

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Meishan CRRC Fastening System Co., Ltd.

Petitioner,

v.

Howmet Aerospace Inc.

Patent Owner

Case IPR2026-00268

Patent No. 11,885,358

PATENT OWNER'S PRELIMINARY RESPONSE

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LIST OF EXHIBITS

Exhibit	Description
2001	CRRC Madeinmeishan Website
2002	CRRC Corporation – World Benchmarking Alliance
2003	CRRC 2024 Annual Report
2004	Aug. 13, 2025 Response Letter re Howmet (Confidential)
2005	Delaware Litigation – Exhibit C-1
2006	MEISHANFASTENING_000001 to MEISHANFASTENING_000060 (Confidential)
2007	SASAC “About Us” webpage
2008	Wikipedia for SASAC

I. INTRODUCTION

As explained in Howmet’s Request for Discretionary Denial (Paper 9), the Director should deny institution, as Petitioner is barred from bringing this proceeding. Further, the validity of U.S. Patent No. 11,885,358 (“’358 Patent”) is more appropriately adjudicated in the active District Court proceeding. Lastly, as shown in this preliminary response, Petitioner’s challenge is non-meritorious confirming that denial on the merits is also appropriate.

First, the Chinese government is an RPI in this proceeding. As the Director held in *Tianma v. LG Display*, the Supreme Court’s decision in *Return Mail, Inc. v. United States Postal Service*, 587 U.S. 618 (2019) (“*Return Mail*”) applies to a foreign government, and “bars a petition when a foreign government is an RPI of a petitioner.” *Tianma v. LG Display*, IPR2025-01579, Paper 12, 5 (“*Tianma*”). As established in Howmet’s Request for Discretionary Denial (Paper 9), Meishan failed to identify all RPIs, including the Chinese government, for the instant IPR. Accordingly, the Petition is barred for failure to comply with 35 U.S.C. § 311(a) (must be “a person”) and § 312(a)(2) (must name all real parties in interest).

Second, the validity of the ’358 Patent is being adjudicated in a District Court matter that has been pending since October 31, 2025. *See Howmet Aerospace Inc., v. Stanley Engineered Fastening, et al.*, Case No. 1-25-cv-01335 (D. Del.) (hereinafter “*Delaware Case*”). Invalidity contentions from the Defendant in the

Delaware Case are due on July 24, 2026, and any alleged invalidity issues regarding the '358 Patent can be fully adjudicated in the District Court.

Third, the Office has already discretionarily denied institution in a related case (IPR2025-01581, “the Prior IPR”),¹ and the instant Petition essentially recycles the same prior art that was before the Office in that case. For instance, Petitioner presents four grounds applying U.S. Patent Publication 2018/0111184A1 (“Corbett 2018”) as the primary reference, yet Corbett 2018 was shown in the prior IPR to be substantially similar to Kleinman, a reference before the Office during the prosecution of the '358 Patent. Accordingly, the instant IPR represents an abusive, harassing, and repetitive filing tactic that should be denied.

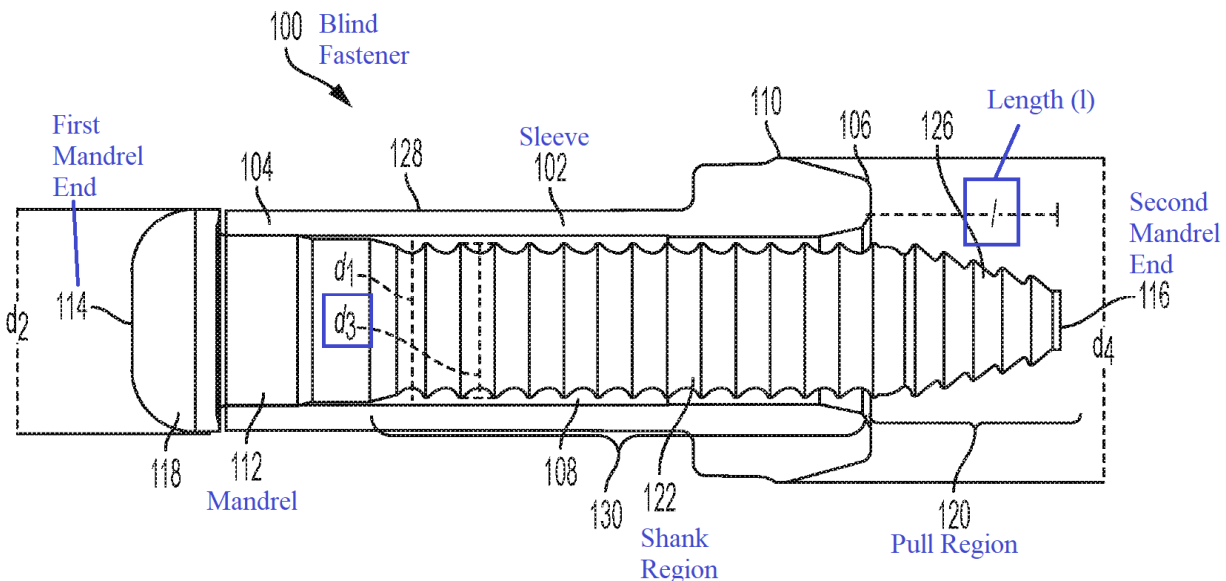
Fourth, as established below, the merits of the grounds provided in the instant Petition do not establish a reasonable likelihood of success in accordance with 35 U.S.C. §314, as the cited disclosures fail to anticipate or obviate the challenged claims. Four of the five grounds rely upon Corbett 2018 as the primary reference, and Corbett 2018 is cumulative of references that were overcome during prosecution. Accordingly, as explained further below, the petition should be denied institution.

