

# United States Court of Appeals for the Federal Circuit

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IN RE: MAGNUM OIL TOOLS  
INTERNATIONAL, LTD.,  
*Appellant*

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2015-1300

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board, in No. IPR2013-  
00231.

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Decided: July 25, 2016

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NATHANIEL ST. CLAIR, II, Jackson Walker LLP, Dallas,  
TX, argued for appellant. Also represented by JOHN  
MARTIN JACKSON, CHRISTOPHER J. ROURK.

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States Patent and Trademark Office, Alexandria, VA,  
argued for intervenor Michelle K. Lee. Also represented  
by THOMAS W. KRAUSE, SCOTT WEIDENFELLER, MICHAEL  
SUMNER FORMAN.

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Before NEWMAN, O'MALLEY, and CHEN, *Circuit Judges*.  
O'MALLEY, *Circuit Judge*.

McClinton Energy Group, LLC filed a petition for *in-*  
*ter partes* review ("IPR") of U.S. Patent No. 8,079,413 (the

“413 patent”), owned by Magnum Oil Tools International, Ltd. (“Magnum”). The Patent Trial and Appeal Board (“Board”) instituted review and issued a final written decision holding all challenged claims of the ’413 patent obvious under 35 U.S.C. § 103. Subsequently, McClinton and Magnum settled their dispute over the ’413 patent and other patents not at issue here. Magnum now appeals the Board’s judgment regarding the ’413 patent. The Director of the U.S. Patent and Trademark Office (“PTO”) intervened in the appeal pursuant to 35 U.S.C. § 143. For the following reasons, we *reverse*.

## I. FACTUAL BACKGROUND

### A. The ’413 Patent

The ’413 patent is directed to technology in the field of oil drilling through use of hydraulic fracturing, commonly known as “fracking.” Fracking is a technique used to extract natural gas and oil from natural shale formations. During the fracking process, a hole known as a “wellbore” is drilled into the earth. Then, a fluid mixture is injected down the wellbore into the shale at high pressure to release the gas or oil.

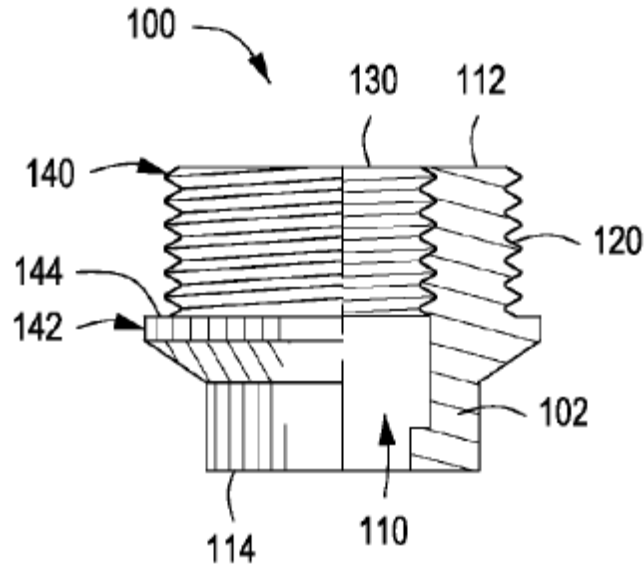
Downhole plugs divide the wellbore into separate sections so that different sections of the wellbore may be fracked at different times. A setting tool is used to insert the downhole plugs into their appropriate positions in the wellbore. The body of the plug is then secured in place via the radial expansion of “slips” and “malleable elements” that contact the sidewalls of the wellbore. The expanded plug forms an airtight barrier, blocking movement of liquid or gas around the plug. *See* ’413 patent, at col. 8, l. 46–col. 9, l. 13.

The setting tool can connect either to the top of the plug facing the opening of the wellbore (“top-set”), or to the bottom of the plug (“bottom-set”). The ’413 patent teaches a bottom-set plug in which the setting tool fits

through a hollow passageway in the body of the plug and attaches near the bottom of the plug. *See id.* at col. 9, ll. 29-46. The setting tool exerts an axial force upward on the body of the plug while a “setting sleeve” exerts an axial force downward on the plug. The resulting axial compression causes the plug to set in place via radial expansion. *Id.*

Once the downhole plug is set, the setting tool must be disengaged from the plug and extracted from the wellbore. The '413 patent at issue describes a mechanism for releasing the setting tool from the downhole plug. *Id.* at col. 3, ll. 47-57.

The '413 patent teaches the use of an insert having a “lower shear or shearable mechanism” for releasing a setting tool. '413 patent, at col. 2, ll. 54-56. The patent teaches that the insert is placed within the plug body and contains both shearable and nonshearable threads. The inner threads connected to the setting tool shear when exposed to sufficient stress, but the outer threads connected to the plug body do not shear. The stress level required to shear the shearable threads is lower than that required to dislodge the plug body, so that the setting tool may be released without dislodging the plug from its set position. *Id.* at col. 2, ll. 59-63. Figure 1A of the '413 patent depicts the claimed insert:



**FIG. 1A**

The '413 patent has twenty claims, three of which are independent (claims 1, 7, and 17). All of the claims of the '413 patent recite that the "shearable threads" of the release mechanism are part of an insert that is placed within the central bore of the plug. Claim 1 of the '413 patent is representative, and is reproduced below in its entirety:

1. A plug for isolating a wellbore, comprising:
  - a body having a first end and a second end;
  - at least one malleable element disposed about the body;
  - at least one slip disposed about the body;

at least one conical member disposed about the body; and

*an insert screwed into an inner surface of the body proximate the second end of the body and adapted to receive a setting tool that enters the body through the first end thereof, wherein:*

*the insert comprises one or more shearable threads disposed on an inner surface thereof;*

the insert has a passageway extending therethrough;

the one or more shearable threads are adapted to engage the setting tool; and

the one or more shearable threads are adapted to deform to release the setting tool when exposed to a predetermined axial force, thereby providing a flow passage through the insert and the body.

