
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TRICAM INDUSTRIES, LLC
Petitioner

v.

LITTLE GIANT LADDER SYSTEMS, LLC
Patent Owner.

PGR2026-00044
Patent No. 12,359,506

PATENT OWNER'S PRELIMINARY RESPONSE

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PATENT OWNER'S EXHIBIT LIST

Exhibit Number	Description
2001	U.S. Patent No. 5,054,170 (“Otrusina”)
2002	U.S. Patent No. 6,142,892 (“Dennis”)
2003	Declaration of Steven Susser

I. INTRODUCTION

Patent Owner Little Giant Ladder Systems, LLC (“Little Giant”) has already requested discretionary denial of institution of Petitioner Tricam Industries, LLC’s (“Tricam”) Petition for Post Grant Review of U.S. Patent No. 12,359,506 (“the ‘506 Patent”) (Paper 10). In this Patent Owner Preliminary Response (“POPR”), Little Giant will address why Tricam’s Petition should not be instituted on the merits.

Art-based Ground 1 rests on Tricam’s proposed combination of Moss and Meyers. However, as will be addressed in detail below, even if one of skill in the art made the combination as proposed by Tricam, the resulting structure would not meet either of the independent claims of the ‘506 Patent. And for claims 8-11, all of which depend from claim 1, Tricam relies on an entirely different element-mapping approach than it did for claim 1 in an attempt to overcome the prior art’s silence as to the features of claim 8, creating an inconsistency within the Petition that calls into question whether Tricam met its statutory and regulatory burden to challenge the ‘506 Patent with particularity.

Further with respect to Ground 1, Tricam’s theory is that one of skill in the art would combine the Moss reference—a previous Little Giant patent directed to a step ladder for working at height—with Meyers, which is directed to a step stool. Specifically, Tricam proposes adding an accessory mount system from Meyers to Moss, but fails to acknowledge that the accessory mount system has drawbacks

when implemented in a stepladder like Moss.

And finally, Tricam's § 112-based Grounds 2 – 5 fare no better, hinging on Tricam's internally inconsistent and unsupported position that the claims are so unclear they cannot even be saved by claim construction. Tricam itself offered and applied a claim construction for the allegedly unclear claim terms, and Little Giant accepts those claim constructions for purposes of this POPR.

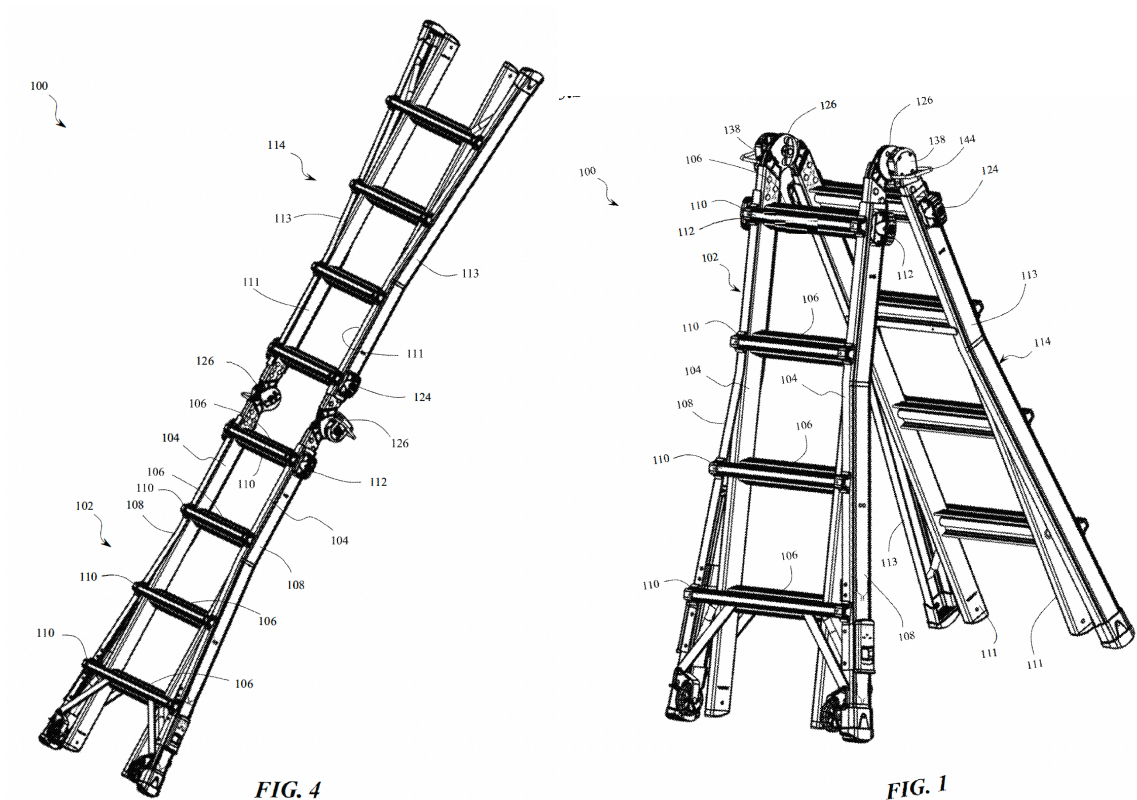
This POPR will address each of these flaws in turn.

II. BACKGROUND

A. The '506 Patent

The '506 Patent is directed to a ladder. There are many kinds of ladders. Straight ladders and extension ladders are normally positioned against an elevated surface such as a wall or edge of a roof to support the ladder at a desired angle. [Ex. 1001 at 1:32-36.] A user ascends the ladder to access an elevated area such as an upper area of a wall or the roof of a building. [*Id.* at 1:36-38.] On the other hand, step ladders or freestanding ladders are self-supporting in that they include two assemblies positioned at acute angles to one another (i.e., in the shape of an "A") to provide at least three but often four supports on the ground. [*Id.* at 1:42-51.] This allows a person to climb the ladder without leaning it against a surface. [*Id.* at 1:51-53.] The ladder of the '506 Patent is a combination ladder that can be configured as either a straight ladder or a freestanding ladder. [*See generally id.* at

1:24-56.] Pictured below at left is the ladder of the '506 Patent configured as a straight ladder. Pictured below at right is the ladder of the '506 Patent configured as a stepladder.



The switch from a straight ladder to a freestanding ladder is accomplished by a hinge assembly. [See generally *id.* at 6:63-8:44.] A button on the hinge assembly is part of a locking mechanism to keep the ladder in the desired configuration. [*Id.*]

The button of the '506 Patent also includes other features for holding objects at height while a person is working on the ladder. In the '506 Patent claims, the button includes first and second button bodies. One example second button body in

the ‘506 Patent is a button plate. Shown below is an annotated Figure 5 of the ‘506 Patent, which is an embodiment of the multifunctional button. The button plate (blue) is attached to but spaced away from the button body (green) to form a gap (red). The gap can receive an item such as a spatula or an end hook portion of a tape measure. [*Id.* at 11:34-45.]

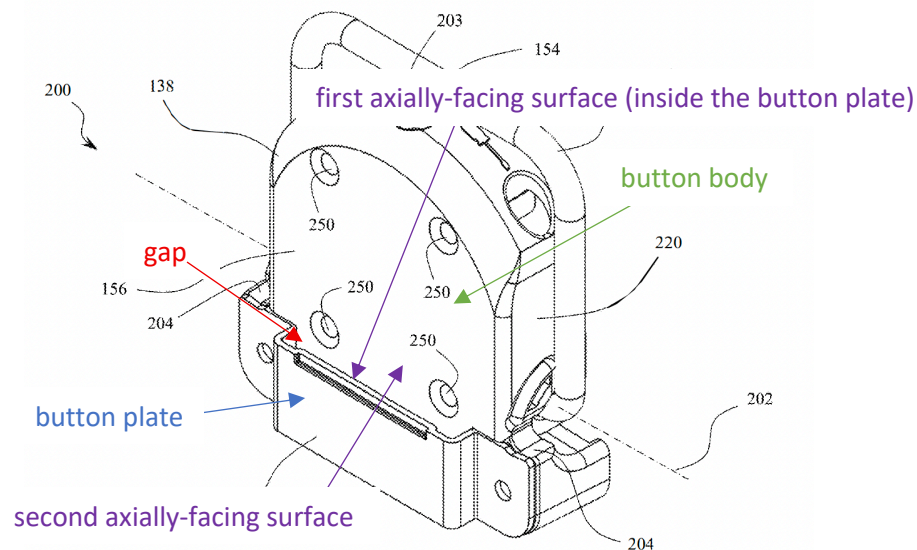


FIG. 5

More specifically, in the ‘506 Patent claims, the second button body (in one example, the button plate) has a first axially-facing surface partially spaced axially outward from a second axially-facing surface of the first button body by the gap. These first and second axially-facing surfaces are annotated on Figure 5 above in purple.