¹ Petitioner filed the instant challenge a mere two days after the Office discretionarily denied IPR2025-01581.

II. BACKGROUND

A. The '358 Patent

The '358 Patent describes and claims a **blind fastener** having a mandrel and sleeve. As illustrated in FIG. 1 (below), the blind fastener 100 includes a sleeve 102 and a mandrel 112 having a first mandrel end 114 and a second mandrel end 116. (Ex-1001 at 3:58-4:16.) The second mandrel end 116 can comprise a pull region 120 configured to be engaged by an installation tool, and the pull region 120 can comprise an axial length, l , that is no greater than 4 times a diameter, d_3 , of the shank region 122. (*Id.* at 4:27-39.)



(*Id.* at FIG. 1.)² The design of the blind fastener enables the “use of a smaller installation tool for installation since the force required to install the blind fastener

² Emphasis and annotations added herein unless otherwise noted.

may be less than a force that can fracture the mandrel” while also allowing “the sleeve wall thickness [to] be reduced by, for example, 10% or 15%, which can save material cost.” (*Id.* at 7:28-37.)

To install the fastener blindly (e.g., without being able to access one side of an assembly), and as illustrated in FIG. 2A (below), the fastener 100 may be “installed into a bore 234 in a structure 232” such as a structure having “a first layer 242 and a second layer 244,” wherein “[u]pon installation into the bore 234, the blind fastener 100 can secure the first layer 242 and the second layer 244 together.” (*Id.* at 5:51-52, 6:3-6.)

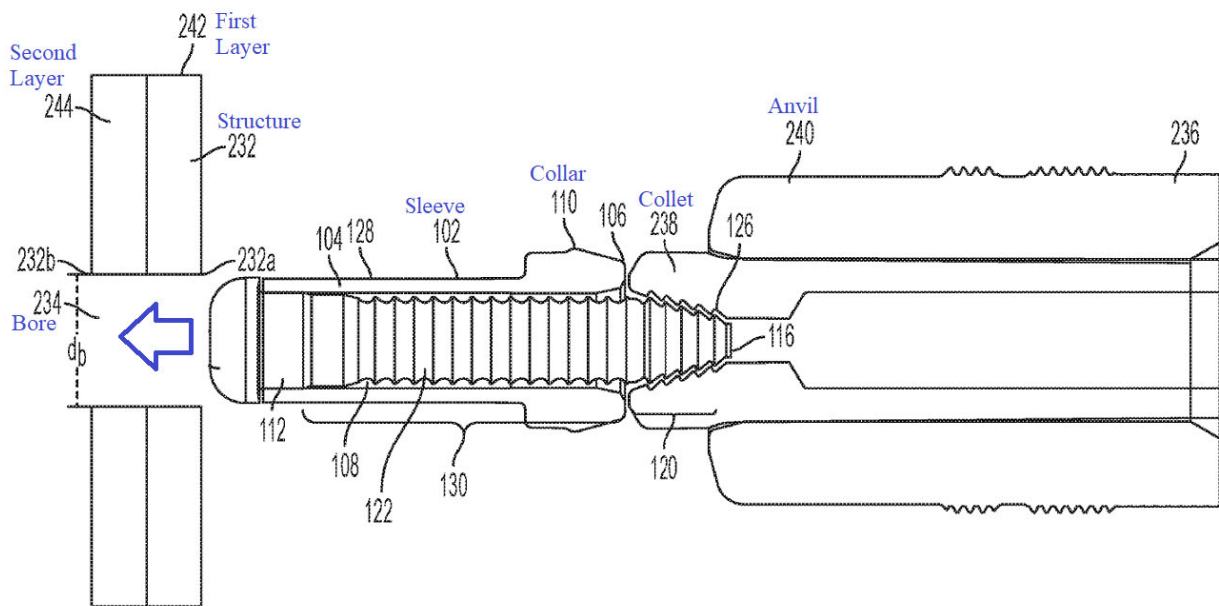


FIG. 2A

As shown in FIG. 2B (below), once the first mandrel end 114 has passed into and through the bore 234, the collar 110 of the sleeve 102 can be in forcible contact

with the structure 232 at an entrance side 232a of the structure 232. (*Id.* at 6:22-28.)