'413 patent, at col. 13, l. 57-col. 14, l. 7 (emphasis added).

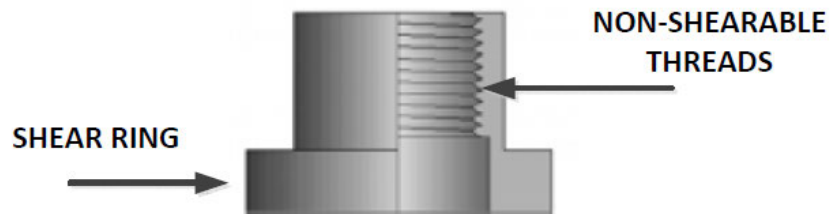
#### B. Overview of the Prior Art

The Board instituted IPR based on the following three primary references: U.S. Patent Application Publication No. 2007/0151722 to Lehr et al. ("Lehr"); U.S. Patent No. 4,437,516 to Cockrell ("Cockrell"); and U.S. Patent No. 4,595,052 to Kristiansen ("Kristiansen"). J.A. 8. In its petition for institution, McClinton had also relied on a reference known as the Alpha Oil Tools Catalog (1997), "Standard Frac Plug" ("Alpha"). J.A. 136-38. Specifically, McClinton argued that both Alpha and Lehr disclose downhole plugs that include the standard features of a typical downhole plug and all the limitations of claim 1 except for (1) shearable threads on the inside of an insert that shear in response to a predetermined axial force; and (2) non-shearable threads on the outside of the insert that screw into the inner surface of the plug body. *Compare* J.A. 98-100 (Alpha), *with* J.A. 115-18 (Lehr).

The Board declined to institute IPR based on Alpha, instead instituting IPR based on the primary reference Lehr in view of Cockrell and Kristiansen. Alpha is nonetheless relevant to this appeal because Magnum focuses its arguments on differences between Alpha and Lehr. We briefly review each of these references in turn.

### 1. Alpha

As shown in the figure below, Alpha teaches a bottom-set plug with a shear ring. The Alpha insert contains non-shearable threads on the inside of the insert, which allow the setting tool to apply a sufficient force to separate the shear ring from the insert and allow the setting tool to remove the insert through the bore of the plug. *See* J.A. 138.



Appellant Br. at 7.

2. Lehr

Lehr teaches the use of a “deformable release device” to allow release of a setting tool from a downhole plug. J.A. 184 (¶ 0003). The deformable release device **30** shown in Figure 5 of Lehr is a washer-shaped device that is held in place by plunger **80**, as shown in Figure 3B.

J.A. 178-79. The washer-shaped device of Lehr does not

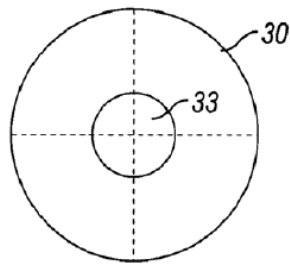


FIG. 5

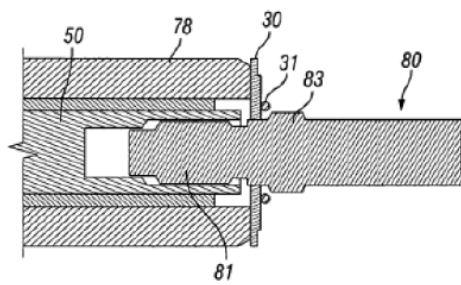


FIG. 3B

have threads.

Lehr also discloses a setting tool. Figure 1 of Lehr provides an overview picture of the deformable release device **30** and the plunger **80** in the context of the downhole plug **70** and the setting tool **10**.

