

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VERSA PRODUCTS,
Petitioner,

v.

VARIDESK, LLC,
Patent Owner.

IPR2020-00387
Patent 10,159,336 B2

Before KEVIN W. CHERRY, ROBERT L. KINDER, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

CHERRY, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. BACKGROUND

Versa Products (“Petitioner”) filed a petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 1–18 (the “challenged claims”) of U.S. Patent No. 10,159,336 B2 (Ex. 1001, “the ’336 patent”). 35 U.S.C.

§ 311 (2018). Varidesk, LLC (“Patent Owner”) timely filed a Preliminary Response. Paper 8. On July 10, 2020, based on the record before us at the time, we instituted an *inter partes* review of all challenged claims on all grounds alleged as indicated in the table below. Paper 13 (“Institution Decision” or “Dec.”).

Claim(s) challenged	35 U.S.C. §	References
1–18	102(a) ¹ , 103	Laudadio ²
1–16	102(a), 103	Wynn ³
1–18	103	Laudadio, Chouinard, ⁴ Wynn
1–4, 9–12, 17	102(a), 103	Faitel ⁵
1–18	103	Chouinard, Laudadio, Wynn

After we instituted this review, Patent Owner filed a Patent Owner Response in opposition to the Petition (Paper 18, “PO Resp.”). Petitioner filed a Reply in support of the Petition (Paper 19, “Reply”). Patent Owner did not file a Sur-reply responding to the Reply. *See* Paper 14, at 10

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Because the effective filing date of the ’336 patent is after the effective date of the applicable AIA amendment, we refer to the AIA versions of 35 U.S.C. §§ 102 and 103.

² U.S. Patent No. 10,413,055 B2, issued September 17, 2019 (Ex. 1005, “Laudadio”).

³ U.S. Patent No. 3,928,946, issued Dec. 30, 1975 (Ex. 1008, “Wynn”).

⁴ U.S. Patent No. 7,677,518 B2, issued Mar. 16, 2010 (Ex. 1007, “Chouinard”).

⁵ U.S. Patent Application Publication No. US 2003/0047388 A1, published Mar. 13, 2003 (Ex. 1009, “Faitel”).

(Scheduling Order authorizing Patent Owner’s sur-reply). Patent Owner also did not move to amend any claim of the ’336 patent.

Neither party requests oral argument. *See* Paper 20.

We have jurisdiction under 35 U.S.C. § 6. The evidentiary standard is a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d) (2019). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons expressed below, we conclude that Petitioner has demonstrated by a preponderance of evidence that claims 1–18 are unpatentable.

B. RELATED PROCEEDINGS

The parties do not identify any pending petitions for *inter partes* review involving patents that are related to the ’336 patent, and do not identify any district court proceeding that is related to the ’336 patent. Pet. 9; Paper 3, 1.

C. THE ’366 PATENT

The ’336 patent is titled “Electrically-Lifted Computer Desk and Office Desk Thereof.” Ex. 1001, [54]. The ’336 patent relates to an electrically-lifted computer desk and office desk, which can be used separately or in combination and can be lifted stably with low noise and great bearing power. *Id.* at 1:9–12. The ’336 patent achieves these advantages by including a frame-shaped driving mechanism and a frame-shaped intermediate support member, with a nut sliding rod seat of the intermediate support member providing a reciprocating motion upon rotation of a screw rod. *Id.* at 1:28–36.

The '336 patent describes an electrically-lifted computer desk. *Id.* at 1:56–57. An illustrative embodiment of such a desk is depicted in Figure 1, reproduced below.

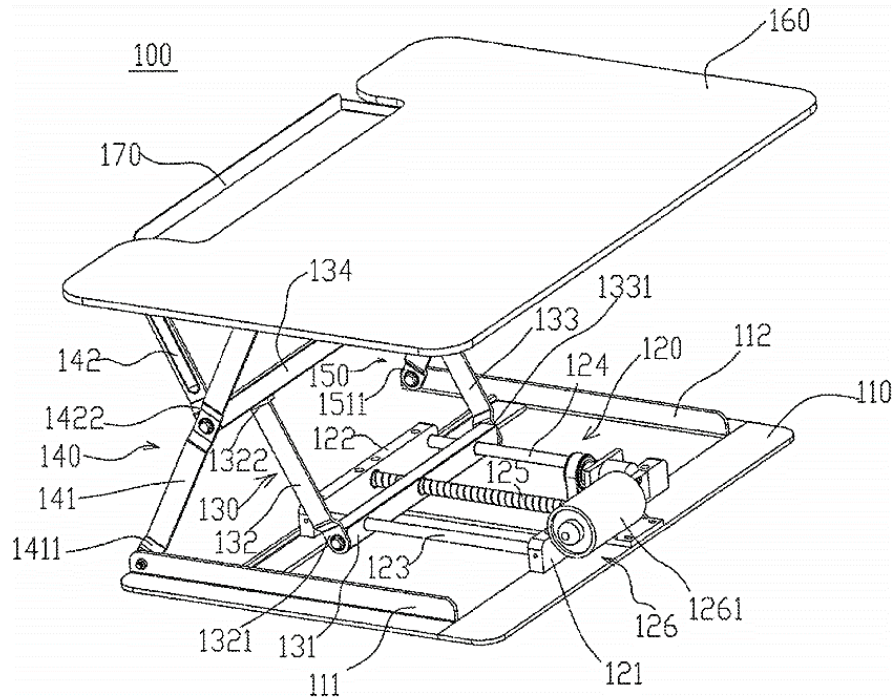


FIG. 1

Figure 1 is a three-dimensional structure schematic diagram of an electrically-lifted computer desk. *Id.* at 3:40–41. Desk 100 includes bottom plate 110, driving mechanism 120, intermediate support member 130, first side-support member 140 connected by transverse link 134 to second side-support member 150, and face plate 160. *Id.* at 3:57–61. Driving mechanism 120 includes first guide rod 123 and second guide rod 124 that are parallel to each other, and screw rod 125 between first and second guide rods 123, 124. *Id.* at 4:1–11. Intermediate support member 130 includes nut sliding rod seat 131, first side-support piece 132, and second side-support piece 133, wherein nut sliding rod seat 131 reciprocates along first guide rod 123 and second guide rod 124 upon rotation of screw rod 125. *Id.* at

4:17–24. Respective lower ends of first and second side-support pieces 132, 133 are connected to nut sliding rod seat 131, and respective upper ends of first and second side-support pieces 132, 133 are connected to transverse link 134. *Id.* at 4:24–31. Driving source 126 such as motor 1261 causes screw rod 125 to rotate, which causes nut sliding rod seat 131 to move along screw rod 125 to raise and lower face plate 160. *Id.* at 4:41–42; 4:56–59; Figs. 3 and 4.

Claim 1 is the sole independent claim among the challenged claims.

Independent claim 1, which is illustrative, recites:

1. A desk comprising:
 - [1.1] a bottom plate;
 - [1.2] a first side-support member coupled to the bottom plate;
 - [1.3] a second side-support member coupled to the bottom plate;
 - [1.4] a face plate coupled to the first side-support member and the second side-support member;
 - [1.5] a transverse link coupled to the first side-support member and the second side-support member;
 - [1.6] a driving mechanism, the driving mechanism comprising:
 - [1.7] a first guide rod;
 - [1.8] a second guide rod parallel to the first guide rod;
 - [1.9] a screw rod parallel to the first guide rod; and
 - [1.10] a driving source configured to rotate the screw rod, and

[1.11] a nut sliding rod seat coupled to the transverse link with at least one side-support piece, the nut sliding rod seat configured to move along the screw rod,

[1.12] wherein the driving mechanism is configured to rotate the screw rod moving the nut sliding rod seat to raise and lower the face plate.