B. Prosecution History

The application that became the ‘506 Patent was subject to several rounds of rejections from the Examiner. [Petition at 12-19.] The penultimate rejection was

over Moss, Little Giant’s own prior art also relied on in the Petition; that rejection also relied on Ng, a wall hanging mount. [Ex. 1002 at 185-206 (Non-Final Office Action of September 5, 2024).] At first, the Examiner rejected the claims that ultimately issued. Specifically, the Examiner alleged that Moss taught all features of the claims except for the second button body. [*Id.* at 188-193.] The Examiner further alleged that one of skill in the art would have replaced a magnet provided on the button in Moss with the mount taught by Ng. [*Id.* at 192.]

In response, Little Giant argued against the combination of Ng and Moss and also submitted evidence of objective indicia of non-obviousness. [*Id.* at 124-137 (Remarks filed December 18, 2024).] Specifically, Little Giant argued against the combination of Ng and Moss because Ng is non-analogous art to the field of ladders and Ng is not reasonably pertinent to the problem faced by the inventors of the ’506 Patent. [*Id.* at 126-128.] Little Giant separately provided evidence of objective indicia of non-obviousness. [*Id.* at 128-136.] The Examiner was convinced by Little Giant’s arguments and allowed the application. [*Id.* at 15-23 (Notice of Allowance).]

III. ANALYSIS

A. Claim Construction

As noted by Tricam, when there is a controversy over the meaning of a claim term, the Board will construe the term under the standard in *Phillips v. AWH*

Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc) and its progeny. 37 C.F.R. § 42.200(b); *see, e.g., Toyota Motor Corp. v. Cellport Sys., Inc.*, IPR2015-00633, Paper 11 at 16 (P.T.A.B. Aug. 14, 2015).

Tricam proposes a construction of two claim terms of the ‘506 Patent. The first term, appearing in claims 1 and 12, is: “wherein the first pair of hinge portions and the second pair of hinge portions are pivotally coupled to each other to form a pair of hinges rotatable about a pivot axis” (the “Hinge Portions Term”). The second term, appearing in claim 2, is “the pair of hinge button assemblies is movable between a first axial position along the pivot axis and a second axial position along the pivot axis” (the “Hinge Button Assemblies Term”). Tricam alleges that both terms require construction because each term could cause confusion or cause the claim scope to go beyond the written description. [Petition at 25.]

Little Giant disagrees that either term causes confusion or goes beyond the scope of the written description, as will be addressed for Grounds 2 – 5 below. As a result, Little Giant submits that claim construction is not necessary and each term can be read according to its plain and ordinary meaning. Nevertheless, if the Director finds that claim construction is necessary to make an institution decision, Little Giant does not object to adoption of either of Tricam’s claim constructions.

B. Level of Skill in the Art

For purposes of this POPR, Little Giant does not dispute that Tricam's expert meets the level of skill in the art for the '506 Patent. Little Giant may address the level of ordinary skill in the art more fully if this PGR is instituted.

C. Ground 1: Obviousness

As discussed above, all of the '506 Patent claims include a gap between two components configured to receive an object. According to Tricam, Moss does not disclose these structures, and so the Petition relies on Meyers. This section will address two flaws with Ground 1: first, the combination of Moss and Meyers as Tricam proposes does not have all elements of the '506 Patent claims. Second, even if Tricam's proposed combination did meet the '506 Patent claims, one of skill in the art would not have made the combination in the first place. As a result, Little Giant submits that the combination of Moss and Meyers does not demonstrate that it is more likely than not that the claims of the '506 Patent are unpatentable.

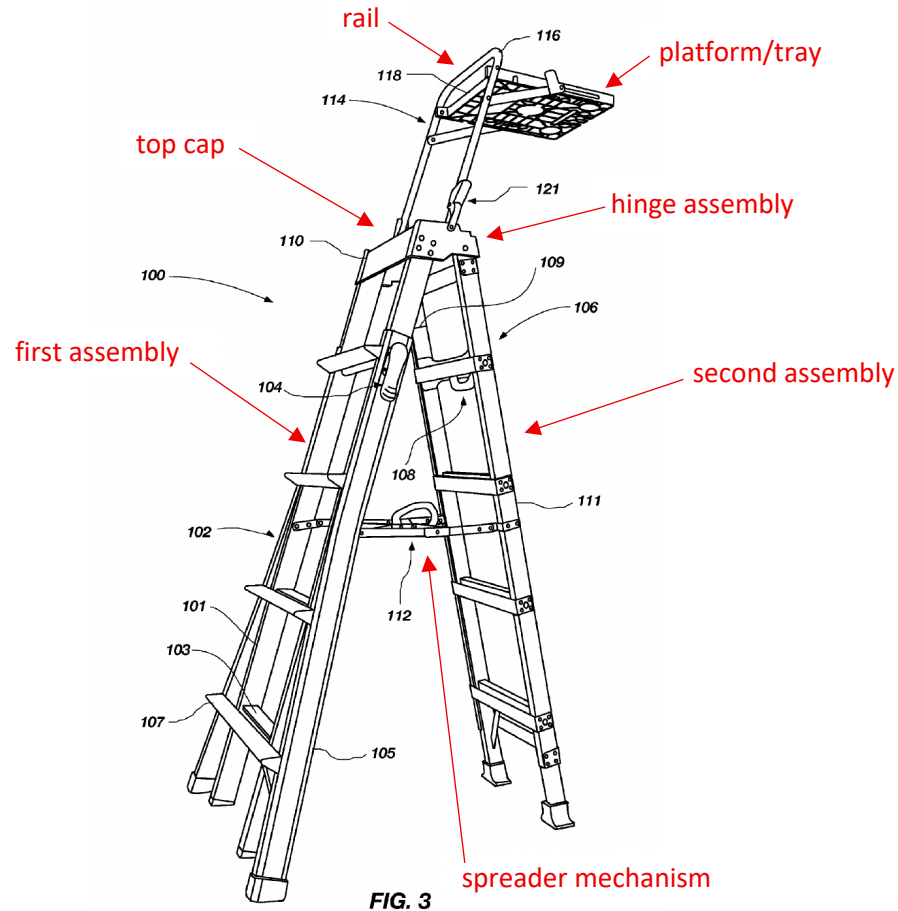
1. The Prior Art

In this section, Little Giant will highlight the pertinent teachings of Moss and Meyers.

a. Moss

Moss is Little Giant's previous patent. Moss describes a stepladder with

various features for working at elevated heights. Figure 3 from Moss is annotated below to highlight some aspects that are discussed in this Section.

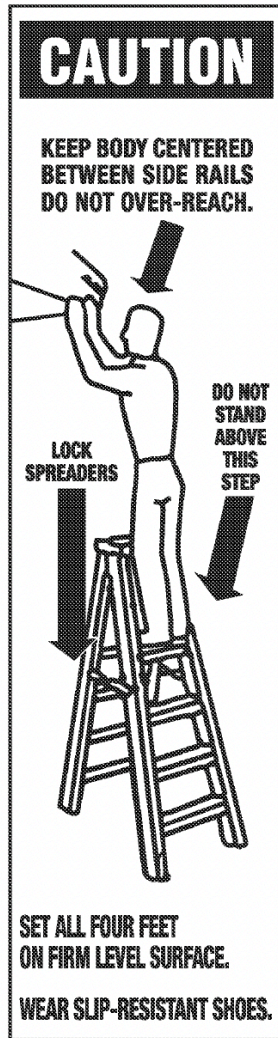


First and second assemblies form the “A” shape of the stepladder. [Ex. 1006 at 4:25-42.] In one embodiment, at least one of the first and second assemblies includes a dual-rail configuration such that the rails can be extended to exhibit different heights. [*Id.*] A spreader mechanism is configured to extend between the first and second assemblies for structural support. [*Id.* at 5:1-10; *see also* 6:29-49.] A rail can be provided on the top cap to allow a user to grasp or lean on the rail to

brace themselves when working at elevated heights. [*Id.* at 5:11-26.] The top cap may also include a tray or platform for holding tools, hardware, paint, or other items. [*Id.* at 5:26-31; 5:66-6:28.] The ladder has a heavy-duty hinge assembly which can increase the load rating of the ladder. [*Id.* at 9:12-32.] The hinge assembly includes one or more magnets for holding a tool or other item on the side of the ladder, such as pliers or wire cutters. [*Id.* at 9:33-46.]