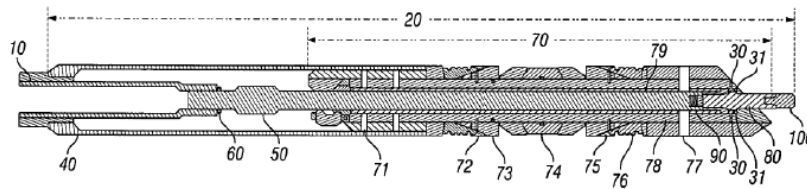
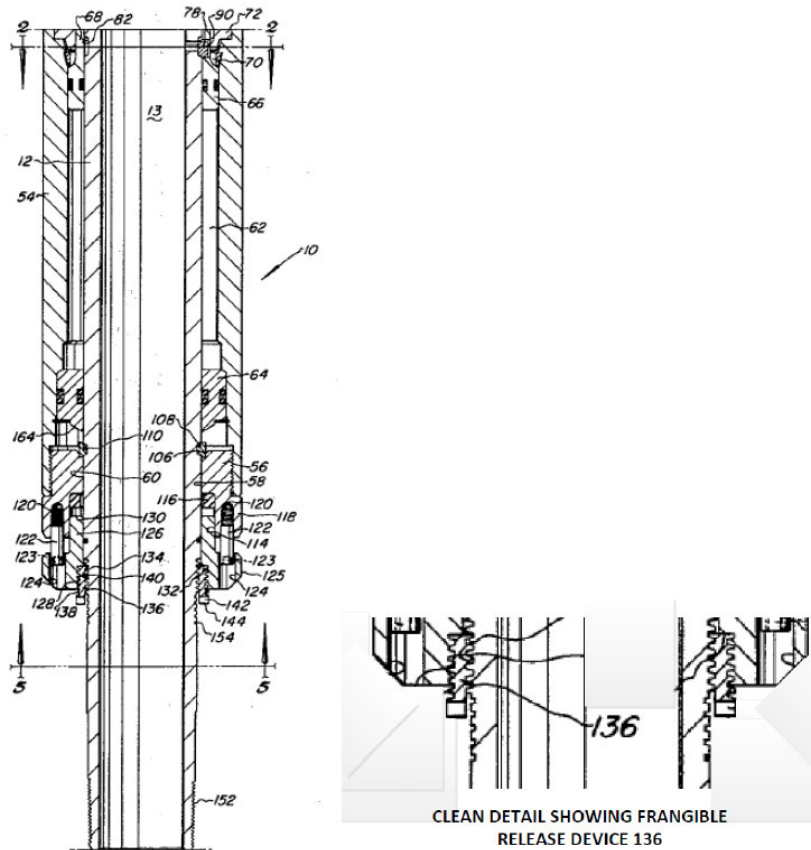


FIG. 1

J.A. 187 (¶¶ 0037-39).

### 3. Cockrell

Cockrell teaches shearable threads on a “frangible release member” that is used to release a downhole plug or other downhole tool from its working position. Cockrell ’516 patent, at Abstract (J.A. 139). Figure 1C of Cockrell, reproduced below, shows that the release member is located near the lower end of the plug and possesses both internal shearable threads 140 and external threads 138. *Id.* at col. 5, ll. 40-47 (J.A. 145). Accordingly, one way that the downhole plug or tool may be released from its working position is through the application of sufficient axial force to shear the internal threads of the release



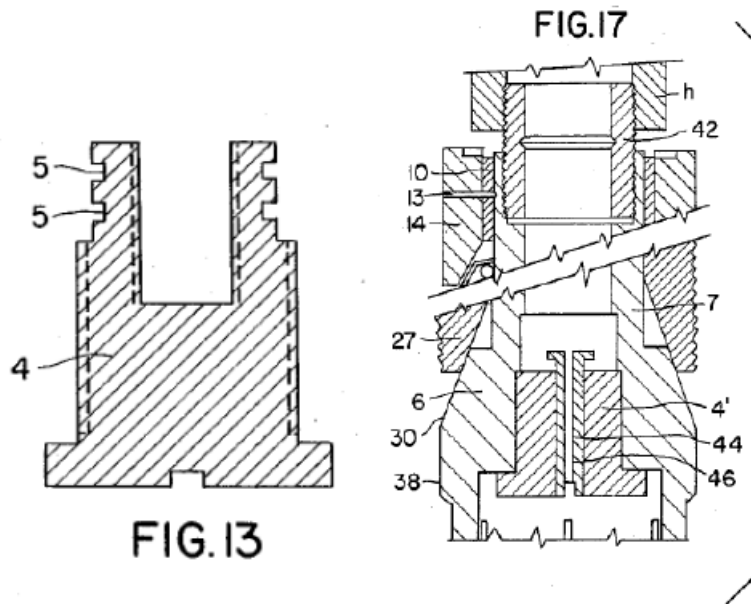
member. *Id.* at col. 5, l. 52 – col. 6, l. 68 (J.A. 145).



Unlike Lehr, Cockrell does not teach the use of a setting tool. Instead, Cockrell is hydraulically set. Cockrell '516 patent, at col. 7, ll. 3-8 (J.A. 146).

4. Kristiansen

Kristiansen teaches the use of a non-shearable threaded insert known as a “converter plug” that is used during field reconfiguration of a downhole plug. See Kristiansen '052 patent, at col. 3, ll. 58-61 (J.A. 227). The Kristiansen insert screws into the body of a plug by way of threads along its outer surface. *Id.* at col. 5, ll. 30-35 (J.A. 228). Figures 13 and 17 of Kristiansen illustrate the converter plug 4 and its position within a plug body.



Also unlike Lehr, Kristiansen does not teach the use of a setting tool. Kristiansen teaches the use of a charge to set downhole plugs. *Id.* at col. 7, ll. 50-58 (J.A. 229).

## II. PROCEDURAL BACKGROUND

McClinton filed this IPR challenging all claims of the '413 patent. In its Petition, McClinton argued that the claims would have been obvious over Alpha as a base reference, in combination with Cockrell and Kristiansen. While McClinton also noted that the claims would have been obvious over the combination of Lehr as a base reference (in view of Cockrell and Kristiansen), McClinton largely “incorporated by reference” its arguments on Lehr from its earlier arguments based on Alpha. *See, e.g.*, J.A. 118 (Petition for IPR) (incorporating by reference arguments with respect to Lehr “as discussed above with respect to Alpha,” and noting that “[t]he same analysis applies to combinations using Lehr as a base reference”).