Ex. 1001, 5:63–6:15 (with labels 1.1–1.12 added to aid discussion).

II. ANALYSIS

A. CLAIM INTERPRETATION

We interpret claims in the same manner used in a civil action under 35 U.S.C. § 282(b) “including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b). When applying that standard, we interpret the claim language as it would be understood by one of ordinary skill in the art in light of the specification. *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010). Thus, we give claim terms their ordinary and customary meaning as they would be understood by an ordinarily skilled artisan. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning ‘is the meaning that the term would have to a person of ordinary skill in the art in question.’” (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005))). Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

1. “Desk”

Neither party proposes expressly construing the term “desk,” but the parties do dispute whether this term, which is found in the preamble of

independent claim 1, is limiting. PO Resp. 2–3 (arguing that Wynn and Faitel fail to disclose a “desk”); Reply 17–18. Whether preamble language is limiting is a claim-construction issue. *See Cochlear Bone Anchored Solutions AB v. Oticon Med. AB*, 958 F.3d 1348, 1354 (Fed. Cir. 2020).

“Generally, a preamble is not limiting.” *Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1292 (Fed. Cir. 2015). Whether a preamble is limiting is “determined on the facts of each case in light of the overall form of the claim, and the invention as described in the specification and illuminated in the prosecution history.” *Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1572–73 (Fed. Cir. 1996). A preamble limits the claimed invention if it recites essential structure or steps, or if it is “necessary to give life, meaning, and vitality” to the claim. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999). A preamble is not limiting, for example, if the patentee “defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). And, a preamble is generally not limiting unless there is “clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art.” *Id.* A preamble can be limiting if it recites “additional structure or steps underscored as important by the specification,” is “essential to understand limitations or terms in the claim body,” or provides necessary structure absent from the claim body. *Id.* at 808–09.

We see no basis, in this case, for departing from the general rule that a preamble is not limiting. First, the descriptor “desk” does not embody an essential component of the invention. The body of the claim recites “a

bottom plate,” “support members” coupled to the bottom plate, a “face plate,” a “transverse link” coupling the “support members,” and a “driving mechanism” for raising and lowering the face plate. The body of claim 1 recites all of the structural components of the apparatus, and neither party suggests any differently. *See* PO Resp. 4–5 (arguing Wynn and Fritel are not “desks” but identifying no structural difference between a “work surface” and a “desk”). This is consistent with the type of case where the preamble is not limiting because the “deletion of the preamble phrase does not affect the structure of steps of the claimed invention.” *Catalina Marketing*, 289 F.3d at 809. Instead, the term “desk” is a descriptive name for the invention that is fully set forth in the body of the claims. *See Storage Tech. Corp. v. Cisco Sys., Inc.*, 329 F.3d 823, 831 (Fed. Cir. 2003) (preamble term “policy caching method” did not limit claims because it served only as a “convenient label for the invention as a whole”); *IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422, 1434–35 (Fed. Cir. 2000) (noting the preamble is not limiting when “the preamble merely gives a descriptive name to the set of limitations in the body of the claim that completely set forth the invention”).

The Specification of the ’336 patent further confirms that “desk” is a label for the overall invention and not a limitation on the claims. Although the phrase “desk” appears in the title, in the abstract, and in the rest of the written description, it is consistently used as a reference for the overall name for the apparatus comprised of the components listed in claim 1. The Specification supports the understanding that the phrase is meant to serve as a label for the invention as a whole. In the background the invention, the Specification identifies the problem in the art that

In a household environment, the desk has been incorporated into human lives with multiple functions. On the current stage, the desk is generally used only as a dining table, a computer desk, a study desk and the like. Therefore, the functions of the desk are single at present, and can not satisfy the multi-purpose requirements.

Ex. 1001, 1:21–26. Thus, the Specification indicates that, although the claimed apparatus is termed a “desk,” it, in fact, serves many purposes.

We further note that clear reliance on a preamble during prosecution can distinguish a claimed invention from the prior art and render the preamble a claim limitation, *Catalina Marketing*, 289 F.3d at 809, but there was no such reliance here. During the prosecution history both Fritel and Wynn were relied on by the Examiner, but the applicants never raised the preamble as a basis for patentability. *See* Ex. 1002, 97–100. Indeed, in response to the Examiner’s rejection, the applicants amended the claims to add a different, structural limitation, in their efforts to overcome the prior art. *Id.*

Accordingly, we determine that “desk” as used in the preamble is merely a descriptive name for the set of limitations in the body of the claim that completely sets forth the invention and that “desk” is not limiting.

We discern no other terms in need of express interpretation. *See* Pet. 17–18. Accordingly, we apply the legal standards set forth above when reading the claims.

B. THE PARTIES’ POST-INSTITUTION ARGUMENTS

In our Institution Decision, we concluded that the argument and evidence adduced by Petitioner demonstrated a reasonable likelihood that claims 1–18 were unpatentable as obvious based on the challenges identified in the table in Part I.A above. Dec. 41. We must now determine whether

Petitioner has established by a preponderance of the evidence that the specified claims are unpatentable over the cited prior art. 35 U.S.C. § 316(e). We previously instructed Patent Owner that “any arguments not raised in the [Patent Owner Response] may be deemed waived.” Paper 14, 8; *see also In re Nuvasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (holding that patent owner’s failure to proffer argument at trial as instructed in scheduling order constitutes waiver). Additionally, the Board’s Trial Practice Guide states that the Patent Owner Response “should identify all the involved claims that are believed to be patentable and state the basis for that belief.” Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012).

C. LEGAL STANDARDS

Petitioner challenges the patentability of claims 1–18 on the grounds that the claims are anticipated or obvious, or both. To prevail in its challenges to the patentability of the claims, Petitioner must establish unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to Patent Owner. *See 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)) (discussing the burden of proof in *inter partes* review).

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), reaffirmed the framework for determining obviousness as set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The *KSR* Court summarized the four factual inquiries set forth in *Graham* that we apply in determining whether a claim is unpatentable as obvious under 35 U.S.C. § 103 as follows: (1) determining the scope and content of the prior art, (2) ascertaining the differences between the prior art and the claims at issue, (3) resolving the level of ordinary skill in the pertinent art, and (4) when in evidence, considering objective evidence indicating obviousness or nonobviousness.⁶ *KSR*, 550 U.S. at 406 (citing *Graham*, 383 U.S. at 17–18). In an *inter partes* review, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

Petitioner must explain how the proposed combinations of prior art would have rendered the challenged claims unpatentable. An obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *accord Translogic*, 504 F.3d at 1259. However, Petitioner cannot satisfy its burden of proving obviousness by employing

⁶ The record does not include any evidence of secondary considerations.

“mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record” to support an obviousness determination. *Magnum Oil*, 829 F.3d at 1380–81. Petitioner also “must articulate a reason why a person of ordinary skill in the art would have combined the prior art references.” *NuVasive*, 842 F.3d at 1382.