Next, “a collet 238 of the installation tool 236 can engage the pull region 120 of the blind fastener 100” after which “the collet 238 can apply a force to the pull region 120 of the mandrel 112.” (*Id.* at 6:29-36.) “Upon the collet 238 reaching a predetermined retraction distance into the installation tool, the anvil 240 can forcibly contact the second sleeve end 106.” (*Id.* at 6:41-43.)

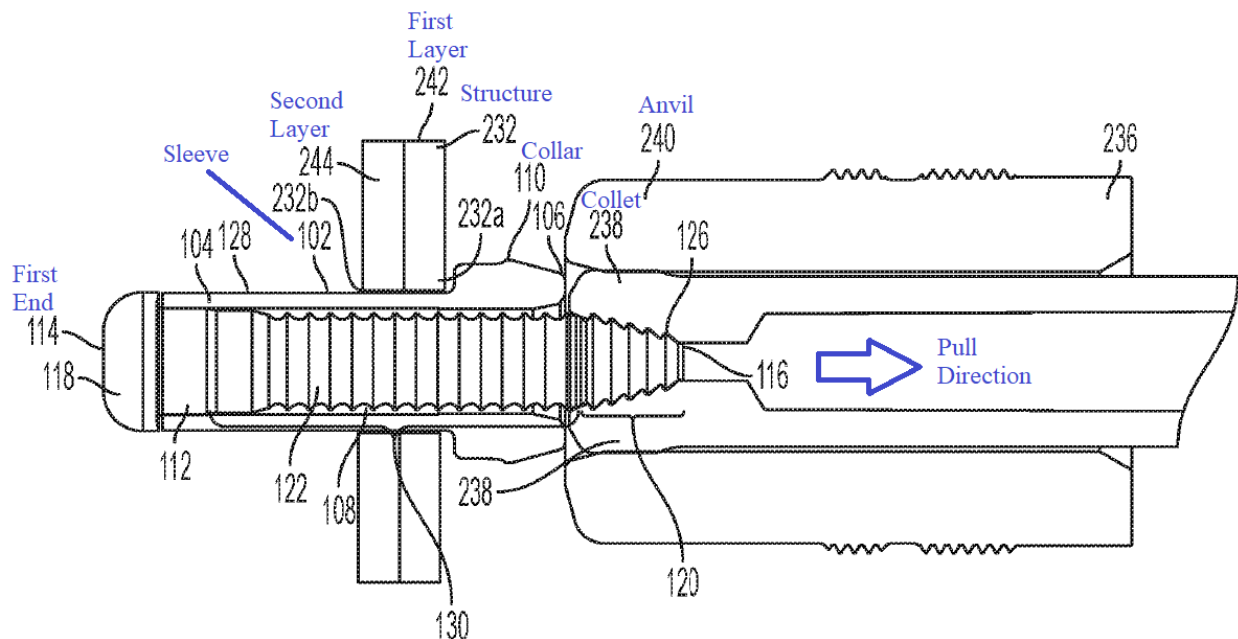


FIG. 2B

(*Id.* at FIG. 2B.)

As “illustrated in FIG. 2C [below], the first sleeve end 104 and the elongate portion 128 can be deformed on an exit side 232b of the structure 232 responsive to forcible contact from mandrel 112” and “the second sleeve end 106 can be swaged

onto the shank region 122 on an oppositely disposed entrance side 232a of the structure 232 responsive to forcible contact from the anvil 240,” such that “the first layer 242 and second layer 244 of the structure 232 are secured together.” (*Id.* at 6:62-7:9.)