In its Preliminary Response, Magnum argued that McClinton’s obviousness arguments based on Lehr were insufficient for failure to “specify where each element of the claim is found in” Lehr, Cockrell, and Kristiansen. J.A. 368 (quoting 37 C.F.R. § 42.104(b)(4)). Magnum also contended that McClinton’s Petition and expert declaration focused on explaining how a skilled artisan might have modified Alpha in view of Cockrell and Kristiansen, but failed to describe how a skilled artisan would modify Lehr in view of Cockrell and Kristiansen. J.A. 369-72.

Finding that McClinton had established a reasonable likelihood of success in its Petition, the Board instituted IPR of all challenged claims based on Lehr in view of Cockrell and Kristiansen, but not on the basis of Alpha. J.A. 385-412 (“Institution Decision”). After trial and the completion of briefing, the Board issued a final written decision holding all challenged claims unpatentable under 35 U.S.C. § 103. J.A. 1-37. Magnum requested rehearing, arguing that the Board had relied on a “new ground of unpatentability” regarding a skilled artisan’s motivation to combine Lehr with Cockrell and Kristiansen. *See* J.A. 34-42. Magnum also argued that there was no evidence

supporting the Board's finding that a skilled artisan would have had a reasonable expectation of success in removing Lehr's retaining pins and replacing them with Cockrell's shearable threads. J.A. 42. The Board rejected Magnum's arguments, finding that McClinton had explained adequately why a skilled artisan would have had a reasonable expectation of success and a motivation to combine the teachings of Lehr, Cockrell, and Kristiansen. Accordingly, in a decision dated October 29, 2014, the Board denied Magnum's request for rehearing. J.A. 38-47.

Subsequently, McClinton and Magnum entered into a settlement agreement, wherein "McClinton has agreed not to participate in any appeal of the final written decision in the underlying inter partes review proceeding." *In re Magnum Oil Tools Int'l, Ltd.*, Fed. Cir. No. 15-1300, Doc. 3 (filed Feb. 2, 2015). When Magnum filed the instant appeal, McClinton filed a request to withdraw from the appeal, which we granted. *Id.*, Doc. 4 (filed Feb. 5, 2015). After McClinton's withdrawal, the Director of the PTO intervened in this appeal pursuant to 35 U.S.C. § 143.

We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

### III. STANDARD OF REVIEW

Obviousness is a question of law based on underlying facts. *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000). We review the Board's legal conclusion of obviousness *de novo*, and underlying factual findings for substantial evidence. *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1280 (Fed. Cir. 2015), *aff'd*, *Cuozzo Speed Techs., LLC v. Lee*, No. 15-446, 2016 U.S. LEXIS 3927 (June 20, 2016). Substantial evidence "means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938); *see In re Morsa*, 713 F.3d 104, 109 (Fed. Cir. 2013).

## IV. DISCUSSION

As an initial matter, the PTO argues that Magnum challenges only the Board's decision to institute the IPR, which is an unreviewable decision. Intervenor Br. at 35; *Cuozzo Speed Techs., LLC v. Lee*, No. 15-446, 2016 U.S. LEXIS 3927, at \*23 (June 20, 2016) (“[W]here a patent holder merely challenges the Patent Office’s ‘determin[ation] that the information presented in the petition . . . shows that there is a reasonable likelihood’ of success ‘with respect to at least 1 of the claims challenged,’ §314(a), or where a patent holder grounds its claim in a statute closely related to that decision to institute inter partes review, § 314(d) bars judicial review.”). Magnum responds that it is not challenging the Board's decision to institute the IPR, but rather the Board's statements made regarding obviousness of the claimed invention, some of which were made in the Board's institution decision and later relied upon in the Board's final written decision. Appellant Reply Br. at 3.

Magnum is correct to state that we have jurisdiction to review determinations made during institution that are subsequently incorporated into the Board's final written decision. *See Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1315 (Fed. Cir. 2015) (“To be clear, it is the merits of the final written decision that are on appeal; we are not here called upon to review the determination by the [Board] whether to institute a CBM review, and indeed the statute expressly instructs that we may not . . .”). In *Versata*, we held that “[w]e have jurisdiction to decide the [merits of a final written decision] even though it is decided . . . initially by the [Board] at the decision to institute stage.” *Id.* at 1329. Nothing in either 35 U.S.C. § 314(d) or *Cuozzo Speed Techs.* shields aspects of a Board decision which are critical to its ultimate judgment merely because its final analysis relies on statements made when it initially considered the petition. We have jurisdiction here to review all of Magnum's

arguments regarding the basis for the Board's ultimate judgment of unpatentability.

On the merits, Magnum argues that the Board erred in cancelling the claims of the '413 patent because "neither McClinton nor the [Board] ever established a *prima facie* basis for the rejection." Appellant Br. at 12. Magnum further contends that McClinton failed to specifically argue why a skilled artisan would have been motivated to combine Lehr with Cockrell and Kristiansen. Instead, Magnum contends, McClinton attempted to improperly incorporate by reference its separate arguments concerning its assertion of obviousness based on Alpha in view of Cockrell and Kristiansen. Magnum asserts that Lehr could not be the basis for a finding of obviousness because Lehr fails to disclose key limitations recited in the '413 patent, and a skilled artisan would not have sought to combine Lehr with the other prior art references.