At this final stage, we determine whether a preponderance of the evidence of record shows that the challenged claims would have been anticipated or rendered obvious in view of the asserted prior art. We analyze the asserted grounds of unpatentability in accordance with these principles.

D. LEVEL OF ORDINARY SKILL

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of the invention. *Graham*, 383 U.S. at 17. Petitioner proposes that a person of ordinary skill

would have had at least an undergraduate degree in mechanical engineering, plus 1–3 years of experience in mechanical design, or equivalent experience and education

Pet. 15 (citing Ex. 1012 ¶ 17; Ex. 1013 ¶ 24). Patent Owner does not dispute this definition of a person of ordinary skill. *See generally* PO Resp. We disagree with Petitioner’s use of “at least” because it leaves open the potential skill level. Otherwise, we adopt Petitioner’s proposed level of ordinary skill as it appears to be consistent with the level of skill reflected in the specification and in the asserted prior art references. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art itself can reflect the appropriate level of ordinary skill in the art).

E. CLAIMS 1–16:

ANTICIPATION/OBVIOUSNESS BASED ON WYNN

Petitioner argues that Wynn anticipates claims 1–16 or by itself renders claims 1–16 unpatentable as obvious. Pet. 31–39. Claim 1 is independent and claims 2–16 each directly or indirectly depend from claim 1. Ex. 1001, 5:63–8:8. Patent Owner presents one argument against Petitioner’s anticipation challenge to independent claim 1, further argues that claims 5–8, 11, and 14–16 are not adequately accounted for, and argues that Petitioner’s obviousness rationale is insufficient. See PO Resp. 2–3, 4–5, 10–12. As explained below, we determine that Petitioner has proven by a preponderance of evidence that Wynn anticipates claims 1–16.

1. Independent Claim 1

Petitioner argues that Wynn anticipates or renders obvious claim 1.⁷ Pet. 31–34.

a. Wynn

Wynn is titled “Three Axis Adjustable Disc Sander.” Ex. 1008, [54]. Figure 1, reproduced below, is a perspective view of the device. *Id.* at 2:49.

⁷ Petitioner’s obviousness contentions based on Wynn appear to be presented only in the alternative if we find Wynn does not anticipate. Because we find that Wynn anticipates claims 1–16, we do not reach Petitioner’s obviousness contentions.

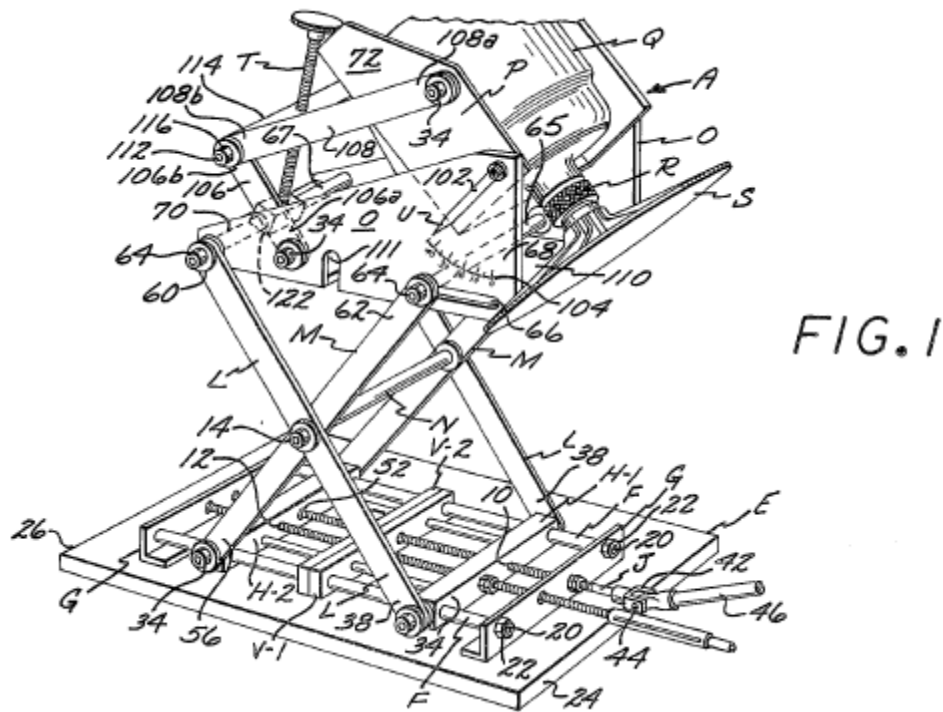


Figure 1 depicts device A supporting electric motor Q of sander disc S. Ex. 1008, 3:50–56. Device A has base E and two sets of first and second elongate rigid members L and M that are arranged in the form of an “X” and disposed on base E, are pivotally connected at their lower ends to first and second cross member H-1 and H-2, and are centrally connected by transverse shaft N. *Id.* at 3:14; 3:39–47. Elongate members L and M support a pair of side walls O having horizontal plate 110 there between. *Id.* at 3:50–52; 4:55–60. Threaded rod K engages tapped bore 12, and rotation of threaded rod K causes first and second members L and M to pivot, which raises or lowers sander disc S held between support walls O. *Id.* at 3:33–34; 3:67–4:1.

b. Petitioner’s Argument and Evidence

Petitioner provides a detailed accounting of the manner in which specific portions of Wynn describe all aspects of claim 1. Pet. 33–34 (citing

Ex. 1008, 1:4–5, 3:16–30, 5:18–31, 5:36–46, Fig. 1, refs. E, L, M, O, N, F, J, 44, 46, H-1, H-2).

c. Patent Owner’s Counterarguments

Patent Owner argues that Petitioner fails to prove the unpatentability of claim 1 because Wynn fails to disclose a “desk.” PO Resp. 2–3. We do not find Patent Owner’s argument to be persuasive.

i. Desk

Patent Owner contends that Wynn is a disc sander, not a desk. PO Resp. 2. Specifically, Patent Owner contends (in entirety) that

While the Board initially found that Petitioner had demonstrated a reasonable likelihood that Wynn and Faitel anticipate (Paper No. 13 at 28, 33–34), neither Wynn nor Faitel disclose the very first element recited by the claims, “a desk,” in view of the Specification. This is a critical deficiency as the claimed invention involves a desk and all of the elements relate[d] thereto. Those elements are not disclosed or suggested in Wynn or Faitel, and therefore the same cannot anticipate the challenged Claims.

Id. at 3.