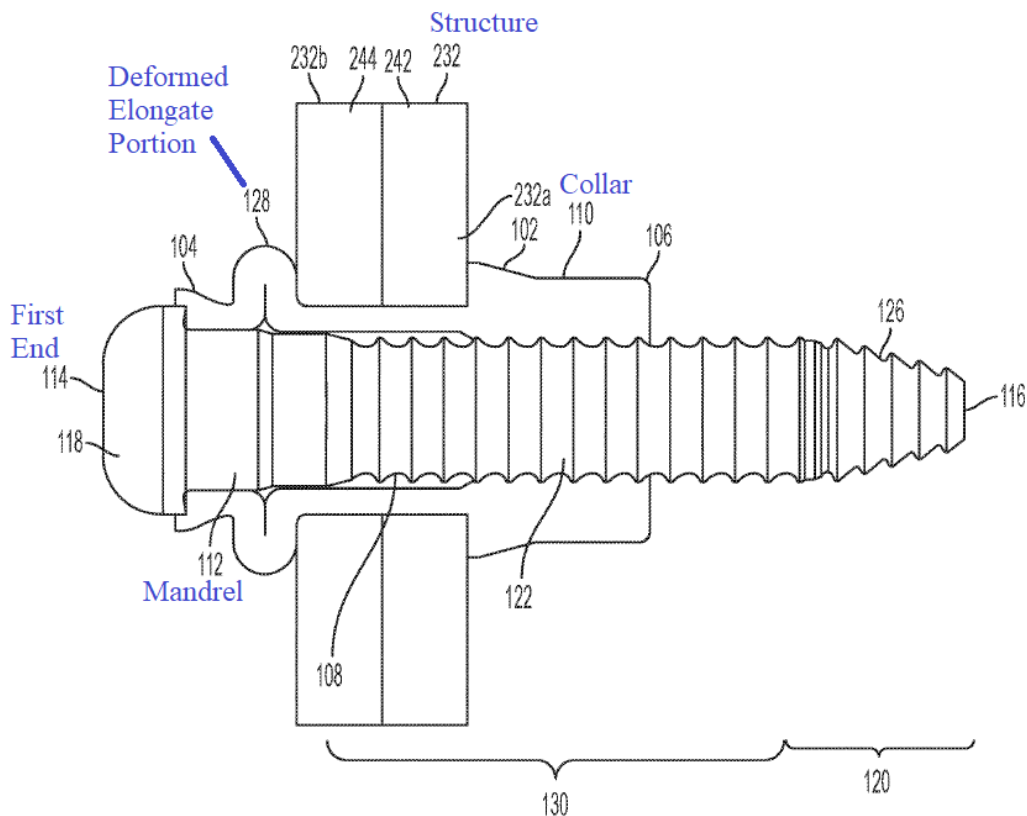


FIG. 2C

(*Id.* at FIG. 2C.) Thus, the blind fastener of the '358 Patent facilitates securing an assembly and without the need to access both sides of the assembly.

B. The Prior IPR

The '358 Patent was already subject to a prior inter partes review—IPR2025-01581—filed by Stanley Black & Decker, Inc. (“SBD”). *See Stanley Black &*

Decker, Inc. v. Howmet, IPR2025-01581, Paper 1. The Prior IPR was discretionarily denied by the Director on February 18, 2026. *Id.*, Paper 13. Petitioner filed the instant challenge on February 20, 2026, a mere two days after the Office discretionarily denied the Prior IPR. Here, Petitioner presents prior art and arguments substantially similar to those already presented in the Prior IPR. These serial and repetitive challenges to the '358 Patent are intended to harass the Patent Owner.

C. Parallel District Court Litigation

The '358 Patent is currently the subject of co-pending litigation between the parties stylized *Howmet Aerospace Inc., v. Stanley Engineered Fastening, LLC et al.*, Case No. 1-25-cv-01335 (D. Del.). The District Court denied defendants' motion to dismiss under Rule 12(b)(6), and the Litigation has entered the discovery phase. Stanley Engineered Fastening, LLC ("SEF") (a subsidiary of SBD) filed its answer to the complaint on May 5, 2026, and SEF filed an amended answer on July 6, 2026. Howmet served jurisdictional discovery requests on the defendants on April 21, 2026, and additional discovery requests were served by both Howmet and SEF on May 22, 2026. Howmet and SEF agreed to a stipulated protective order for the Litigation on May 29, 2026 and are presently negotiating an ESI Order for the Litigation. SEF produced its Core Technical Documents on May 15, 2026, Howmet served its initial infringement contentions on June 18, 2026, and

SEF's initial invalidity contentions are due on July 24, 2026. Fact discovery closes on March 31, 2027, the deadline for dispositive motions is August 18, 2027, and trial is scheduled to start on April 3, 2028. *See Delaware Case*, Dkt. No. 34, Scheduling Order.

D. POSITA Level

Patent Owner takes no position on Petitioner's proposed POSITA definition as Petitioner's arguments are defective under any reasonable POSITA definition.