The PTO disagrees with Magnum's proposed burden-shifting framework. The PTO takes the view that upon institution of an IPR, the Board necessarily finds that the Petitioner has demonstrated a "reasonable likelihood of success." The PTO urges that this finding operates to shift the burden of producing evidence of nonobviousness to the patentee. Intervenor Br. at 32. Here, the PTO asserts that the Board necessarily held that McClinton met its initial burden of proving obviousness when the Board "concluded in the decision to institute that McClinton 'ha[d] demonstrated a reasonable likelihood of prevailing' on its assertion that claim 1 is unpatentable over Lehr, Cockrell, and Kristiansen." *Id.* The PTO then explains its view that "once the Board found a reasonable likelihood that McClinton would ultimately carry its burden of persuasion, the burden of production shifted to Magnum to argue or produce evidence in its patent-owner response that Lehr, Cockrell, and Kristiansen do not render claim 1 obvious." *Id.* at 33. In making this argument, the PTO implies that the Board's conclusion on

obviousness in an IPR can be based on less than a preponderance of the evidence if the patent holder does not affirmatively *disprove* the grounds upon which the IPR was initiated. *Id.* at 31-33.

Having set forth its position regarding the parties' respective burdens, the PTO asserts that the Board properly applied its described burden-shifting framework in holding the challenged patent claims obvious. *Id.* at 33. In particular, the PTO argues that Lehr discloses all of the features of the claimed invention other than the recited shearable threads. In place of the shearable threads, Lehr discloses a deformable release device. The PTO contends that substantial evidence supports the Board's finding that a skilled artisan would have been motivated to combine the deformable release device taught in Lehr with the shearable threads taught in Cockrell and Kristiansen, primarily relying on Magnum's failure to prove the contrary. *Id.* at 44.

#### A. Burden of Proof

"In an inter partes review . . . , the petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence." 35 U.S.C. § 316(e). "[T]he burden of proof is on the petitioner to prove unpatentable those issued claims that were actually challenged in the petition for review and for which the Board instituted review." *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1334 (Fed. Cir. 2016).

Because several terms regarding the burden of proof are critical to resolving the parties' dispute, we briefly define the terms here. "As an initial matter . . . there are two distinct burdens of proof: a burden of persuasion and a burden of production. The burden of persuasion 'is the ultimate burden assigned to a party who must prove something to a specified degree of certainty,' such as by a preponderance of the evidence or by clear and convincing evidence." *Dynamic Drinkware, LLC v. Nat'l Graphics*,

*Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326-27 (Fed. Cir. 2008)). A distinct burden, “[t]he burden of production may entail ‘producing additional evidence and presenting persuasive argument based on new evidence or evidence already of record.’” *Id.* (citing *Tech. Licensing Corp.*, 545 F.3d at 1327).

“In an *inter partes* review, the burden of persuasion is on the petitioner to prove ‘unpatentability by a preponderance of the evidence,’ 35 U.S.C. § 316(e), and that burden never shifts to the patentee.” *Dynamic Drinkware*, 800 F.3d at 1378. Indeed, “the Supreme Court has never imposed nor even contemplated a formal burden-shifting framework in the patent litigation context.” *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1075 (Fed. Cir. 2012) (reversing district court’s determination of obviousness because “the court imposed a burden-shifting framework in a context in which none exists”). We have noted that “a burden-shifting framework makes sense in the prosecution context,” where “[t]he prima facie case furnishes a ‘procedural tool of patent examination, allocating the burdens of going forward as between examiner and applicant.’” *Id.* at 1080 n. 7 (citing *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992)). As the PTO concedes, however, that burden-shifting framework does not apply in the adjudicatory context of an IPR. Intervenor Br. at 30 (citing *In re Jung*, 637 F.3d 1356, 1362 (Fed. Cir. 2011) (holding the *prima facie* case during patent examination “is merely a procedural device that enables an appropriate shift of the burden of production” from the PTO to the patent applicant)).

Next, we resolve the parties’ arguments about the related but distinct burden of production. The PTO incorrectly contends that “the burden of production—or the burden of going forward with evidence, shifts between the petitioner and the patent owner,” as soon as the Board

institutes an IPR. Intervenor Br. at 31 (discussing *Dynamic Drinkware*, 800 F.3d at 1379). In *Dynamic Drinkware*, we noted that, in the context of establishing conception and reduction to practice for the purposes of establishing a priority date, the burden of production can shift from the patent challenger to the patentee. 800 F.3d at 1379. This is because a patent challenger has the burden of producing evidence to support a conclusion of unpatentability under § 102 or § 103, but a patentee bears the burden of establishing that its claimed invention is entitled to an earlier priority date than an asserted prior art reference. *See id.* (discussing *Tech. Licensing*, 545 F.3d at 1327). In such a case, the shifting of the burden of production is warranted because the patentee affirmatively seeks to establish a proposition not relied on by the patent challenger and not a necessary predicate for the unpatentability claim asserted—effectively an affirmative defense. In the context of the present case, however, the notion of burden-shifting is inapposite because the patentee’s position is that the patent challenger failed to meet *its* burden of proving obviousness. Applying a burden-shifting framework here would introduce unnecessary confusion because the ultimate burden of persuasion of obviousness must remain on the patent challenger and “a fact finder must consider *all* evidence of obviousness and nonobviousness before reaching a determination.” *In re Cyclobenzaprine*, 676 F.3d at 1077; *see also Nike Inc.*, 812 F.3d 1335 (“Importantly, we have repeatedly emphasized that an obviousness inquiry requires examination of all four *Graham* factors and that an obviousness determination can be made only after consideration of each factor.”) (citing, *inter alia*, *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1360 (Fed. Cir. 2012))).