Petitioner responds that the term “desk” is found only in the preamble and does not limit claim. Reply 17. Petitioner argues that instead the term “desk” merely recites an intended use of the device. *Id.* Petitioner further argues that even if “desk” is limiting that its plain and ordinary meaning is merely “a table, frame, or case with a sloping or horizontal surface especially for writing and reading and often with drawers, compartments, and pigeonholes; or a table, counter, stand, or booth at which a person works.” *Id.* at 18. Petitioner submits that Wynn meets this definition because it is “an adjustable-height work surface on which a disk sander could be placed (Wynn).” *Id.*

As we explained above, we agree with Petitioner that the term “desk,” as it appears in the preamble, does not limit the claim. For apparatus claims, such as those in the ’336 patent, generally patentability “depends on the claimed structure, not on the use or purpose of that structure.” *Catalina Marketing*, 289 F.3d at 809. Accordingly, we do not find Patent Owner’s argument that Wynn does not disclose a “desk” persuasive.

ii. Consideration during Examination

Patent Owner argues that because the applicant overcame rejections by the Examiner based upon Wynn during prosecution, and we should defer to the Examiner’s determination that the claims distinguish Wynn.⁸ PO Resp. 6, 9–10 (citing MPEP § 706.04). To the extent that Patent Owner is arguing that, in an *inter partes* review, we are bound by the Examiner’s prior findings during the *ex parte* examination, we disagree. First, Petitioner was not a party to the Examination and is not bound by the Examiner’s *ex parte* determinations. Second, MPEP § 706.04, which is cited by Patent Owner, deals with *ex parte* examination and does not apply in an *inter partes* proceeding. Finally, and most importantly, as we explained in our Institution Decision, we determined that the Examiner materially erred in the Examiner’s consideration of Wynn, so to the extent those findings are erroneous, we decline to defer to them. *See* Dec. 15–16.

Patent Owner also makes the following argument:

Similar deficiencies appear in Grounds 2 and 5 with respect to Wynn and Chouinard. In Ground 2, the Petition aligns “shaft N”

⁸ To the extent Patent Owner still argues that we should have exercised our discretion under 35 U.S.C. § 325(d) and denied institution, PO Resp. 6 n.3, we reject that argument for the reasons explained in detail in our Decision on Institution. Dec. 8–18.

of Wynn with the claimed “transverse link” (Paper 1 at 33-34). However, the “shaft N” is not coupled to “cross members H-1/H-2” (aligned with the claimed “nut sliding rod seat”) with at least one side-support piece. As in *Faitel*, the Petition fails to identify any component which aligns with the “at least one side-support piece.”

PO Resp. 8. As best as we can understand this argument, Patent Owner seems to be asserting, not so much that Examiner is correct, but that Petitioner fails to account for limitation [1.11], which requires that the “nut sliding rod seat” be “coupled to the transverse link *with at least one side-support piece.*” Ex. 1001, 6:10–12 (emphasis added). We disagree with Patent Owner. The Petition explains how the “nut sliding rod seat” is coupled to the “transverse link” by “at least one side-support piece.” *See* Pet. 31–33; Reply 11–12. Namely, the Petition explains that element H-1 of Wynn is coupled to transverse shaft N by side-support piece M. *See id.* To the extent Patent Owner is arguing that Petitioner already identified side-support M as the “second side member,” we note that the claim only requires one “second side member” and Wynn’s apparatus has two side-support pieces identified as “M.” Patent Owner provides no reason, and we can discern none, why one of two “M” pieces does not correspond to the claimed “second side support member” and the other does not correspond to the “side support piece” recited in claim 1. Accordingly, we find that Petitioner has adequately shown that Wynn discloses this limitation.

d. Conclusion

Based on our review of the evidence of record and Petitioner’s argument, which we adopt as our own (*see In re NuVasive*, 841 F.3d at 974), and for all the reasons expressed above, we conclude that Petitioner has

established by a preponderance of evidence that claim 1 is unpatentable as anticipated by Wynn.

2. Dependent Claims 2–4, 9, 10, and 12

Claim 2 depends from claim 1 and adds the limitations of first and second “fixing pieces” that act so that, “the first fixing piece, the second fixing piece, the first guide rod, and the second guide rod form a frame.” Ex. 1001, 6:16–20. Petitioner submits that in Wynn, “cross-pieces” ref. G in Fig. 1 correspond to the claimed “fixing pieces” and the two guide rods F and the two cross-pieces G form a frame identical in structure to that claimed in Claim 2. Pet. 34.

Claim 3 depends from claim 2 and requires that, “a first end of the screw rod is connected to the first fixing piece and a second end of the screw rod is connected to the second fixing piece, and wherein the driving source is disposed at the first end of the screw rod.” Ex. 1001, 6:21–25. Petitioner submits that “it can be seen in Fig. 1 that screw J is connected to one fixing piece G at the right side (and driving mechanism 42/46 is also connected at that end of screw J), and to the second fixing piece G at the opposite end.” Pet. 34.

Claim 4 depends from claim 3 and requires that “the bottom plate is fixed to the first fixing piece and the second fixing piece.” Ex. 1001, 6:26–27. Petitioner submits that Figure 1 of Wynn shows that fixing pieces G are fixed to bottom plate E. Pet. 35.

Claim 9 depends from claim 1, and adds the limitation, “wherein the nut sliding rod seat is coupled to the first guide rod, the second guide rod, and the screw rod, and wherein the nut sliding rod seat is in threaded engagement with the screw rod for reciprocating motion along the first guide

rod and the second guide rod upon rotation of the screw rod.” Ex. 1001, 6:49–54. Petitioner refers to Figure 1 of Wynn to argue that nut sliding rod seat H-1 is coupled to screw J as well as guide rods F on either side, and that when screw J rotates H-1, which is in threaded engagement with it, moves along screw J and guide rods F. Pet. 37 (citing Ex. 1008, 3:25–38, Fig. 1).

Claim 10 depends from claim 1, and adds the limitation, “wherein the first side-support member and the second side-support member are each slidably coupled to the face plate.” Ex. 1001, 6:55–57. Petitioner contends that side-support members L and M of Wynn are slidably coupled to the face plate O at one end by rod 64 sliding in groove 66. Pet. 37.

Claim 12 depends from claim 1 and requires that each side-support member comprise a side-support piece that is slidably attached to a desktop connecting piece that is fixedly attached to the face plate on its upper end and pivotally attached to the bottom plate on its lower end. Ex. 1001, 6:66–7:6. Petitioner contends that side-support members L and M each are pivotally connected to bottom plate E via nut 34, and are slidably coupled to the face plate O at one end by rod 64 sliding in groove 66, which is fixedly attached to face plate O. Pet. 38.

Patent Owner does not argue separately that Wynn fails to anticipate claims 2–4, 9, 10, and 12. *See generally* PO Resp. (advancing arguments directed to independent claim 1 and dependent claims 5–8, 11, and 13–16). Based on our review of the evidence of record and Petitioner’s argument, which we adopt as our own (*see NuVasive*, 841 F.3d at 974), we determine that Petitioner has demonstrated by a preponderance of evidence that Wynn anticipates dependent claims 2–4, 9, 10, and 12.

3. Dependent Claims 5–8, 11, and 13–16

Claim 5 depends from claim 1, adding the limitation, “further comprising an intermediate support member, the intermediate support member configured to couple the driving mechanism to the first side-support member and the second side-support member.” Ex. 1001, 6:28–31.

Petitioner submits that if we consider “that the first and second side-support members are the two scissor-lift assemblies (L and M in Wynn’s Fig. 1), and that the driving mechanism in Wynn is screw J, then cross-bars H-1 and H-2 each act as ‘intermediate support members’ that link the driving mechanism J to the side-support members L and M as shown in Fig. 1 and described in col. 3, lines 26–38 of Wynn.” Pet. 35.

Claim 6 depends from claim 5 and requires that the intermediate support member, “further compris[es] the nut sliding rod seat configured to slide along the first guide rod and the second guide rod.” Ex. 1001, 6:32–34. Petitioner contends that “it can be seen in Wynn’s Fig. 1 that cross-bars H-1 and H-2 slide along guide rods F as required.” Pet. 35.