III. GROUND 1: CORBETT 2018 FAILS TO DISCLOSE THE CLAIM LIMITATIONS

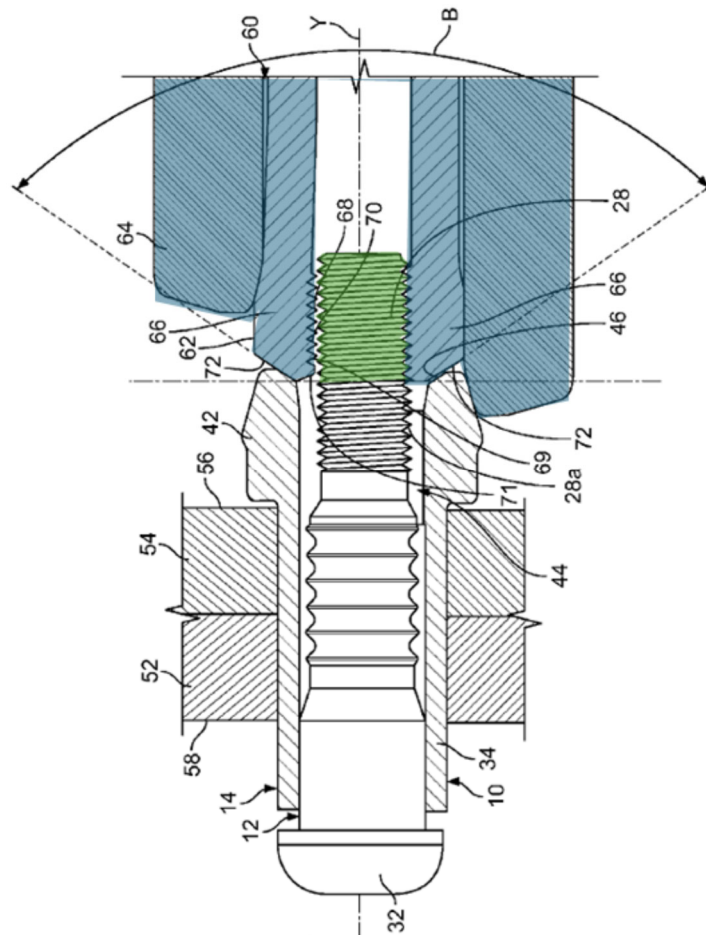
Petitioner's Ground 1 asserts challenged claims 1-3, 5-17, and 19-20 of the '358 Patent are anticipated by Corbett 2018. Pet., 23-42. As shown below, Petitioner's challenge is fatally defective and should be rejected.

Corbett 2018 was extensively relied upon in the Prior IPR, which was appropriately denied institution, but the Prior IPR Petition only relied upon Corbett 2018 in combination with other references for obviousness challenges. *See First IPR*, Paper 1, 15. The Prior IPR Petition combined Corbett 2018 with secondary references as allegedly teaching claim 1(f), "wherein the pull region comprises an axial length no greater than 4 times a diameter of the shank region." *Id.*, 26-31. The Prior IPR did not rely upon Corbett 2018 for an anticipation challenge, because

Corbett 2018 fails to disclose each limitation recited in the claims, including claim 1(f).

As to claim 1(f), Petitioner alleges that the “axial length of ‘pull portion 28’ is less than twice the major diameter of the mandrel (Corbett 2018’s ‘grooved portion’) or even the narrowest diameter of that region.” Pet., 29. Tellingly, Petitioner does not provide any citations to Corbett 2018 for this teaching and only cites to its annotations of Fig. 1 of Corbett 2018 and testimony from its paid expert, Dr. Klopp. *See* Pet., 38 (citing Ex. 1004, ¶¶79-87). Dr. Klopp provides no citations to disclosures in Corbett 2018’s specification to support these statements and merely offers a conclusory opinion that “[e]ven if [Corbett 2018’s] figures should not be understood as being to accurate scale, here, nothing would suggest to a POSITA that the aspect ratios in Corbett 2018 could not be the ratios depicted nor that the ratios would somehow be undesirable.” Ex. 1004, ¶83. Significantly, Petitioner concedes that **“Petitioner does not rely on Corbett 2018’s drawings for mathematical precision.”** Pet., 30. As Petitioner fails to establish that Corbett 2018’s drawings are drawn to scale, Corbett 2018’s drawings cannot be relied upon by Petitioner for dimensional teachings. *See Hockerson-Halberstadt, Inc. v. Avia Grp. Int’l, Inc.*, 222 F.3d 951, 956 (Fed. Cir. 2000) (“patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue.”)

Petitioner's only support for its arguments that claim 1(f) would have been anticipated by Corbett 2018 are its own arbitrary annotations to Figure 1 of Corbett 2018, which are not supported by Corbett 2018's Figure 1 and are not supported by any disclosure in the specification of Corbett 2018. For example, Petitioner provides the following annotation of Figure 1 of Corbett 2018:



Pet., 30 (green annotations by Petitioner are the alleged “pull region”). Petitioner and its expert Dr. Klopp fail to provide any explanation or support from Corbett 2018 for how Petitioner arbitrarily allocated the alleged “shank region” and

the alleged “pull region” (green annotations) of Corbett 2018’s bolt 12. Petitioner merely picks an arbitrary subsection of Corbett 2018’s “pull portion 28” to be the alleged “pull region.” This is directly contradictory, however, to the disclosure in Corbett 2018 that provides that **“the pull portion 28 includes a plurality of pull grooves 28 a.”** Corbett 2018, ¶9. Accordingly, Corbett 2018’s disclosure describes that the pull portion 28 is the entire length of the bolt 12 that includes pull grooves 28 a. Yet, Petitioner alleges, contrary to Corbett 2018’s express disclosure, that only a portion of the pull grooves 28 a constitute the “pull region.” *See* Pet., 30.