Where, as here, the only question presented is whether due consideration of the four *Graham* factors renders a claim or claims obvious, no burden shifts from the patent



challenger to the patentee. This is especially true where the only issues to be considered are what the prior art discloses, whether there would have been a motivation to combine the prior art, and whether that combination would render the patented claims obvious. We thus disagree with the PTO's position that the burden of production shifts to the patentee upon the Board's conclusion in an institution decision that "there is a reasonable likelihood that the petitioner would prevail." See *Intervenor Br.* at 32 (citing 35 U.S.C. § 314(a)). The PTO's proposed burden shifting framework is also directly at odds with our precedent holding that the decision to institute and the final written decision are "two very different analyses," and each applies a "qualitatively different standard." *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016). As we explained in *TriVascular*:

[T]he Board is not bound by any findings made in its Institution Decision. At that point, the Board is considering the matter preliminarily without the benefit of a full record. The Board is free to change its view of the merits after further development of the record, and should do so if convinced its initial inclinations were wrong.

*Id.*; see also *Cuozzo Speed Techs.*, 2016 U.S. LEXIS 3927, at \*18-19 ("The Patent Office's decision to initiate *inter partes* review is 'preliminary,' not 'final.'") (quoting 5 U.S.C. § 704)). Furthermore, because of the "significant difference" between the standards of proof at institution and trial during an IPR, see *TriVascular*, 812 F.3d at 1068, it is inappropriate to shift the burden to the patentee after institution to prove that the patent is patentable.<sup>1</sup>

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<sup>1</sup> We note, however, that while the institution of an IPR does not by itself translate to a conclusion of unpatentability and the patent owner is not required to use

Instead, the petitioner continues to bear the burden of proving unpatentability after institution, and must do so by a preponderance of the evidence at trial. *See* 35 U.S.C. § 316(e). And, the Board has an obligation to assess the question anew after trial based on the totality of the record.

### B. Obviousness

Magnum argues that the Board improperly shifted the burden to Magnum to prove nonobviousness. Magnum contends that the Board never required McClinton to explain why a skilled artisan would have sought to combine the asserted prior art references. Magnum points out that McClinton attempted to establish obviousness in its petition by arguing from Alpha as the primary base reference. The Board did not initiate the IPR based on Alpha, however. But, contends Magnum, the Board in its final written decision improperly incorporated by reference McClinton's arguments based on Alpha into the Board's conclusion that the claimed invention would have been obvious in light of the primary reference Lehr.

The PTO argues that the differences between Alpha and Lehr are irrelevant to this appeal, and that, regardless, "the proper time for Magnum to challenge the Board's actions would have been in a Request for Rehearing of the Institution Decision under 37 C.F.R. § 42.71(c)." Intervenor Br. at 36. The PTO further contends that "it is not error for the Board to rely on an unpatentability

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its opportunity under the regulations to file a patent owner response, as in district court validity challenges, the patent owner "would be well advised to introduce evidence" on the asserted challenge. *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1360 (Fed. Cir. 2007) (quoting *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1570 (Fed. Cir. 1986)).

theory that could have been included in a properly-drafted petition,” but was not. Intervenor Br. at 34.

We briefly dispose of the PTO’s argument that Magnum was required to raise its concerns with the Board in its request for rehearing prior to filing the instant appeal. *See* Intervenor Br. at 36. “A party to an inter partes review . . . who is dissatisfied with the final written decision of the Patent Trial and Appeal Board under section 318(a) . . . may appeal the Board’s decision only to the United States Court of Appeals for the Federal Circuit.” 35 U.S.C. § 141(c). Nowhere does the statute granting parties the right to appeal a final written decision in an IPR require that the party first file a request for rehearing before the Board, especially a rehearing of the initial institution decision. Instead, a party who is dissatisfied with the final written decision of the Board can elect to directly appeal that decision. Magnum may advance on appeal its argument concerning motivation to combine, since it raised this argument before the Board in the IPR. Thus, we reject the PTO’s contention that Magnum was required to raise the present challenge to the Board’s actions in a request for rehearing of the institution decision before it could challenge a final Board opinion relying on the same rationale given in the institution decision. As a practical matter, why would Magnum have had an incentive to seek reconsideration of an Institution Decision relying solely on *Lehr* when it believed *McClinton* ultimately would be unable to sustain its burden of proof based on that reference? Fleshing that out is what an IPR trial is for.

We now address Magnum’s argument that the Board’s improper shifting of the burden of proof resulted in reversible error. Appellant Br. at 22-24. Magnum cites to several examples in the Board’s decision where the Board required Magnum to rebut Petitioner *McClinton*’s assertions that a skilled artisan would have been motivated to combine the prior art references, without first requiring

McClinton to provide evidence to support its assertions. We agree with Magnum that the Board improperly shifted the burden to it, as the patentee, to prove nonobviousness. Because McClinton failed to separately meet its burden of establishing obviousness in view of Lehr, Cockrell, and Kristiansen, we reverse.