Claim 7 depends from claim 5 and requires that the intermediate support member, “compris[es] the nut sliding rod seat, the at least one side-support piece, and the transverse link, wherein the at least one side-support piece includes a first side-support piece coupled to the nut sliding rod seat and a second side-support piece coupled to the nut sliding rod seat.” Ex. 1001, 6:35–41. Petitioner argues that in one approach the intermediate support member of claim 7 comprises one of cross-bars H-1 and H-2, transverse link N, and at least one of side-support pieces L or M, which are connected in the manner prescribed (first side-support piece L is coupled to

the nut sliding rod seat H-1 and second side-support piece M is coupled to nut sliding rod seat H-1). Pet. 35–36.

Claim 8 depends from claim 7 and further requires that, “the first side-support piece includes a lower end pivotally connected with a first end of the nut sliding rod seat, the second side-support piece includes a lower end pivotally connected with a second end of the nut sliding rod seat, and an upper end of the first side-support piece and an upper end of the second side-support piece are fixedly connected with the transverse link.” Ex. 1001, 6:42–48. Petitioner submits that there are several ways Wynn’s Figure 1 reads on this claim. Pet. 36. For example, Petitioner submits this is disclosed where first side-support piece L is pivotally connected to nut sliding rod seat H-1 and second side-support piece M is also pivotally connected to nut sliding rod seat H-1. *Id.* Petitioner argues that both L and M have lower halves (for example, the lower right arm of L from 38 to 14 in Figure 1) that are pivotally connected to transverse link N (e.g. by nut 14). In the alternative, Petitioner further notes that rod 70 also acts as a transverse link (and there is a corresponding rod on the right, ending at pin 64), which is at the upper ends of L and M. *Id.* at 36–37.

Claim 11 depends from claim 1, and adds the limitation, “wherein the first side-support member and second side-support member each comprise a side support piece having an upper end and a lower end, wherein the upper end of each side-support piece is pivotally connected to a respective desktop connecting piece fixedly connected with the face plate and wherein the lower end of each side-support piece is pivotally connected to a transverse link.” Ex. 1001, 6:58–65. Petitioner contends that side-support members L and M each have a leg that is pivotally connected to the face plate O via

washer 60 and nut 64, and they are pivotally connected to transverse link N directly.⁹ Pet. 38.

Claims 13–16 depend from claim 12 and recite similar limitations to those introduced in claims 5–8, and Petitioner relies on its mapping of claims 5–8 to Wynn for its argument that claims 13–16 are anticipated. *See* Pet. 39.

Patent Owner argues that Petitioner has failed to show that Wynn anticipates claims 5–8, 11, and 13¹⁰–16 because “the Petition aligns several claim features with the same component.” PO Resp. 4. Patent Owner argues that “[s]uch double duty of the prior art components results in references failing to include the structural relationships recited in the Claims.” *Id.* Patent Owner argues that Petitioner has impermissibly aligned Wynn’s cross members H-1 and H-2 with both the “nut sliding seat” and “intermediate member.” Relying on *In re Robertson*, 169 F.3d 743, 744–45 (Fed. Cir. 1999), Patent Owner argues that it is improper to conflate structural elements by asserting that a single prior art feature disclosed two separate and independent claim features. *Id.* at 4–5.

⁹ Petitioner notes that there is some ambiguity in claim 11 about whether the “transverse link” referred to is the same as in claim 1 or another “transverse link.” Pet. 38. For purposes of the analysis, Petitioner assumes that the “transverse link” referred to is the same as in claim 1. *Id.* Patent Owner does not dispute that interpretation, so we apply the same interpretation for our analysis of claim 11 for all grounds.

¹⁰ Patent Owner only lists 5–8 and 14–16 in its argument (PO Resp. 4), but claim 13 is similar to claim 5 and claims 13–16 recite similar limitations to those introduced in claims 5–8, which Patent Owner argues. *See* Pet. 39. Thus, we assume that the omission of claim 13 was an oversight and include it in our discussion here for completeness.

Petitioner responds that the '336 patent describes that the “intermediate support member” is described as comprising subcomponents that are each expressly claimed as limitations in claim 1. Reply 20–21 (citing Ex. 1001, 4:16–19). Petitioner contends that

PO’s own attempted use of a doctrine of “no double duty,” citing *Robertson*, cannot function as PO urges, for if it did claim 5 would be requiring each of the subcomponents of the intermediate support member to be doing double-duty, since each of them is already part of “the desk of claim 1,” which is expressly also part of claim 5.

Id. at 21.

Patent Owner is generally correct that separate limitations are “distinct component[s]” of the patented invention. *Becton, Dickinson & Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (citing *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004)). In addition, “[i]n the absence of any evidence to the contrary, we must presume that the use of . . . different terms in the claims connotes different meanings.” *CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000). Although the use of two terms in a claim usually requires that they connote different meanings, it does not necessarily require that they refer to two different structures. *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006). Instead, “[t]he prosecution history, specification, comparison with other claims in the patent, and other evidence may require that two terms in a claim refer to different structures, . . . but preserving claim integrity does not.” *Id.*

Beginning with the claim language, it becomes apparent why Patent Owner’s “double duty” argument is not persuasive. Claim 5, which depends from claim 1, introduces the “intermediate member” limitation and recites

that “the intermediate support member configured to couple the driving mechanism to the first side-support member and the second side-support member.” Ex. 1001, 6:28–31. Claims 6 and 7 inform us that the “intermediate member” further comprises “the nut sliding rod seat,” “the at least one side-support piece,” and “the transverse link.” Thus, claims 6 and 7 confirm that the “intermediate member,” rather than necessarily referring to a separate structure, can refer collectively to the nut sliding rod seat and transverse link together (along with possibly other components).

This interpretation is further supported by the Specification, which explains that

the intermediate support member 130 comprises a nut sliding rod seat 131, a first side-support piece 132, a second side-support piece 133 and a transverse link 134, wherein the nut sliding rod seat 131 is threaded on the first guide rod 123, the second guide rod 124 and the screw rod 125 of the driving mechanism 120 . . .

Ex. 1001, 4:16–24; *see also id.* at 2:27–30 (“As an improvement to the invention, the intermediate support member comprises a nut sliding rod seat, a first side-support piece, a second side-support piece and a transverse link . . .”). The Specification also explains that “[t]he invention adopts a frame-shaped driving mechanism and a frame-shaped intermediate support member, and transfers the motive power via the frame-shaped intermediate support member.” *Id.* at 4:56–59. Thus, the Specification suggests that the “intermediate support member” is the name given to the collection of already recited elements that serve to “transfer[] the motive power” from the driving mechanism to the face plate. *Id.* It does not suggest that the claim terms require separate structures. *See Powell v. Home Depot U.S.A., Inc.*, 663 F.3d 1221, 1231–32 (Fed. Cir. 2011) (finding the terms “cutting box” and “dust collection structure” did not require separate structures in the

context of the claims and specification); *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1303 (Fed. Cir. 2011) (“The claims and the specifications indicate that the ‘needle holder’ and ‘retainer member’ need not be separately molded pieces.”); *Linear Tech. Corp. v. Int’l Trade Com’n*, 566 F.3d 1049, 1054–56 (Fed. Cir. 2009) (finding “second circuit” and “third circuit” recited in claims did not require separate circuits); *see also NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1310 (Fed. Cir. 2005) (noting that the asserted claim language did not support a limitation requiring that the claimed “RF receiver” and “destination processor” be separate and distinct).