Unlike the dimensionless figures of Corbett 2018, the figures of the ‘358 Patent expressly provide labeled dimensions of its blind fastener. More particularly, the figures of the ‘358 Patent expressly define the area that corresponds to the claimed “pull region,” referenced in the ‘358 Patent specification as “pull region 120.” Ex. 1001, 4:27-39. As an example, Fig. 1 of the ‘358 Patent illustrates “pull region 120”:

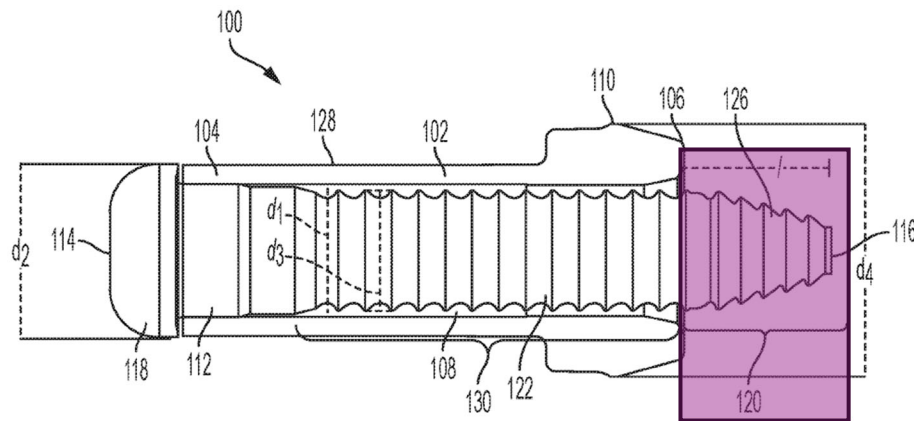


FIG. 1

Ex. 1001, Fig. 1 (annotated). As shown in Fig. 1 of the ‘358 Patent above, the ‘358 patent expressly identifies the portion of the “second mandrel end 116” that constitutes the “pull region 120.” *Id.* Additionally, Fig. 1 of the ‘358 Patent above expressly illustrates the diameter, d_3 , of the shank region 122 and the axial length, l , of the pull region. Furthermore, the ‘358 Patent specification states that “[t]he pull region 120 can comprise an axial length, l , that is not greater than 4 times a diameter, d_3 , of the shank region 122.” Ex. 1001, 4:30-32.

Unlike the specific teachings of the ‘358 Patent, Petitioner fails to provide any teachings from Corbett 2018 providing a dimension, ratio, measurement, or design instruction that teaches claim 1(f), “wherein the pull region comprises an axial length no greater than 4 times a diameter of the shank region.” Instead, Petitioner’s challenge depends upon an after-the-fact speculative reconstruction of a specific relationship from drawings that Corbett 2018 itself does not disclose. Petitioner

merely offers the conclusory allegation that the “axial length of ‘pull portion 28’ is less than twice the major diameter of the mandrel (Corbett 2018’s ‘grooved portion’) or even the narrowest diameter of that region.” Pet., 29. This unsupported allegation regarding the disclosures of Corbett 2018 fails to meet the standard for an anticipation challenge.

Accordingly, in view of the above, Petitioner’s Ground 1 fails to establish a reasonable likelihood of success.

IV. GROUND 2: PETITIONER FAILS TO ESTABLISH OBVIOUSNESS BASED ON CORBETT 2018 ALONE

Petitioner’s Ground 2 asserts an alternative to Ground 1, alleging that claims 1-3, 5-17, and 19-20 of the ’358 Patent are obvious over Corbett 2018 alone. Pet., 23-42. As shown below, Petitioner’s challenge is fatally defective and should be rejected.

To institute an *inter partes* review, the petitioner must show a reasonable likelihood that at least one challenged claim is unpatentable. 35 U.S.C. §314. Thus, when a petitioner presents a challenge based on obviousness, as here, a proper analysis under *Graham v. John Deere* is required. Specifically, a Petitioner must determine “the scope and content of the prior art” and ascertain the “differences between the prior art and the claims at issue.” *Graham v. John Deere Co.*, 383 U.S.

1, 17-18 (1966); *see also KSR Int'l Co. v. Teleflex*, 550 U.S. 398, 418 (2007) (reaffirming *Graham* analysis).