The final written decision is replete with examples where, rather than require McClinton to prove its assertion of obviousness, the Board improperly shifted the burden to Magnum to disprove obviousness. One example of the Board's error is found in the following passage of the final written decision:

Magnum does not explain adequately why the same analysis [that McClinton provided for Alpha] is not applicable to Lehr. For instance, Magnum does not explain why the simple substitute of shearable threads, as taught by Cockrell (Ex. 1005, 5:43-47, 54-60), for retaining pins **31** that secure the deformable release device **30**, as taught by Lehr (Ex. 1007 ¶ 0044,) would not yield a predictable result. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007). Moreover, Magnum does not provide sufficient or credible evidence that such a substitution is beyond the level of an ordinarily skilled artisan. *See Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

J.A. 23. As is evident from the quoted passage, the Board expected Magnum to explain, and faulted Magnum for allegedly failing to explain, why an obviousness argument based on a first set of prior art references (Alpha, Cockrell, and Kristiansen) that the Board did not adopt would not be applicable to a second set of prior art references (Lehr, Cockrell, and Kristiansen). Neither the Board nor the petitioner explained why borrowing the rationale for combining the first set of references equally

applies to the second set of references, which was particularly necessary here where the two primary references plainly operate in different manners. This constituted an improper shifting of the burden to Magnum, the patentee, to prove that the claimed invention would *not* have been obvious.

Another example of the Board's improper shifting of the burden to Magnum is evident from the following passage in the Board's Institution Decision:

Here, the arguments presented by Magnum fail to account for McClinton's position that the combined teachings of Lehr, Cockrell, and Kristiansen teach the claimed "insert" and the corresponding aspects of being "screwed into an inner surface of the body," "shearable threads disposed on the inner surface," "passageway extending therethrough," and "the one or more shearable threads are adapted to deform to release the setting tool when exposed to a predetermined axial force, thereby providing a flow passage through the insert and the body." Consequently, we are not persuaded by Magnum's argument because it attacks Lehr, Cockrell, and Kristiansen individually and, therefore, does not account for what the combination of those references conveys to an ordinarily skilled artisan.

JA 405-06. Here, the Board improperly assumed, without deciding, that "McClinton's position that the combined teachings of Lehr, Cockrell, and Kristiansen teach the claimed 'insert'" is correct. *See id.* The Board then required the patentee, Magnum, to rebut the position of the petitioner, McClinton, and to prove nonobviousness of the claimed invention.

We are not suggesting that any reference to "rebuttal" evidence by the Board would constitute reversible error. It is not the language employed with which we are con-

cerned, it is the placement of the burden of persuasion that matters. Where, as here, it is clear that the Board did not require the petitioner to support its claim of obviousness by a preponderance of the evidence, we must reverse.

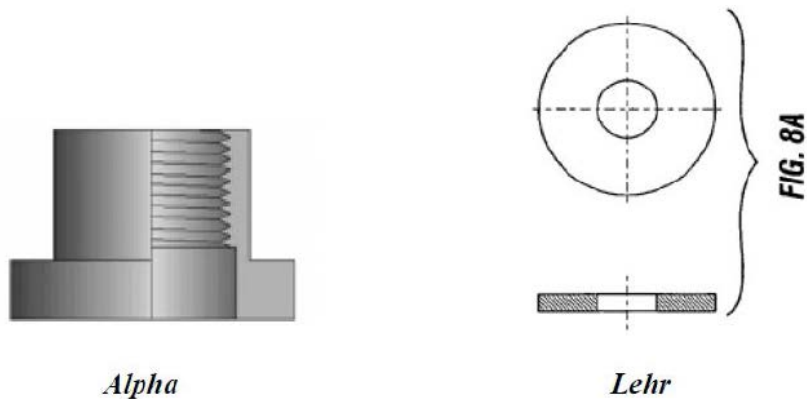
The record reveals that McClinton failed to articulate a motivation to combine the specific teachings of Lehr, Cockrell, and Kristiansen to achieve the claimed invention. Indeed, McClinton merely attempted to incorporate its arguments based on Alpha to its obviousness analysis based on Lehr, without presenting particularized arguments explaining why those arguments from Alpha would be cross-applicable to the Lehr reference. In arguing that a skilled artisan would have been motivated to combine Lehr with the other prior art references, McClinton reasoned as follows:

Lehr does not have two of the elements of claim 1: (1) the requirement in elements [1.6, 1.8, and 1.9] of threads that shear in response to a predetermined axial force; and (2) the requirement of [1.5] of [sic] threads on the outside of the insert that screw into the inner surface of the plug body. However, *as discussed above with respect to Alpha*, these elements were known—indeed, well known—in the art, particularly as shown by the Cockrell reference. The explanation above for Challenge No. 1 explains how each of these missing elements is set forth in Cockrell and Kristiansen. Challenge No. 1 also explains why it was obvious to a person of skill to combine Cockrell and Kristiansen with other downhole plug prior art. *The same analysis applies to combinations using Lehr as a base reference*, with Cockrell and Kristiansen supplying the elements of claim 1 that are missing from Lehr, and the combination of these references rendering claim 1 obvious.

J.A. 117-18 (Petition) (emphases added).