Here, because the claims and specification allow overlap between the various structures identified in claim 1 and the claimed “intermediate support member” in claims 5–8, we see nothing wrong with Petitioner’s mapping that identifies cross members H-1 and H-2 as satisfying both the “nut sliding rod seat” and “intermediate support member.” *See* Pet. 35–37. Patent Owner gives no other explanation why Petitioner’s mapping is incorrect. We have reviewed Petitioner’s mapping and find that Petitioner has shown by a preponderance of the evidence that Wynn discloses the limitations of claims 5–8 and 13–16, and therefore, anticipates claims 5–8 and 13–16.

Patent Owner provides no explanation of why claim 11 is included in this argument. *See* PO Resp. 4–5. We discern no potential “double duty” problem as with the other claims in this group. We have reviewed Petitioner’s allegations with respect to claim 11, and find that Petitioner has shown by a preponderance of the evidence that claim 11 is anticipated by Wynn.

4. Summary

For all the reasons expressed above, we conclude that Petitioner has established by a preponderance of evidence that Wynn anticipates claims 1–16.

F. CLAIMS 1–18:

ANTICIPATION/OBVIOUSNESS BASED ON LAUDADIO AND OBVIOUSNESS
BASED ON LAUDADIO, CHOUINARD, AND WYNN

Petitioner argues that Laudadio by itself anticipates or renders claims 1–18 unpatentable as obvious, or that Laudadio in combination with either Chouinard, or Wynn, or both renders claims 1–18 obvious. Pet. 21–31, 39–44. We consider these grounds together because of the extensive overlap between them. Patent Owner presents arguments that Petitioner’s challenge to independent claim 1 fails, and further argues that claims 5–8, 11, and 14–16 have for additional reasons not been shown unpatentable. *See* PO Resp. 2, 4–5, 10–12 (not presenting arguments solely directed to dependent claims 2–4, 10, 12, 17, and 18). As explained below, we determine that Petitioner has proven by a preponderance of evidence that Laudadio by itself and Laudadio in combination with either Chouinard or Wynn or both renders claims 1–18 unpatentable as obvious. Petitioner has not shown by a preponderance of the evidence Laudadio anticipates claims 1–18.

1. Independent Claim 1

Petitioner argues that Laudadio anticipates or renders obvious claim 1. Pet. 21–25. Petitioner further contends that claim 1 is obvious in view of Laudadio, Chouinard, and Wynn. Pet. 39–42.

a. Laudadio

Laudadio is titled “Motorized, Height Adjustable Desktop System.” Ex. 1005, [54]. Laudadio discloses a motorized desktop system. *Id.* at 2:14.

Figure 2, reproduced below, is an exploded view of a frame assembly of a desktop system. *Id.* at 1:46–47.

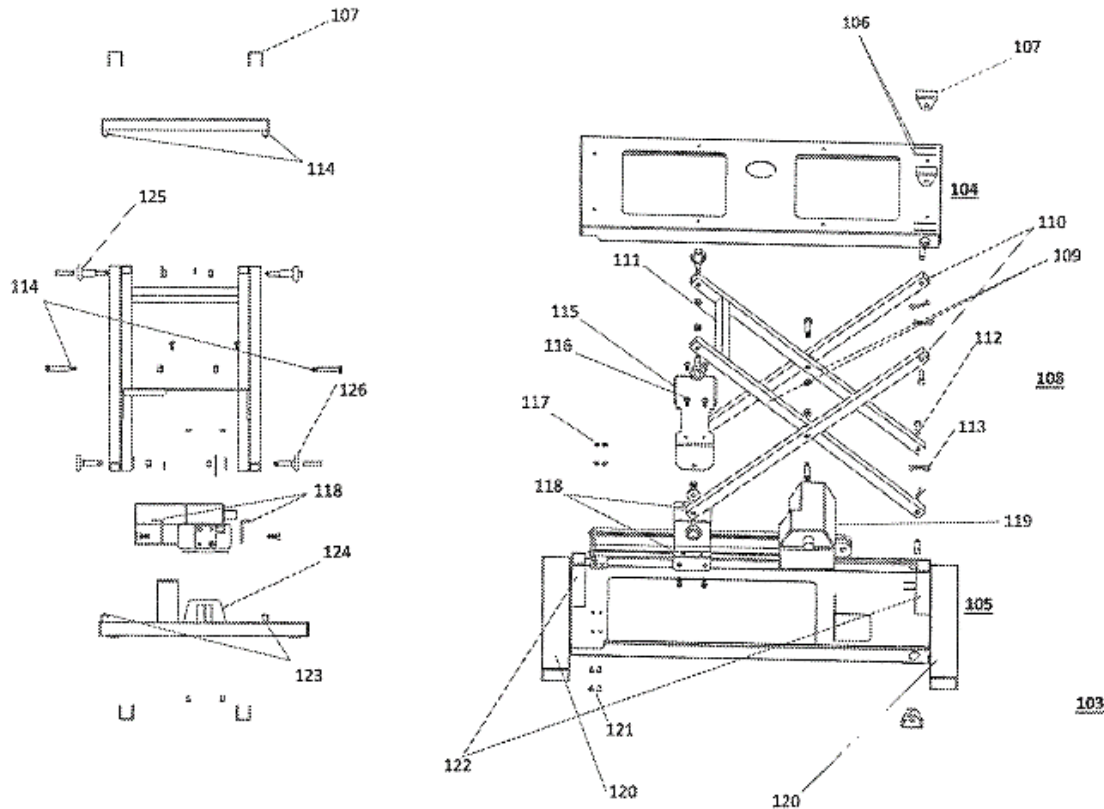


FIG. 2

Figure 2 shown above depicts frame assembly 103 that together with surface assembly 102 forms the desktop system of Figure 1. *Id.* at 2:13–15. Frame assembly 103 uses scissor assembly 108 that allows frame assembly 103 to be adjusted to varying heights. *Id.* at 2:15–18. Scissor assembly 108 includes a pair of inner scissor arms 109 and a pair of outer scissor arms 110 that form a crisscross shape. *Id.* at 2:29–31. “Reinforcer tube 111 is attached at one end of inner scissor arms 109 to maintain a set distance between the arms, to allow the arms to move together in parallel,” and to “give the system stability when the frame assembly is raised into an elevated position.” *Id.* at 2:33–37. Roller wheels 125 and 126 enable scissor arms

109 and 110 to move within U-shaped tracks 114 and 123 that are provided in upper and lower trays 104 and 105. *Id.* at 2:41–43; 2:56–57. “Carrier bracket 115 is provided at one end of scissor arms 109 to transfer the force of electric motor 119 to scissor arms 109 and 110.” *Id.* at 2:43–45.

Specifically, motor 119 powers a linear actuator with carrier plate 115 connected to a top of the actuator so that ends of scissor arms 109 that are attached to carrier plate 115 move along U-shaped tracks 114 and 123, which in turn moves the scissor arms in either horizontal direction, thereby raising and lowering upper tray 105. *Id.* at 3:59; 4:9–14.

b. Chouinard

Chouinard is titled “Adjustable Stand for Monitor and Keyboard.” Ex. 1007, [54]. Chouinard discloses an adjustable stand composed of two components, a lower component and an upper component, where the two components can be opened and closed by adjusting the elevation of the upper component relative to the lower component. *Id.* at 2:24–29. Figure 3, reproduced below, shows an exploded perspective view of the adjustable stand.