Moss's ladder is most consistent with the ANSI¹ definition of "a stepladder." [Ex. 1011 at 12, defining stepladder as "[a] self-supporting portable ladder nonadjustable in length, with flat steps and a hinged base."). Moss depicts four rungs on each assembly in its figures. *See generally* Ex. 1006 at Figures. If a person were to climb to the second-highest rung, the person would be about three feet off the ground, and the hinge assembly would be about five feet off the ground, assuming Moss's ladder has the 12-inch rung spacing set forth in the ANSI standard. [Ex. 1011 at 13, Section 5.3.] Shown below at left is ANSI's marking requirement for stepladders and shown at right for comparison is Moss's ladder. [See *Id.* at 61, Section 9.3.1 and 67, Marking No. 1.]

¹ ANSI is the American National Standards Institute which coordinates standards across many United States industries. Tricam filed ANSI standards for ladders with its Petition as Exhibit 1011.



Marking No. 1

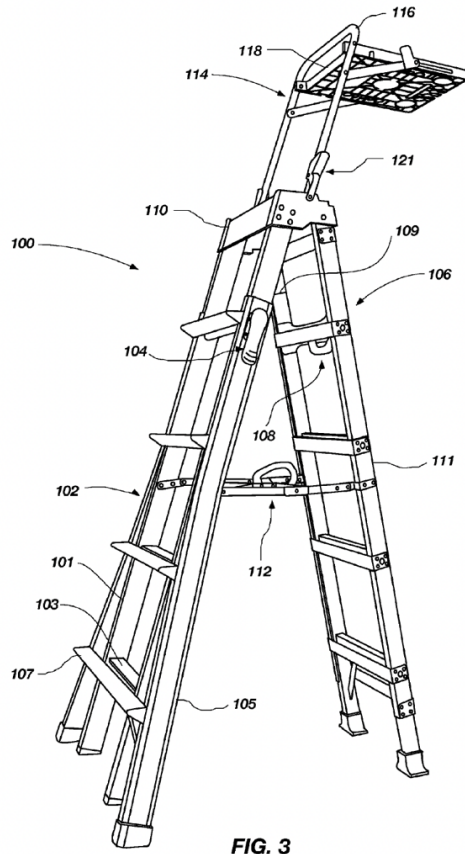
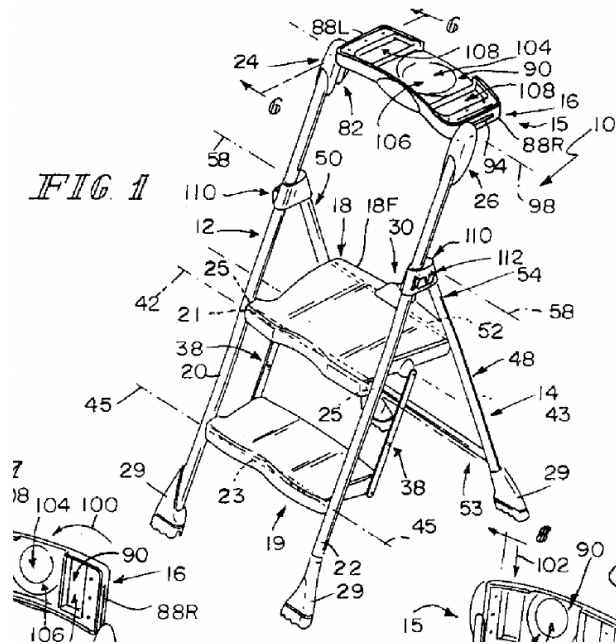


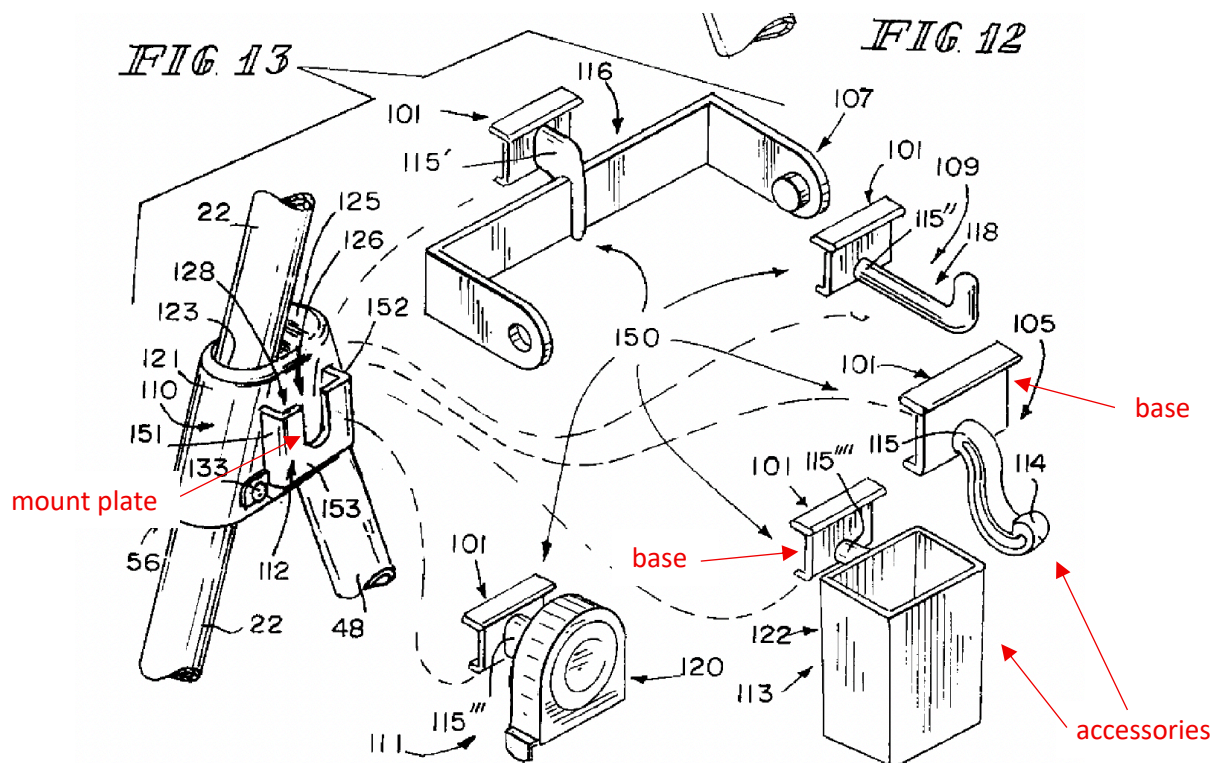
FIG. 3

b. Meyers

Meyers also discloses a “stepladder” by its own terms. But Meyers’s stepladder is not for working at height as in Moss. Rather, Meyers’s ladder is for light tasks such as reaching objects and painting where elevation would be helpful. [Ex. 1007 at 1:10-19.] To that end, Meyers’s stepladder has only two steps, as shown in Figure 1 below. [*Id.* at 3:45-51.]



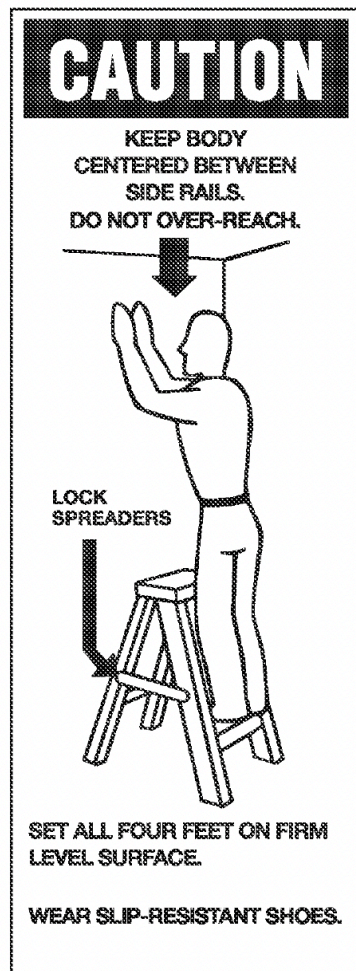
Meyers also discloses a two-piece accessory mount for its stepladder, shown below in annotated Figure 13 from Meyers. The accessory mount is part of a hinge that allows the ladder to fold flat. [Ex. 1007 at 7:66-8:7.] The mount includes a mount plate configured to receive a base. Bases are provided with unique accessories and can be interchanged in the mount plate. [*Id.* at 8:50-9:20.] These features are annotated in red below.