But Alpha and Lehr are different, as the Board's institution on the latter, but not the former, evidences. McClinton failed to provide any analysis of how or why the deformable release device **30** of Lehr could be combined with Cockrell or Kristiansen in the same manner as the Alpha insert, nor did McClinton articulate a different rationale for why a skilled artisan would be motivated to combine Lehr with Cockrell or Kristiansen. Instead, McClinton attempted to provide the motivation to combine merely by noting surface similarities between the Alpha and Lehr references. See J.A. 491-92 (Petitioner's Reply Brief) (noting that, *inter alia*, Alpha and Lehr both disclose frac plugs and downhole tools). These surface similarities do not control the obviousness analysis because they are not directed to the relevant features of the claimed invention, namely an insert containing: (1) shearable threads on the inside of the insert that allow for release of a setting tool; and (2) nonshearable threads on the outside of the insert that allow for attachment of the insert to a plug body.

The Board also failed to address Magnum's argument that "the insert disclosed by *Alpha* and the deformable release member disclosed by *Lehr* are entirely different in structure and purpose." J.A. 435 (Patent Owner's Response Brief) (emphasis in original). These structural differences are evident from the figures below, which show the shear ring insert of *Alpha* on the left and the deformable release member of *Lehr* on the right.



*Id.*

Notwithstanding the Board's failure to explain why a skilled artisan would have been motivated to swap out the deformable release device **30** of *Lehr*, Magnum also correctly notes that McClinton failed to articulate why a skilled artisan would have sought to combine *Lehr* with *Cockrell* and *Kristiansen*. *Cockrell* and *Kristiansen* do not disclose setting tools. In contrast to *Lehr*, which discloses a setting tool, *Cockrell* is hydraulically set. *Cockrell* '516 patent, at col. 7, ll. 3-8. And *Kristiansen* is set with a charge. *Kristiansen* '052 patent, at col. 7, ll. 50-58. McClinton did not address these specific differences in how the prior art references are set, despite the fact that the claimed inventions of the '413 patent are each directed to an insert allowing for the release of a setting tool. See, e.g., '413 patent, at col. 13, l. 57-col. 14, l. 7. In light of McClinton's failure to explain why a skilled arti-



san would have sought to combine the prior art references to achieve the claimed invention, the Board had no basis for its conclusion that McClinton had met its burden of proving by a preponderance of the evidence that the claimed invention would have been obvious. *See KSR*, 550 U.S. at 418.

To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness. *Id.* In its petition, McClinton merely argued in conclusory fashion that “[t]he same analysis” for Alpha also applied to Lehr, without further explanation. JA 117-18. The Board had no basis apart from this and similar conclusory statements to find a motivation to combine Lehr with the other prior art references, Cockrell and Kristiansen. Because such conclusory statements cannot satisfy the petitioner’s burden of demonstrating obviousness, the Board did not have sufficient evidence on which to base its legal conclusion of obviousness.

Finally, we address the PTO’s assertion that the Board did not err in making an obviousness argument on behalf of McClinton based on the primary reference Lehr because this argument “could have been included in a properly-drafted petition.” Intervenor Br. at 34 (citing *Cuozzo*, 793 F.3d at 1275). It is the petitioner that bears the burden of proof in IPRs, however. *See* 35 U.S.C. § 316(e) (“In an inter partes review instituted under this chapter, the *petitioner* shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence.”) (emphasis added). It is true that the entire IPR process is one designed as an “efficient system for challenging patents that should not have issued.” *Cuozzo Speed Techs.*, 2016 U.S. LEXIS 3927, at \*29 (quoting H.R. Rep. No. 112-98, pt. 1, at 39-40 (2011)). But it is still a system that is predicated on a petition followed by a trial in which the petitioner bears the burden of proof. Given

that framework, we find no support for the PTO's position that the Board is free to adopt arguments on behalf of petitioners that could have been, but were not, raised by the petitioner during an IPR. Instead, the Board must base its decision on arguments that were advanced by a party, and to which the opposing party was given a chance to respond. *SAS Inst., Inc. v. ComplementSoft, LLC*, No. 2015-1347, 2016 U.S. App. LEXIS 10508, at \*20-21 (Fed. Cir. June 10, 2016) ("An agency may not change theories in midstream without giving respondents reasonable notice of the change and the opportunity to present argument under the new theory.") (interpreting 5 U.S.C. § 554(b)(3)) (quoting *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1080 (Fed. Cir. 2015) (internal quotations omitted)). Here, "[i]t was [petitioner's] burden to demonstrate both 'that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.'" *Intelligent Bio-Sys., Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1367-68 (Fed. Cir. 2016) (citing, *inter alia*, *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1360 (Fed. Cir. 2012)). Thus, while the PTO has broad authority to establish procedures for revisiting earlier-granted patents in IPRs, that authority is not so broad that it allows the PTO to raise, address, and decide unpatentability theories never presented by the petitioner and not supported by record evidence.

## V. CONCLUSION

As explained above, the Board erred in shifting the burden of proof on obviousness in this IPR from the petitioner, McClinton, to the patent owner, Magnum. The Board further failed to articulate a sufficient rationale for why a skilled artisan would have sought to combine the asserted prior art to achieve the claimed invention. The Board's decision was premised on a legally incorrect

standard for assessing obviousness, and the Board's factual findings regarding the alleged motivation to combine lacked substantial evidence. Accordingly, we reverse the Board's decision.

**REVERSED**