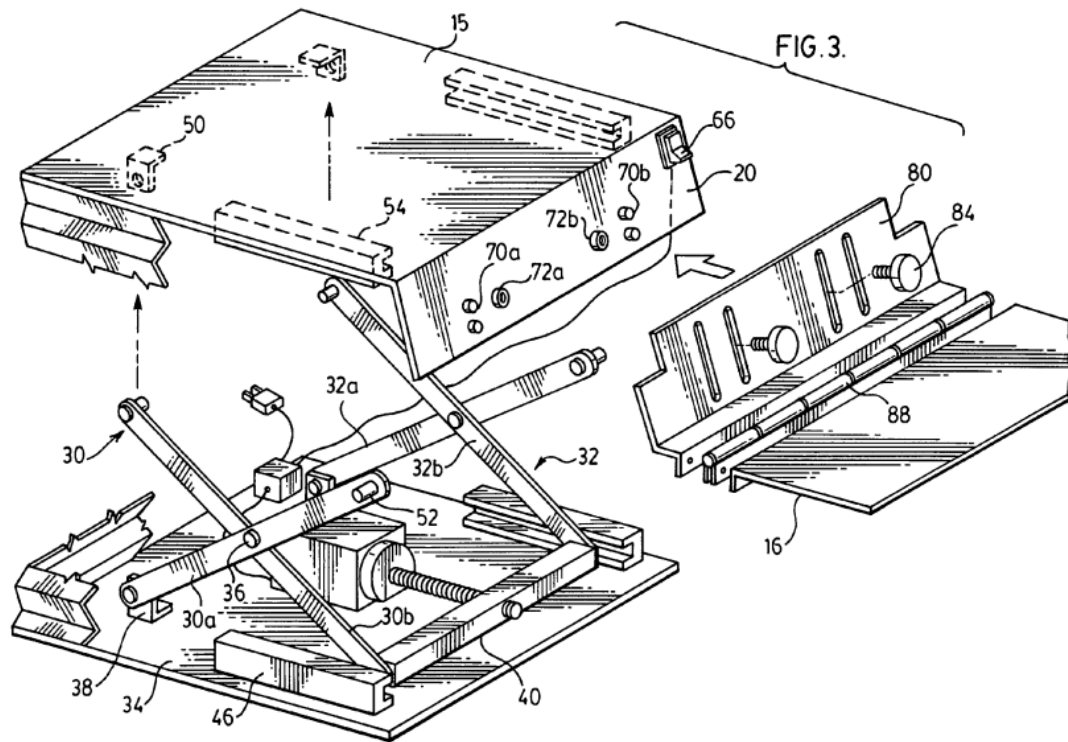


Figure 3 shows two pairs of spaced apart arms (labeled 30, 32) that extend upwardly from lower wall 34 of the adjustable stand. *Id.* at 2:46–48. Each pair of arms is pivotally interconnected at a point intermediate their ends by means of pin 36. *Id.* at 2:48–50. With respect to arms 30, the lower end of arm 30a is pivotally connected to ear 38. *Id.* at 2:51–52. With respect to the lower end of arm 30b, it is interconnected to the lower end of arm 32b by means of horizontally extending bar 40 which extends between the two ends. *Id.* at 2:52–53. Pins 42a, b extend outwardly from opposite ends of the bar and the pins pass through openings in the lower ends of the two arms 30b, 32b and into a track 44 formed in horizontally extending channel 46 along which the pin is free to slide. *Id.* at 2:53–59. Both the ear and channel are bolted to the upper surface of the lower wall 34 of the lower component. *Id.* at 2:59–61.

The upper end of arm 30b is pivotally connected to ear 50 while the upper end of arm 30a has an outwardly extending pin 52 which runs in a horizontally extending track formed in channel 54. *Id.* at 2:62–65. Both ear 50 and channel 54 are bolted to the lower surface of the upper wall 15 of the upper component of the adjustable stand. *Id.* at 2:65–67. The other pair of arms 32 are attached to the lower and upper walls of the adjustable stand in the same manner. *Id.* at 3:1–2. The tracks in the two channels attached to the lower wall are parallel to each other as are the tracks in the two channels attached to the upper wall. *Id.* at 3:2–5. All four tracks are parallel to one another. *Id.* at 3:5–6.

“Bar 40 extends between and interconnects the lower ends of arms 30b and 32b.” *Id.* at 3:7–8. “[T]hreaded opening 60 is formed centrally of the ends of the bar for receipt of threaded spindle 62. *Id.* at 3:8–10. The spindle is rotated by electric motor or prime mover 64 which is bolted to the lower wall of the stand.” *Id.* at 3:10–11. “The spindle and motor are positioned such that the longitudinal axis of the spindle is oriented parallel to the tracks in all four channels.” *Id.* at 3:11–14. “The motor operates both forward and in reverse to cause the spindle to rotate selectively clockwise or counterclockwise.” *Id.* at 3:14–16.

c. Petitioner’s Argument and Evidence

Petitioner provides a detailed accounting of the manner in which specific portions of Laudadio describe all aspects of claim 1. Pet. 22–25 (citing Ex. 1005, Fig. 1 (ref. 104), Fig. 2 (refs. 101, 104, 105, 109, 110, 111, 115, 119 123), Figs. 5–8, 2:33–37, 3:66–67, 4:15–19). Specifically, Petitioner submits that “the ‘bottom plate’ of Claim 1 is taught by Laudadio’s lower tray (reference number 105 in Fig. 2), and the “‘face plate’

is the upper tray 102, which is coupled to the first (left) side-support member 109/110 and the second (right) side-support member 109/110; both side-support members are also coupled to the lower tray 109, as shown in Laudadio's Fig. 2." *Id.* at 22. Petitioner argues that Laudadio teaches a transverse link as shown in reinforcer tube 111 in Fig. 2 of Laudadio. *Id.*; *see also* Ex. 1005, 2:29–37 (describing the relationships between side-support members 109/110 and transverse link 111).

With respect to the driving mechanism, Petitioner asserts that Laudadio teaches a driving mechanism "equivalent" to that claimed in claim 1. Pet. 22. Specifically, Petitioner identifies the first and second guide rods are taught by roller wheel tracks 123 (one on each side), which allow roller wheels at the lower ends of side-support pieces 110 (again, one on each side); the lower ends are also attached to moving plate/carrier bracket 115 (which Petitioner asserts reads on the "nut sliding seat"), which moves toward or away from motor/linear actuator driver 119 along the linear actuator. *Id.* at 22–23. Petitioner notes that this actuator can be of any type known in the art, including screw type drives as shown in Chouinard, Wynn, and Faitel. *Id.* at 23 (citing Ex. 1005, 4:15–19).