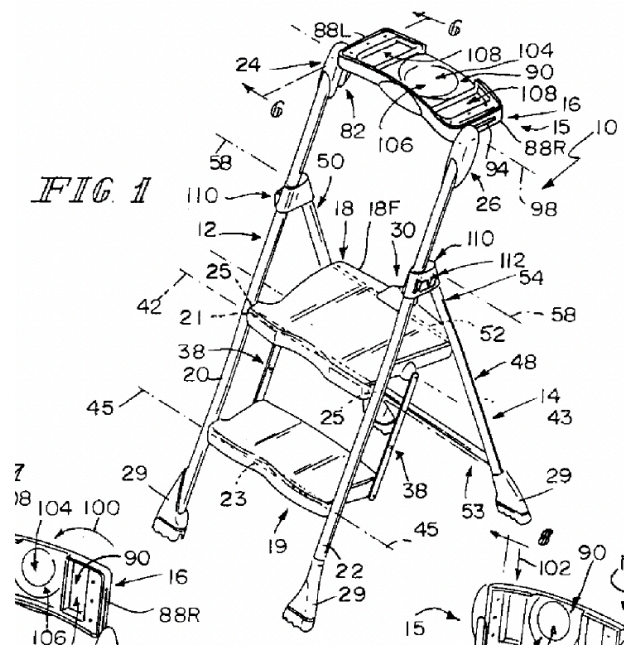
Although Meyers uses the term “stepladder,” Meyers’s ladder is better described as a ladder-type stepstool according to ANSI. In the ANSI standard, the difference between a step stool and a stepladder is that a step stool is designed so that the top step can be climbed on.² [Exhibit 1011 at 12, definition of “Step stool (ladder type).”] In Meyers, the top step is meant to be climbed on. [See, e.g., Ex. 1007 at 3:63-66 (describing bracing means for top step to inhibit undesired collapsing when the ladder is in use).] According to the ANSI standard for rung

² According to the ANSI standard, a step stool can have a top cap as its uppermost step. [Id.] However, ladders can also be constructed without a top cap, like Meyers’s ladder. [Id. at definition of “Top cap.”]

spacing (8 to 12 inches for step stools), the maximum height a person would reach using Meyers's ladder is thus 16 to 24 inches above the ground—not more than two feet. [Ex. 1011 at 13, Section 5.3.] Shown below at left is ANSI's marking requirement for step stools and shown at right for comparison is Meyers's ladder. [See *Id.* at 61, Section 9.3.3 and 70, Marking No. 11.]



Marking No. 11



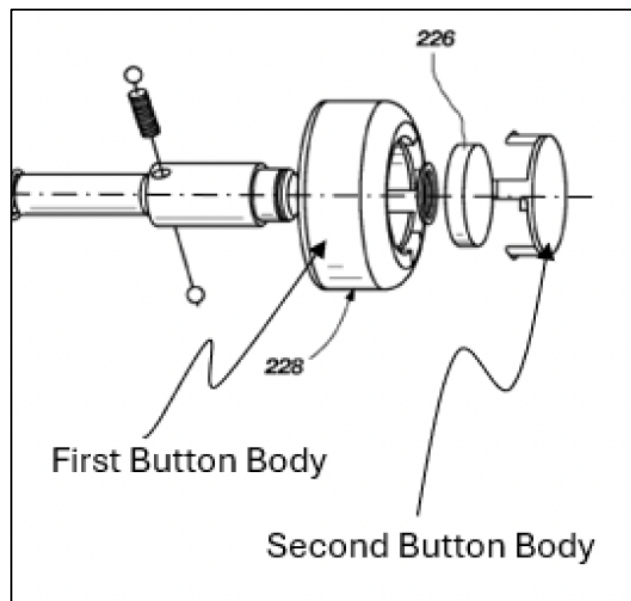
2. Tricam's Proposed Combination Does not Meet the Claims

The Petition provides a schematic drawing of what Tricam's proposed combination of Moss and Meyers would look like. As will be discussed in this

Section, the proposed combination does not have all features of either independent claim in the ‘506 Patent (claim 1 or claim 12).

a. Claims 1-11

As noted above, claim 1 of the ‘506 Patent recites first and second button bodies. Tricam relies on Moss for both claimed button bodies as shown in the excerpt from page 43 of the Petition below:



The alleged first button body is Moss’s actuation button (228) while the second button body is what Tricam refers to as a “cap” (no reference numeral).
Petition at 42-44.³

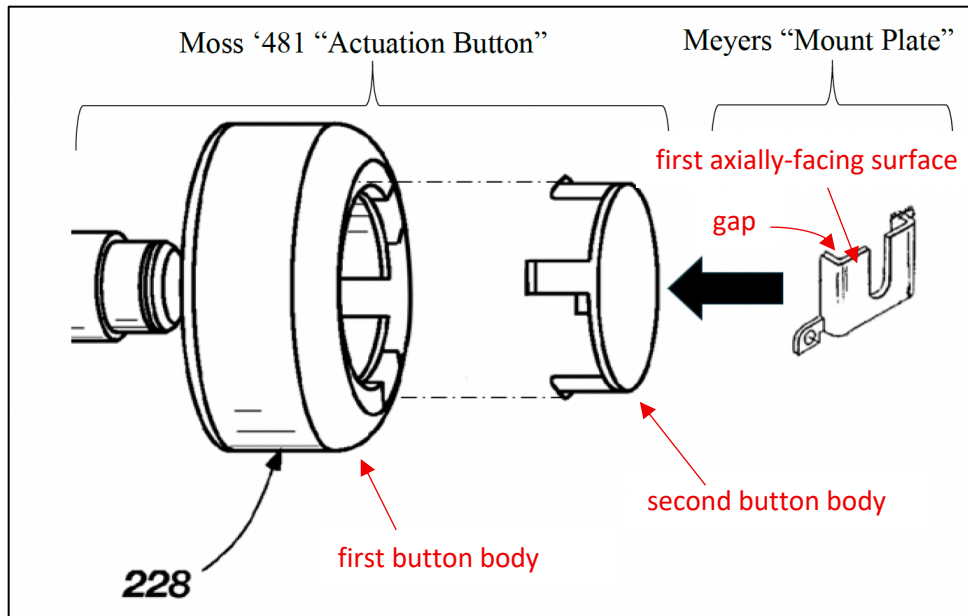
Claim 1 also recites that the second button body has a first axially-facing

³ In Moss, a magnet (226) is situated between the actuation button and cap. [Ex. 1006 at 9:33-46.]

surface partially spaced axially outward from a second axially facing surface of the first button body by at least one gap. [Ex. 1001 at 15:12-16.] To put this claim language in simpler terms, the first button body has an outward-facing surface and the second button body has an inward facing surface. The gap is situated between these two surfaces.

Tricam relies on Meyers for allegedly teaching this feature. Petition at 43-48. But the Petition only demonstrates this feature in the context of Meyers itself—that is, when Meyers’s mount plate is attached to Meyers’s own hinge. *Id.* at 46. Tricam then proposes adding the mount plate of Meyers to the structure it calls a second button body from Moss as shown on page 47 of the Petition and reproduced below. But Tricam never shows where the alleged first and second axially-facing surfaces are purported to be found on the proposed Moss-Meyers combination.

And Tricam cannot do so in a manner that is consistent with the claims. Annotated on the below excerpt are the first and second button bodies as alleged on page 43 of the Petition. Also annotated are the first axially facing surface of the mount plate together with the gap as alleged on page 46 of the Petition.

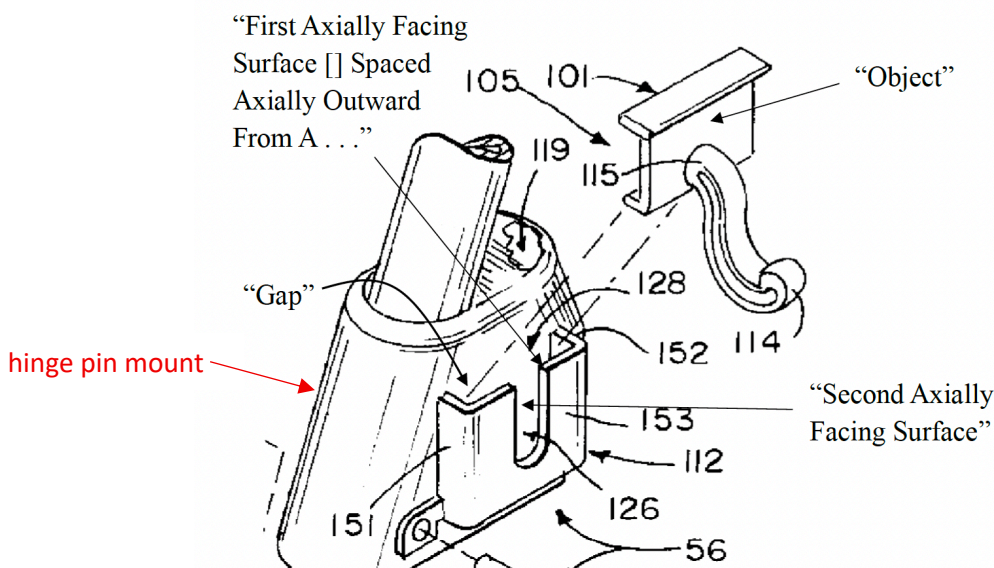


However, in Tricam’s proposed combination, there is no second axially-facing surface that meets claim 1. In claim 1, the second axially-facing surface is (a) part of the first button body, (b) axially inward from the first axially-facing surface, and (c) spaced from the first axially-facing surface by a gap. [Ex. 1001 at 15:12-16.] As is evident from the excerpt above, in Tricam’s proposed combination, there is no surface of the **first** button body (part a) that is also spaced from the first axially facing surface by the gap (part c). Instead, the second button body is situated between the first button body and the mount plate. Therefore, it is an outward-facing surface of the **second** button body that is spaced from the mount plate by the gap.