Petitioner conducts **no** such analysis. Petitioner simply offers the following conclusory assertion: “POSITA would have known how to select and design the axial length of a pull region relative to the shank diameter based on **routine engineering considerations.**” Pet., 31. As shown, Petitioner offers this conclusion without ever analyzing the scope and content of the prior art (the first *Graham* factor) and the differences between the claims and prior art (the second *Graham* factor). An inadequate *Graham* analysis (as here) counsels towards denying the petition. *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (“Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.”)

Furthermore, merely relying upon “**routine engineering considerations**” is insufficient for a motivation to combine. The Federal Circuit has consistently held that routine engineering considerations, bare invocations of common sense, and conclusory assertions that a skilled artisan “could have” combined prior art references are legally insufficient to establish the motivation to combine required for an obviousness determination. For example, in *In re Van Os*, the Federal Circuit found that stating “that a combination of prior art would have been ‘common sense’

or ‘intuitive’ is no different than merely stating the combination ‘would have been obvious’,” and “[s]uch a conclusory assertion with no explanation is inadequate to support a finding that there would have been a motivation to combine.” 844 F.3d 1359, 1361 (Fed. Cir. 2017). Additionally, in *TQ Delta, LLC v. CISCO Sys., Inc.*, the Federal Circuit found that stating in a “conclusory fashion—again without any support—that the combination ‘would have been a relatively simple and obvious solution’” was insufficient for an obviousness theory. 942 F.3d 1352, 1362 (Fed. Cir. 2019) (“Untethered to any supporting evidence, much less any contemporaneous evidence, [the expert’s] *ipse dixit* declaration ‘fail[s] to provide any meaningful explanation for why one of ordinary skill in the art would be motivated to combine these references at the time of this invention.’”). Similarly here, Petitioner’s conclusory reliance on “**routine engineering considerations**,” which is untethered to any supporting evidence, fails to provide any meaningful explanation for why a POSITA would have known to select and design the axial length of a pull region relative to the shank diameter to meet requirements of claim 1(f).

Additionally, the Petition does not identify where Corbett 2018 recognizes the axial length of the pull region relative to shank diameter as a result-effective variable, nor has it shown why a person of ordinary skill would have selected the claimed upper bound of no greater than 4 times the shank diameter. Corbett 2018

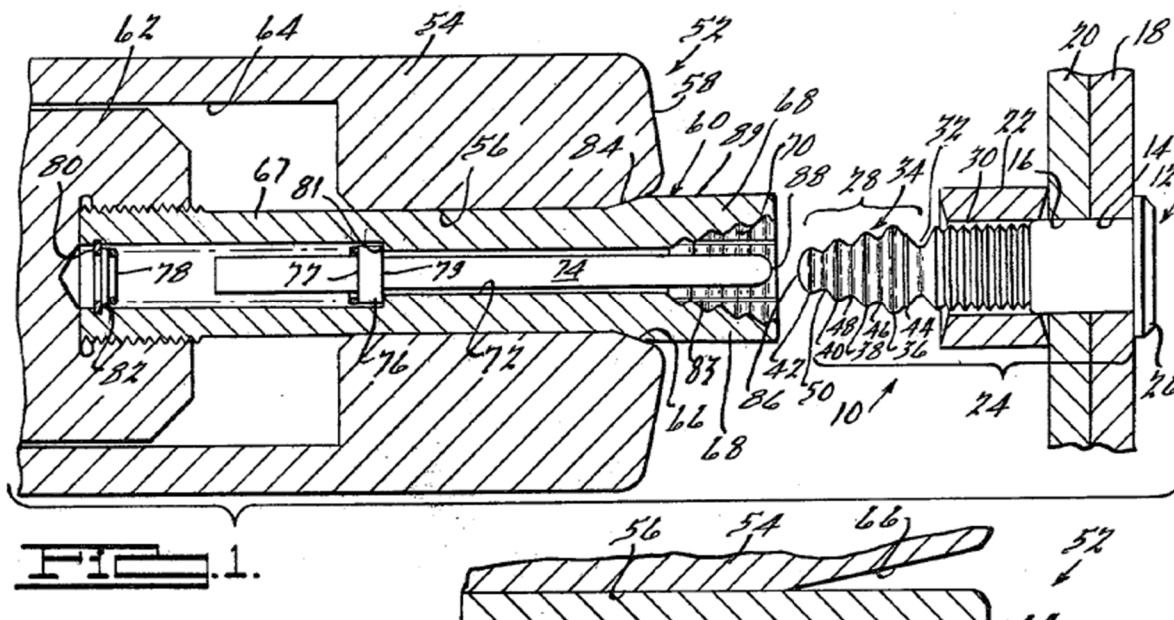
does not teach that the claimed proportional bound affects its operation or would be selected through routine optimization. *See e.g.*, Corbett 2018 ¶¶[0012]-[0014]. A conclusory assertion that a dimension could have been shortened is not a substitute for evidence that the particular claimed relationship would have been obvious. “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l. Co. v. Teleflex*, 550 U.S. 398, 418 (2007).

