimed invention’s unique characteristics. The modular, pole-mounted design that is attached to the crown deck differs from the prior art “light plants,” and its “superior[ity]” and “design” are the direct result of the features that distinguish the claimed system from the prior art.

D. Commercial Success

Commercial success is strong evidence of non-obviousness, *WBIP*, 829 F.3d at 1337, and it is undisputable that the Crown Jewel has been very commercially

successful.

Since the Crown Jewel's introduction, its rentals grew rapidly. Ex.2006, ¶241. The revenue from 2018 through approximately November of 2023 for rental and sale of the Crown Jewel is at least [REDACTED]. *Id.* And the revenue from 2018 through approximately November of 2023 for installation, maintenance, and other support for the Crown Jewel is at least [REDACTED]. *Id.*

To date, the Crown Jewel has been installed on at least [REDACTED] standard drilling rigs across the US. Ex.2006, ¶241. There are approximately at least [REDACTED] active Crown Jewel systems installed on drilling rigs today, amounting to approximately at least [REDACTED] of total active rigs in the US. *Id.*, ¶242. As such, the Crown Jewel, which is coextensive with the claims, has been successful in the drilling industry. C&M built a better mousetrap, and the world beat a path to their door.

E. Long-felt but unsolved need

Traditionally, standalone light towers were used to provide well site illumination. "These portable light towers include a generator with a pair of wheels." Ex.2018, [0005]. "The portable light tower systems are also stowed in a horizontal position." *Id.*, [0007]. "For operation, the mast of the system is rotated from a horizontal position to a vertical position." *Id.* "Thereafter, the mast can be telescoped," all of which "increases the mechanical parts that can fail on the job site." *Id.* As appreciated by others, "due to their positioning and quality, such

conventional lighting systems typically illuminate only localized or relatively small areas, and lack the quality and intensity of light emission to sufficiently illuminate said entire drilling rig and surrounding areas.” Ex.2019 at 1:54-58. “This can increase the costs of lighting the rig as both additional equipment and personnel may be required.” Ex.2020, [0006]. “In addition, pieces of equipment such as fuel powered light towers are often not tall enough to provide a lighting source above the working surfaces of a rig.” *Id.*

Conventional lighting systems also included frame-based lighting systems. As the '016 Patent's Figure 1 shows, these systems employed heavy frames mounted at the top/crown of a rig. Ex.1001 at Fig. 1. “Prior art lighting systems for drilling rigs are fixed, monolithic structures that are typically crown or frame systems, with a single size and layout accommodating one type of light and rig.” *Id.*, 1:23-26. The '016 Patent explains that, “[b]ecause they are a single structural unit, they are heavy and typically require cranes along with multiple workers for installation, removal, and adjustments.” *Id.*, 1:26-28. As such, “[a] typical rig lighting frame system may require between 6 and 12 hours for installation.” *Id.*, 1:29-30. In addition, “before a derrick can be moved, the lighting systems must be removed—again with all of the necessary equipment and personnel—and a similar amount of time may be required for uninstallation.” *Id.*, 1:30-33. This, in turn, “extend[s] the time needed

between rig deployment.” *Id.*, 1:33-35. And the extension of time means an increase in cost and safety risk. *Id.*, 1:37-39.

It was not until the Crown Jewel that a less expensive, lighter, modular system that required less time and manpower to install, was introduced to the market. As Petitioner's references demonstrate, no one in the field had developed a way of achieving these goals. The Crown Jewel, while eloquently simple, was the “better mousetrap” that the industry needed (and later copied). Thus, even if not presumed, a nexus still exists.

XI. CONCLUSION

For at least the foregoing reasons, PO respectfully requests the Board confirm the challenged claims' patentability.

Dated: January 18, 2024

Respectfully Submitted,

/ Dion M. Bregman /
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CERTIFICATION OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This PATENT OWNER RESPONSE to Petition includes 13,954 words, as counted by Microsoft Word, and is therefore in compliance with the 14,000-word limit established by 37 C.F.R. § 42.24(b)(1). Accordingly, pursuant to 37 C.F.R. § 42.24(d), lead counsel for Patent Owner hereby certifies that this paper complies with the applicable type-volume limits.

Dated: January 18, 2024

Respectfully Submitted,

/ Dion M. Bregman /

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), lead counsel for Patent Owner hereby certifies that on January 18, 2024, a copy of this MOTION TO SEAL was served to the email correspondence address of record for Petitioner's counsel of record:

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