This is consistent with Tricam’s own interpretation of Meyers. In Meyers, the mount plate is mounted to a hinge pin mount. [Ex. 1007 at 8:10-11.] Tricam’s

annotation of Meyers's Figure 20 on page 46 of the Petition is reproduced below.⁴

As shown, in the context of Meyers, Tricam alleges the claimed second axially facing surface is the outer surface of the hinge pin mount.



If the same logic were applied to the proposed combination, the outer face of the alleged **second** button body (the cap) is the second axially-facing surface, since Tricam proposes mounting the mount plate there. Indeed, in its conclusion paragraph for its analysis of claim 1, Tricam equates “the outer surface of the cap” with the claimed second axially-facing surface. Petition at 50; *see also* Petition at

⁴ In its annotation, Tricam does not include the reference numeral 110, which refers to the hinge pin mount. [*Id.*] Little Giant has identified the hinge pin mount in its own annotation in red.

42. But again, that does not meet claim 1 because the claimed second axially-facing surface is a part of the **first** button body.

In short, Tricam's assertion that the proposed combination of Moss and Meyers has the claimed first and second axially-facing surfaces cannot be squared with its assertion that Moss reads on the claimed first and second button bodies.

[*Compare* Petition at 42-43 with Petition at 43-47.] This problem is fatal to Tricam's Ground 1 as it applies to claim 1 and its dependent claims 2-11.

b. Inconsistent Claim Mapping

Here Little Giant will address a separate problem in the Petition concerning Tricam's analysis of claim 1 as compared to claims 8-11, all of which depend from claim 1. In its analysis of claims 8-11, Tricam changes course from its analysis of claim 1, and calls the actuation button and cap in Moss, collectively, the first button body and calls the mount plate of Meyers the second button body. The below chart compares Tricam's shifting allegations with respect to the second button body:

Claim	Analysis
Claim 1	The “actuation button 228” has a main body (without reference numeral) coupled to the “hinge assembly 200” through a pivot pin (without reference numeral), thus disclosing <i>a first button body coupled with a hinge of the pair of hinges</i>. A cap (without reference numeral) is fitted onto the main body and would be movable with the main body relative to the hinge. Hence, Moss ‘481 discloses <i>a second button body</i> [Petition at 42-43.]

Claim 8	The “mount plate” of Meyers is identified as <i>the second button body</i> and the “actuation button” of Moss ‘481 including the “cap” is identified as <i>the first button body</i>. [Petition at 66.]
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These shifting theories emphasize the gap in Tricam’s allegations for claim 8. Moss is silent about the connection between the actuation button and the cap, and so Tricam’s attempt to address claim 8 required a new claim mapping approach. Tricam then carried over the new approach to claims 9 through 11. For claim 9, Tricam asserts that the first button body is the actuation button (228) consistent with its analysis of claim 1, but then it points to an outer surface of what is actually the cap in the accompanying schematic drawing. [Petition at 66-67.] For claims 10 and 11, Tricam likewise relies on the mount plate rather than the cap as the second button body. [*Id.* at 68.] Thus it seems that Tricam has collapsed the actuation button 228 with the cap as the alleged first button body and changed the alleged second button body to the mount plate for its analysis of claims 9 through 11, creating the same inconsistency with respect to its analysis of claim 1.

Tricam cannot change its interpretation of the prior art mid-stream. The Board has previously found unexplained inconsistent claim mapping to be fatal to a Petition. In *Facebook, Inc. and Whatsapp Inc. v. Uniloc USA, Inc. and Uniloc*

Luxembourg S.A., No. IPR2017-01524, Paper 7 (P.T.A.B. Dec. 4, 2017), the Board declined to institute AIA review where a Petitioner mapped one element of the challenged patent to two different elements of a prior art “without clearly or consistently arguing in the alternative for the alleged identity of this claim element in [the prior art] and without asserting, much less demonstrating, that the identified elements of [the prior art] are equivalent to one another.” *Id.* at 19-22. Specifically, the Board found that due to the inconstancy, the Petition did not sufficiently allege this key element was in the prior art, nor did the Petition meet the “basic statutory and regulatory requirements for particularity of arguments and supporting evidence in a petition.” *Id.* (citing 35 U.S.C. § 312(a)(3), 37 C.F.R. § 42.22(a)(2), and 37 C.F.R. § 42.104(b)(4)-(5)).

While *Facebook* concerned an IPR, this PGR is governed by the analogous statute at 35 U.S.C. § 322(a)(3) (requiring a petition to identify “with particularity” the grounds on which its challenge is based) and the analogous Rule at 37 C.F.R. § 42.204(b)(4)-(5) (requiring a petitioner to “specify where each element of the claim is found in the prior art” and “identify specific portions of the evidence that support the challenge.”). 37 C.F.R. § 42.204(b)(5) also permits the Board to exclude or give no weight to the evidence where a party has failed to meet these requirements. 37 C.F.R. § 42.22(a)(2) applies to petitions in both IPRs and PGRs and requires a petition to provide a “full statement of the reasons for the relief

requested.” As in Facebook, these requirements are not met because Tricam has not specifically identified which features in Moss and Meyers it considers to meet each of the elements of the claims of the ‘506 Patent—instead, Tricam points to different features in different areas of its Petition as it suits Tricam’s analysis.

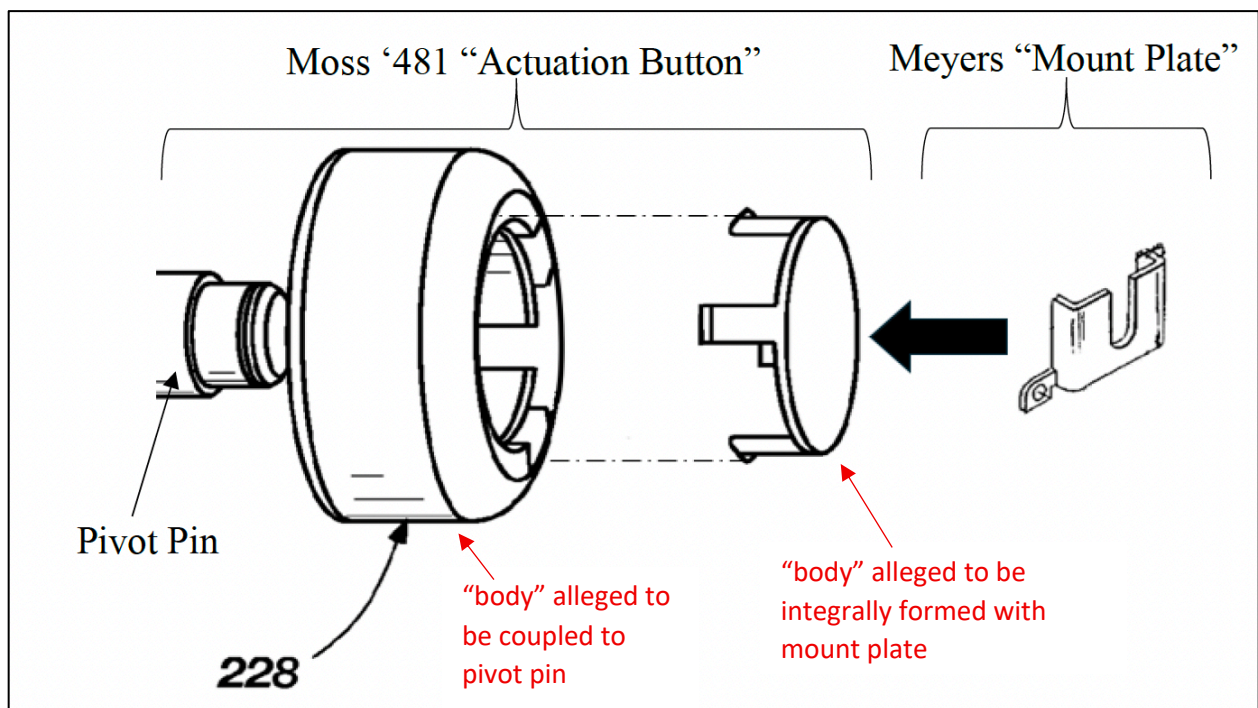
To that end, the Federal Circuit has more recently held that “[a] petitioner may not rely on a vague, generic, and/or meandering petition and later fault the Board for failing to understand what the petition really meant. Ultimately, it is the petitioner’s burden to present a clear argument.” *Netflix, Inc. v. DivX, LLC*, 84 F.4th 1371, 1377 (Fed. Cir. 2023). In *Netflix*, the Federal Circuit upheld the Board’s decision not to import alternative claim mapping theories from one portion of the petition to another, noting the Board is not “obligated to ‘cobble together assertions from different sections of a petition or citations of various exhibits in order to infer every possible permutation of a petitioner’s argument.’” (quoting *Microsoft Corp. v. FG SRC, LLC*, 860 Fed. Appx. 708, 713 (Fed. Cir. 2021)). As such, Tricam is bound by the claim mapping it presents in its Petition, and will not be able to shift its theories yet again even if this PGR is instituted. That is, Tricam will not be able to swap the claim mapping of claim 1 in its analysis of claim 8 or vice versa. *Id.*