Accordingly, in view of the above, Petitioner’s Ground 2 fails to establish a reasonable likelihood of success.

V. GROUND 3: PETITIONER’S GROUND 3 DOES NOT SAVE GROUND 2

In Ground 3, Petitioner asserts that the claims 1-3, 6-7, 11, 14-17, 20 of the ’358 Patent are obvious over Corbett 2018 in view of U.S. Patent No. 4,299,519 (“Corbett 1981”). Pet., 42-61. Petitioner alleges that “Corbett 1981 provides additional, express disclosures relating to a short pull region,” and that “it would have been obvious to modify Corbett 2018’s blind fastener by replacing its ‘pull portion 28’ with Corbett 1981’s shortened and tapered ‘pintail 28.’” Pet., 42-43. Yet, Petitioner fails to sufficiently describe how Corbett 2018’s blind fastener could be modified by Corbett 1981’s shortened and tapered pintail 28.

For example, Corbett 2018 discloses “a fastener installation tool 60 includes a puller 62 and a swage anvil 64,” and “the puller 62 includes chuck jaws 66 having internal teeth 68 and pull groove 70 that are sized, shaped and adapted to grip the pull groove 28a of the pull portion 28 of the bolt 12.” Ex. 1006, ¶12. However, Corbett 1981’s pintail portion 28, as shown in the Fig. 1 of Corbett 1981 below, provides a substantially different structure than Corbett 2018’s blind fastener.



Ex. 1007, Fig. 1. Yet, Petitioner only offers the conclusory allegation that “modifying Corbett 2018’s pull portion to incorporate Corbett 1981’s short, tapered pull region would entail **only routine adjustments** to the mandrel geometry.” Pet., 44. However, Petitioner fails to sufficiently establish what those “**routine adjustments**” would have been and how Corbett 2018’s blind fastener would have been modified. Furthermore, Petitioner fails to sufficiently establish why a POSITA

would have been motivated to make such a modification and had a reasonable expectation of success in doing so. “[A] conclusory assertion with no explanation is inadequate to support a finding that there would have been a motivation to combine” because “[t]his type of finding, without more, tracks the ex post reasoning *KSR* warned of and fails to identify any actual reason why a skilled artisan would have combined the elements in the manner claimed.” *TQ Delta, LLC v. CISCO Sys., Inc.*, 942 F.3d 1352, 1359 (Fed. Cir. 2019) (quoting *In re Van Os*, 844 F.3d 1359, 1361–62 (Fed. Cir. 2017)).

Accordingly, in view of the above, Petitioner’s Ground 3 fails to establish a reasonable likelihood of success.

VI. GROUND 4: PETITIONER’S GROUND 4 IS DEFICIENT FOR AT LEAST THE SAME REASONS AS GROUND 2

In Ground 4, Petitioner asserts that claims 6-7 of the ’358 Patent are obvious over Corbett 2018 in view of Corbett 1981 and U.S. Patent No. 3,820,297 (“Hurd”). Pet., 62. More particularly, Hurd is relied upon by Petitioner as allegedly teaching “hardness selections for structural fastener pulling members/mandrels.” Pet., 62. Without conceding Petitioner’s allegations, Hurd does not cure the deficiencies of the combination of Corbett 2018 and Corbett 1981 as detailed in Patent Owner’s response to Ground 3, above.

Accordingly, in view of the above, Petitioner's Ground 4 fails to establish a reasonable likelihood of success.

VII. GROUND 5: PETITIONER'S GROUND 5 IS DEFICIENT

In Ground 5, Petitioner asserts that claims 1-20 of the '358 Patent are obvious over U.S. Patent No. 5,178,502 ("Sadri") in view of "The Next Generation Small Diameter HuckBolt®" ("BobTail"). Pet., 64. Specifically, Petitioner alleges that "it would have been obvious to modify Sadri's blind fastener by replacing its 'pintail portion' with BobTail's shortened and tapered pull region." Pet., 64. The teachings of Sadri and BobTail are cumulative of the references relied upon in Grounds 1-4. Additionally, similar to Grounds 1-4 above, Petitioner fails to sufficiently articulate a rationale for the proposed combination of Sadri and BobTail.

Accordingly, Petitioner's Ground 5 fails to establish a reasonable likelihood of success.

VIII. CONCLUSION

For the above reasons, Patent Owner respectfully requests that the Board deny the Petition and decline to institute a trial in this IPR.

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Patent No. 11,885,358

Respectfully submitted,
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Date: July 10, 2026

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Case No. IPR2026-00268

Patent No. 11,885,358

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing **PATENT OWNER'S PRELIMINARY RESPONSE** was served on the following counsel via electronic mail:

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