c. Claims 12-13

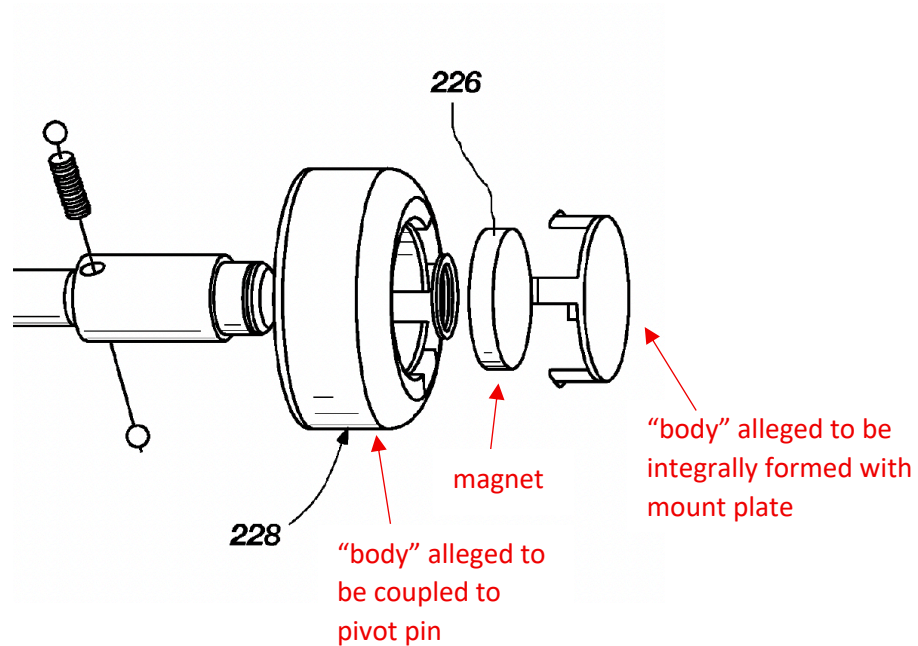
Tricam’s analysis of claim 12 suffers from a problem similar to that in its

analysis of claim 1—the proposed combination, even if made, does not meet claim 12. Claim 12 recites a body surface and a plate structure that is spaced axially outward from the body surface by at least one elongated gap configured to receive and support a tool hanging from the plate structure. [Ex. 1001 at 16:29-40.] Here Tricam proposes the same combination as for claim 1—adding the mount plate of Meyers as the alleged plate structure to Moss. [Petition at 83-84.]

In claim 12, a pivot pin is coupled to the body on a side of the body opposite the plate structure. [Ex. 1001 at 16:41-42.] But when Tricam identifies an alleged pivot pin, the pivot pin is coupled to a different “body” than the “body” that Tricam alleges is coupled to the mount plate, as shown in the annotated excerpt from page 89 of the Petition below:



And Moss's figure excerpted above shows the cap as separate from the button. Although it is not shown in Tricam's figure, a magnet is situated between the two "bodies" as shown in annotated excerpt from Figure 20 below. [See also Ex. 1006 at 9:32-41.]



Here again, Tricam's assertion that the combination of Moss and Meyers has a body with an integral plate structure cannot be squared with its assertion that the same body is also coupled to a pivot pin. [Compare Petition at 81-83 with Petition at 89.] This problem is fatal to Tricam's Ground 1 as it applies to claim 12 and its dependent claim 13.

3. One of Skill in the Art Would not Have Combined Meyers with Moss

Even setting aside the fact that Tricam's proposed Moss-Meyers

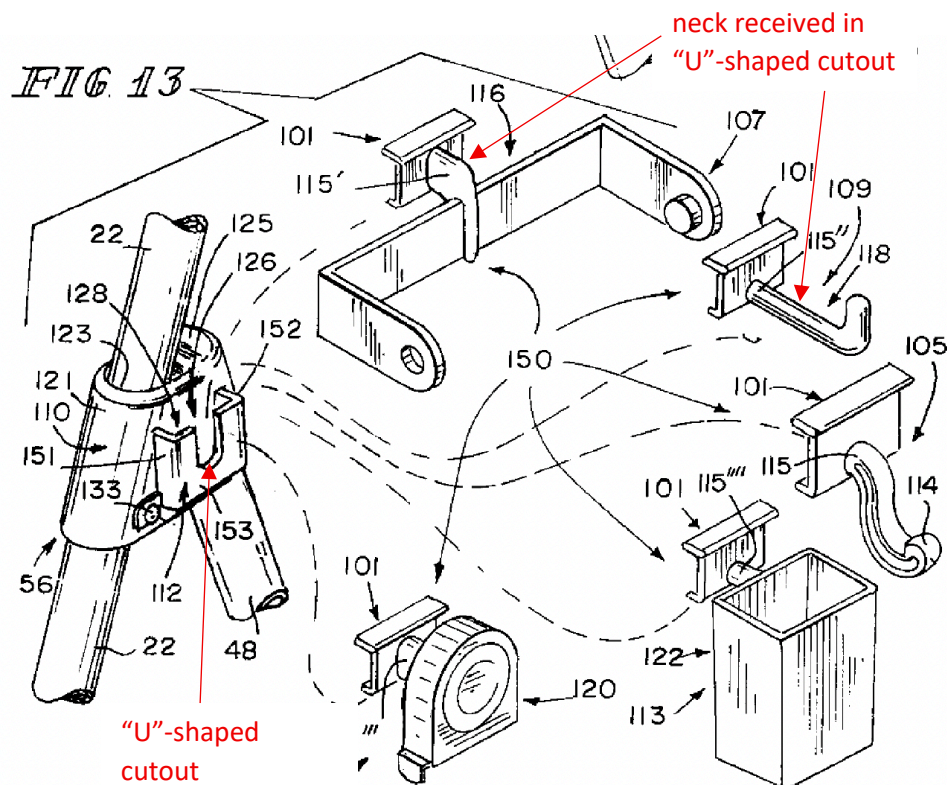
combination lacks all of the claimed features, one of skill in the art would not have combined Meyers with Moss because the proposed combination has drawbacks that must be considered but that Tricam does not address. *See, e.g., Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 796 (Fed. Cir. 2021) (Board must weigh tradeoffs in proposed combination). Namely, the two-piece accessory mount system is suitable for a short stepstool as described in Meyers but not for a stepladder for working at height as described in Moss.

As explained above, Meyers relates to a two-step stepstool for light tasks that benefit from elevation. Section III(C)(1)(b), *supra*. Meyers's stepstool comes with an accessory kit. The accessory kit has multiple accessories, such as utility hook, power cord hook, or utility holder, all with a common base. [Ex. 1007 at 8:3-7, 8:50-9:20; Figure 13.] The base is configured to be received in a mount plate attached to the hinge, as discussed in more detail above. [*Id.*] This allows a user to interchange the accessories either by coming down from Meyers's stepstool, or even while on one of Meyers's steps, which as described above, are not more than two feet off the ground. [Ex. 1007 at 1:10-19.]

By contrast, Moss's ladder is a stepladder that allows a person to climb at least three feet off the ground, or higher if the extension feature is used, to work at height. Section III(C)(1)(a), *supra*. In Tricam's proposed combination of Moss with Meyers, one would still need to use the accessories in order to hold a useful

tool or other object while working on the ladder. Tricam itself describes that the combination would be used in this way, as it alleges that Meyers's accessories are the claimed "objects" that would be received in the claimed gap of claim 1. Tricam does not allege that Meyer's mount plate would be used to hold a tool without attaching an accessory to it. [Petition at 46; *see also* Petition at 68 (analyzing claim 10).]

Indeed it does not appear that Meyers' mount plate could be used in this manner, since it is specifically adapted to receive a base of the accessories. As such, the mount plate includes a deep "U"-shaped cutout configured to interact with a neck of each accessory, annotated below on Figure 13. [Ex. 1007 at 8:62-9:20.] The "U"-shaped cutout would make it difficult to retain objects such as pliers or wire cutters directly in the mount plate securely as the object could fall out of the "U"-shaped cutout if one were to omit the accessory.



Tricam does not explain how the two-piece mount system of Meyers would be useful for a person working at height on Moss's ladder. Indeed, when a person is working three feet or more off the ground, it would not be practicable to manage and interchange accessories to hold tools. Nor would it be practicable for a user to come down from the ladder each time he or she needs to exchange the accessory to hold a different object.

Rather than address the practicalities of using the two-piece mount system of Meyers in the ladder of Moss, Tricam provides only a basic analysis of two obviousness rationales. First, Tricam claims the proposed combination would be

“combining prior art elements according to known methods to yield predictable results” because replacing Moss’s magnet with Meyers’s mount plate serves the same function of “object-hanging.” [Petition at 48-49 (for claim 1); Petition at 84-85 (for claim 12).] But that is not the case—Moss’s magnet is for holding a tool or other useful item such as pliers or wire cutters. [Ex. 1006 at 9:33-46.] Meyers’s mount plate is for holding an accessory which serves as an intermediary piece for holding a tool or useful object, as discussed above. Both Tricam and its expert are silent on this point. [Ex. 1003 at ¶ 89.] Thus Meyers’s mount plate functions differently than the magnet in Moss and the “predictable results” analysis is incomplete. *See, e.g., KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 405 (2007) (“A court must ask whether the improvement is more than the predictable use of prior art elements **according to their established functions.**”) (emphasis added).

Second, Tricam claims the combination is a “simple substitution of one known element for another to obtain predictable results.” Here Tricam asserts the predictable result is “a ladder with hinge button having tool-hanging capability” without certain drawbacks of the magnet in Moss. But Tricam never addresses the drawbacks of the two-piece mount system of Moss and its expert is also silent on this point. [Petition at 50 (for claim 1); Petition at 84-85 (for claim 12).] Here again, the purported obvious analysis is incomplete. *See Intel Corp.*, 21 F.4th at 796 (Board must weigh tradeoffs in proposed combination).

4. Non-Analogous Art

To streamline the issues for consideration in this POPR only, Little Giant assumes *arguendo* that Meyers is analogous art to the ‘506 Patent. However, if this PGR is instituted, Little Giant may establish that Meyers is not analogous art to the ‘506 Patent. As Tricam put it, “[t]he ‘506 Patent ladder is a collapsible combination ladder in that it is hinged, making it capable of functioning both as a stepladder and an extension ladder.” Petition at 4. On the other hand, as explained in detail above, Meyers is a step stool with a different function and structure, and Meyers’s accessory mount is not suitable for use with the ladder of the ‘506 Patent. *See, e.g., Airbus S.A.S. v. Firepass Corp.*, 941 F.3d 1374, 1382 (Fed. Cir. 2019). In fact, Meyers differs from the ‘506 Patent in many of the same ways as it differs from Moss as discussed in detail above. To that end, Little Giant may submit additional evidence if this PGR is instituted establishing that Meyers is not analogous to the ‘506 Patent, including expert testimony.

5. Ground 1 Fails for Claim 6 For an Additional Reason

Ground 1 fails for claim 6 for another reason independent from those discussed above. Claim 6 recites that the at least one gap includes two open ends. Tricam points to Meyers for claim 6 but admits that “Meyers is silent as to whether the bottom end is open.” Petition at 63. Tricam goes on to allege that it would have been obvious to make Meyers’s mount plate with an open bottom end “so that

items can pass all the way through the ‘gap’.” *Id.* at 64. To that end, Tricam suggests that the bottom end of Meyers’s mount plate would not need to be closed because the base of the accessories would make a bottom wall “unnecessary.” *Id.*

For these assertions, Tricam relies on the declaration of its expert, Jon Ver Halen, but the cited portion of Mr. Ver Halen’s declaration merely regurgitates the same conclusory statements from the Petition. [*Compare* Petition at 64 with Ex. 1003 at ¶ 114.] Tricam also asserts “the part would be simpler and easier to make,” again relying on the same statement in its expert report. *Id.* Mr. Ver Halen’s testimony is entitled to little weight as it adds nothing to the attorney argument in Tricam’s Petition. *See, e.g., Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (P.T.A.B. August 24, 2022) (precedential) (a declaration is entitled to little weight when it contains an exact restatement of a petition's unsupported, conclusory assertions without any additional supporting evidence or reasoning).

In any case, both Tricam and its expert fail to consider specific disclosure in Meyers that does not square with Tricam’s theory. Meyers teaches that the base is not only deposited into but is also **retained in** the base receptacle. [Ex. 1007 at 8:66-9:3.] If the bottom of Meyers’s base receptacle were open as Tricam suggests, the base would not be retained in the gap by any aspect of the receptacle. Indeed, in this arrangement the weight of the entire accessory and any items supported on the accessory would be supported by the narrow bottom of the “U”-shaped cutout

described above. This would seem to decrease the load-bearing capacity, and thus the usefulness, of Meyers's mount plate.

6. Indicia of Non-Obviousness

As noted by Tricam, during prosecution of the '506 Patent, the Examiner credited Little Giant's evidence of indicia of non-obviousness in the form of several declarations. [Petition at 93.] With its Petition, Tricam submits counter-declarations that Tricam asserts undermine Little Giant's evidence of copying. Petition at 94-96. Tricam also takes issue with Little Giant's evidence of commercial success and long-felt but unmet need is insufficient. [*Id.* at 96-100.] For purposes of deciding whether to institute the instant PGR, Little Giant submits that the Director need not reach the issue of indicia of non-obviousness because the only art-based ground in the Petition, Ground 1, is fatally flawed for the reasons discussed above. If this PGR is instituted, Little Giant will address Tricam's arguments with respect to indicia of non-obviousness, and may provide additional evidence on this point.

D. Grounds 2 – 5: Indefiniteness and Written Description

For its Grounds 2 – 5, Tricam alleges that two claim terms in the '506 Patent are indefinite and lack written description support. The first term, appearing in claims 1 and 12, is: "wherein the first pair of hinge portions and the second pair of hinge portions are pivotally coupled to each other to form a pair of hinges rotatable

about a pivot axis.” The second term, appearing in claim 2, is “the pair of hinge button assemblies is movable between a first axial position along the pivot axis and a second axial position along the pivot axis.” This section will show that the Petition does not establish it is more likely than not that any claim of the ‘506 Patent is invalid under § 112.

Before turning to the specifics, there are two flaws in Tricam’s §112-based arguments. First, Tricam only presents the § 112-based Grounds in the alternative to a claim construction that Tricam alleges will cure the alleged indefiniteness and written description issues in the claims. [Petition at 26-30.] So, the Board would only need to reach Grounds 2 – 5 if it decided that the claims of the ‘506 Patent could not be construed to preserve validity. *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 911 (Fed. Cir. 2004) (claims are construed to preserve validity unless, “after applying all the available tools of claim construction... the claim is still ambiguous.”). While Tricam urges such a result, it never explains why such a drastic measure is warranted here. Petition at 28, 38. Indeed, even Tricam was able to construe the claims in a manner it concedes resolved any alleged ambiguities and apply the constructions to the prior art. Further, Little Giant agrees that Tricam correctly understood the claims. Petition at 26-30; *see also* Section II(A), *supra*.

Tricam cites *Smartmetric, Inc. v. Am. Express Co.*, 476 Fed. Appx. 742 (Fed. Cir. 2012) in support of this argument but *Smartmetric* does not address construing

claims to preserve validity. Instead, *Smartmetric* applies the principle that courts do not rewrite claims to reject a party's proposed construction for a claim term that the court found deviated from the term's plain and ordinary meaning. *Id.* at 744-45. Tricam also cites *Allen Eng'g Corp. v. Bartell Indus.*, 299 F.3d 1336 (Fed. Cir. 2002) but *Allen* is distinguishable. In that case, the claim recited that two elements were perpendicular to one another, and Allen urged a claim construction of the term "perpendicular" as "parallel." *Id.* at 1349. Allen also admitted that the specification did not contemplate a perpendicular arrangement. *Id.* Under these facts, the Court determined that "Allen stretches the law too far." *Id.* Here, Little Giant is not urging any constructions inconsistent with the claim language or the specification, nor does it ask the Director to "stretch the law" of claim construction, as will be addressed in detail below.

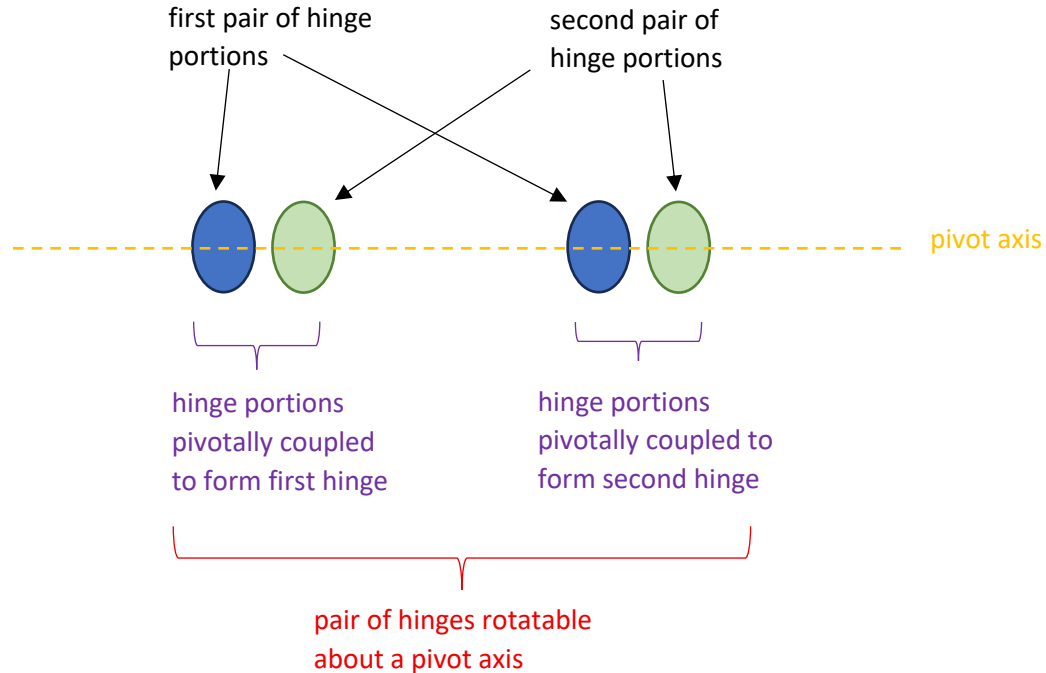
The second flaw is that, for the written description grounds (Grounds 2 and 4), these Grounds fail because the subject terms were in the originally-filed claims, and thus can provide the requisite written description for themselves. [Ex. 1002 at 610-611.] *See In re Gardner*, 480 F.2d 879, 879-80 (C.C.P.A. 1973) ("we consider the original claim in itself adequate 'written description' of the claimed invention."). The Petition overlooks that written description support can come from original claims, and wrongly focuses only on the Specification of the '506 Patent for written description support. [Petition at 103-105.]

Little Giant will nevertheless address both claim terms in detail below.

1. Grounds 2 and 3

Grounds 2 and 3 concern the claim term “wherein the first pair of hinge portions and the second pair of hinge portions are pivotally coupled to each other to form a pair of hinges rotatable about a pivot axis” (the Hinge Portions Term). In Ground 2, Tricam asserts this term lacks written description. In Ground 3, Tricam asserts this term is indefinite.

The Hinge Portions Term at issue is supported by the written description and is clear. Tricam is correct that the ‘506 Patent describes a ladder with two hinges, each hinge having a first hinge portion and a second hinge portion pivotally coupled to each other. [Petition at 26-27.] That is what the language “wherein the first pair of hinge portions and the second pair of hinge portions are pivotally coupled to each other to form a pair of hinges rotatable about a pivot axis” refers to, as shown in the schematic below:



And this also exactly what the specification of the ‘506 Patent teaches in the same portion as cited by Tricam:

“**Each hinge mechanism 126** may include a **first hinge component (e.g., 132)**... and a **second hinge component (e.g., 134)**... The **hinge components of each hinge mechanism 126** rotate about a **pivot member**... such that the first rail 15 assembly 102 and the second rail assembly 114 may pivot relative to each other between different angles defined between the first and second rail assemblies.”

[Excerpt from Petition at 26 (citing Ex. 1001 at 6:6-17) (emphasis added).]

A person of ordinary skill in the art, which according to Tricam is someone with a bachelor’s degree and at least two years’ experience doing mechanical design work, would have no trouble understanding this simple arrangement of

mechanical elements in the context of the ladder described in the ‘506 Patent. [See Petition at 25.] It is only when Tricam inserts additional words into the claim term that the language becomes confusing. Tricam asserts that there is a requirement that the first pair of hinge portions “as a unit” are pivotally coupled to the second pair of hinge portions “as a unit.” [Id. at 27.] This “as a unit” requirement is not found in the claims or specification of the ‘506 Patent. Nor does Tricam’s expert support Tricam’s attorney argument in the regard, since the expert simply applies the same “as a unit” requirement without further explanation. [Ex. 1003 at ¶ 55.]

Finally, even if the Hinge Portions Term was confusing or inconsistent with the specification of the ‘506 Patent, Tricam’s proposed construction of the Hinge Portions Term clarifies any such issues. [See Petition at 28.]

In short, when it is read without Tricam’s attempt to cause confusion, the Hinge Portions Term is clear, supported by the written description of the ‘506 Patent, and can be construed as Tricam proposed.

2. Grounds 4 and 5

Grounds 4 and 5 concern the claim term “the pair of hinge button assemblies is movable between a first axial position along the pivot axis and a second axial position along the pivot axis” (the Hinge Button Assemblies Term). In Ground 4, Tricam asserts this term lacks written description. In Ground 5, Tricam asserts this term is indefinite.

Here again, the claim term is clear and consistent with the specification of the ‘506 Patent—the claimed pair of hinge button assemblies consists of two hinge buttons, each of which is movable between the claimed first and second axial positions. The specification teaches a pair of hinge mechanisms. [Ex. 1001 at 6:4-6; *see also* Figs. 1, 4, 4a.] The specification also teaches that “the hinge mechanism 126 can have a locked position (e.g., a first axial position on an axis of rotation, e.g., axis 135) ...” and “the hinge mechanism 126 can be laterally/axially transitioned to an unlocked position (e.g., a second axial position on the axis of rotation, e.g., 135) ...” [Ex. 1001 at 7:48-65.]

And here again, Tricam manufactures the requirement that the two hinge button assemblies are movable “as a unit”—a feature not taught by the ‘506 Patent claims or specification. Petition at 28. As above, Tricam’s expert offers no further analysis, simply using the same terminology that Tricam does in the Petition. [Ex. 1003 at ¶ 56.]

Finally, if the Hinge Button Assemblies Term was confusing or inconsistent with the specification of the ‘506 Patent, Tricam’s proposed construction of the Hinge Button Assemblies Term clarifies any such issues. *See* Petition at 30.

In short, when it is read without Tricam’s attempt to cause confusion, the Hinge Button Assemblies Term is clear, supported by the written description of the ‘506 Patent, and can be construed as Tricam proposed.

IV. CONCLUSION

Little Giant has filed a separate discretionary denial brief setting forth why Tricam's instant Petition for PGR should not be instituted. As established in this POPR, evaluation of the merits points to the same result. Tricam's Petition must be analyzed to determine whether it establishes it is more likely than not that at least one claim of the '506 Patent is unpatentable. 35 U.S.C. § 324(a). Little Giant submits that Tricam has not met this burden. Tricam's shifting claim mapping fails to meet the statutory and regulatory requirements for institution of PGR. Even setting that problem aside, one of skill in the art would not have made the proposed combination of Meyers and Moss—and even if one did, it does not meet the claims of the '506 Patent. Finally, Tricam's § 112 based grounds are undermined by Tricam's own claim constructions, which show that even if correction of the claims is needed, it can easily be accomplished.

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Dated: July 21, 2026

CERTIFICATE OF COMPLIANCE

The undersigned certifies that the foregoing Patent Owner Preliminary Response complies with the type-volume limitations of 37 C.F.R. § 42.24(b)(1). Specifically, this POPR contains 7,101 words as determined by the Word count feature of Microsoft Word, excluding those portions of this POPR listed in 37 C.F.R. § 42.24(a)(1).

The undersigned further certifies that this POPR complies with the typeface and typestyle requirements of 37 C.F.R. § 42.6(a)(2)(ii)-(iii). This POPR was prepared in Times New Roman 14-point font.

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.6(e), I hereby certify that a true and correct copy of the foregoing document was served on counsel of record via email to the following addresses:

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