Petitioner argues that, in Laudadio, the nut driving rod seat is taught by the carrier bracket 115 and/or the moving plate described as moving along the top of linear actuator 119; it is attached to side-support pieces 110 which, via attached roller wheels that move in roller wheel tracks 123, allow the side-support members (scissor-arms) 109 and 110 to "open" and "close," moving face plate "down" and "up" respectively, relative to the bottom plate, thus teaching the final wherein clause of Claim 1. *Id.*

Petitioner contends that

Since Laudadio does not expressly disclose a “screw rod” as the means of moving carrier bracket 115, but shows a single type of linear actuator and states that other types of linear actuators can be used—which necessarily includes screw-type linear actuators such as that shown in Chouinard, Petitioner asserts Laudadio does teach the screw rod limitation of Claim 1 but, alternatively, it would have been obvious to adopt the well-known screw-type drive of Chouinard, Wynn and Faitel to achieve the same effect as that achieved by the linear actuator disclosed in Laudadio.

Id.

With respect to the obviousness ground of Laudadio, Chouinard, and Wynn, Petitioner argues that, “in the event that Laudadio is construed as not using a screw-type drive,” Chouinard teaches

a driving mechanism using a screw rod (Fig. 4, ref. 62) parallel to the first guide rod (track 123 in Laudadio; channels 46 in Fig. 1 of Chouinard); a drive source configured to rotate the screw rod (motor 64 in Fig. 6); and that “the drive mechanism is configured to rotate the screw rod moving the nut rod sliding seat to raise and lower the face plate” (same mechanism as in Laudadio, but using a screw drive in Chouinard to move bar 40 toward or away from motor 64 to raise or lower the face plate respectively).

Pet. 40–41.

As for the motivation to combine, Petitioner notes that “Chouinard and Laudadio are both directed to adjustable-height desktops that are electrically operated,” and “Laudadio expressly contemplated using other types of linear actuators (such as the screw type taught by Chouinard; see col. 4, lines 15-19 of Laudadio).” *Id.* at 41. Petitioner argues that “there was a clear motivation to combine Chouinard with Laudadio to provide a screw-type drive mechanism while keeping the lateral structural stability of Laudadio (provided by reinforcement tube 111).” *Id.*

Similarly, Petitioner also notes that

Wynn discloses a screw rod J parallel to the first guide rod F; a driving source 46 via coupling 42 configured to rotate the screw; such that “the drive mechanism is configured to rotate the screw rod moving the nut rod sliding seat to raise and lower the face plate”, as in Laudadio.

Pet. 41.

Petitioner submits that “[l]ike Chouinard and Laudadio, Wynn is directed to the provision of adjustable-height work surfaces generally using a scissor-type lifting means.” *Id.* Petitioner argues that a person of ordinary skill would have been motivated to combine Wynn with Laudadio for the same reasons articulated above for the combination of Laudadio and Chouinard. *Id.* at 41–42.

d. Patent Owner’s Counterarguments

Patent Owner argues that Petitioner fails to prove the unpatentability of claim 1 for two reasons. PO Resp. 2, 10–12. More specifically, Patent Owner argues that Petitioner fails to show anticipation because it admits that Laudadio does not disclose a screw drive. *See id.* at 2. As for the asserted obviousness claim, Patent Owner also argues that an ordinarily skilled artisan would not have been motivated to modify Laudadio or combine Laudadio with Chouinard or Wynn as Petitioner contends. *Id.* at 10–12. We agree with Patent Owner that Petitioner has failed to show that Laudadio anticipates any claim, but we are not persuaded that Petitioner has failed to show an adequate motivation to combine the cited references.

i. Anticipation by Laudadio

Patent Owner argues that Laudadio is not anticipatory because Laudadio does not disclose a screw rod. PO Resp. 2. According to Patent

Owner, Laudadio discloses a linear actuator, and Petitioner does not provide evidence that a linear actuator “necessarily” includes a screw rod. *Id.*

As we explained above, Petitioner admits that Laudadio does not expressly disclose a screw rod. Pet. 23. Moreover, in the Reply, Petitioner does not contend that Laudadio expressly or inherently discloses a screw rod. *See generally* Reply.

Laudadio discloses that the “[a]ctuator can be of a number of different types of actuators, for example, but without limitation, a linear track actuator or a linear telescopic rod actuator. One notable feature of this exemplary embodiment in accordance with this invention is that different types of actuators can be used.” Ex. 1005, 4:15–19. We agree Patent Owner’s argument that a linear actuator does not necessarily include a screw rod, so Petitioner has not met its burden of showing that Laudadio anticipates. *See Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (noting “differences between the prior art reference and a claimed invention, however slight, invoke the question of obviousness, not anticipation” and “it is not enough [for anticipation] that the prior art reference discloses part of the claimed invention, which an ordinary artisan might supplement to make the whole”).

ii. Motivation to Combine for Obviousness based on Laudadio

Patent Owner argues that Petitioner “provides no expert support or factual evidence as to the motivation for combining such references, instead citing to an unknown (and unnamed) person of ordinary skill in the art.” PO Resp. 10. Patent Owner asserts that “Petitioner’s arguments ‘amount to nothing more than unsupported assertions about the common knowledge of skilled artisans and what they would have considered desirable.’” *Id.* at 11

(quoting *Google Inc. v. Koninklijke Philips N.V.*, IPR2017-00409, Paper 10, at 13–14 (PTAB June 5, 2017)). Patent Owner contends that “[C]onclusory statements’ alone are insufficient and, instead, the finding must be supported by a ‘reasoned explanation.’” *Id.* (quoting *Nuvasive*, 842 F.3d at 1383).

An obviousness challenger “must demonstrate . . . that a skilled artisan would have had reason to combine [or modify] the teaching of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success from doing so.” *Redline Detection, LLC v. Star Envirotech, Inc.*, 811 F.3d 435, 449 (Fed. Cir. 2015) (quoting *PAR Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1193 (Fed. Cir. 2014)). A reason “to modify a reference can come from the knowledge of those skilled in the art, from the prior art reference itself, or from the nature of the problem to be solved.” *SIBIA Neurosciences, Inc. v. Cadus Pharm. Corp.*, 225 F.3d 1349, 1356 (Fed. Cir. 2000).

Those standards follow the Supreme Court’s various formulations in *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007). “In *KSR*, the Supreme Court criticized a rigid approach to determining obviousness based on the disclosures of individual prior-art references, with little recourse to the knowledge, creativity, and common sense that an ordinarily skilled artisan would have brought to bear when considering combinations or modifications.” *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013). “[T]he Court required an analysis that reads the prior art in context, taking account of ‘demands known to the design community,’ ‘the background knowledge possessed by a person having ordinary skill in the art,’ and ‘the inferences and creative steps that a person of ordinary skill in the art would employ.’” *Id.* (quoting *KSR*, 550 U.S. at 418). We “must ask whether the

[claimed] improvement is more than the predictable use”—a “predictable variation”—“of prior art elements according to their established functions,” considering whether more is involved than “the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement.” *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344 (Fed. Cir. 2017) (quoting *KSR*, 550 U.S. at 417). “[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417. We also “should consider a range of real-world facts to determine ‘whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.’” *Intercontinental*, 869 F.3d at 1344 (quoting *KSR*, 550 U.S. at 418).

We disagree with Patent Owner’s contention that Petitioner’s motivation to combine is insufficient. Here, Petitioner identified an explicit teaching in Laudadio that

[The] Actuator can be of a number of different types of actuators, for example, but without limitation, a linear track actuator or a linear telescopic rod actuator. One notable feature of this exemplary embodiment in accordance with this invention is that different types of actuators can be used.

Ex. 1005, 4:15–19. We agree with Petitioner that this statement from Laudadio contains an explicit teaching that would motivate a person of ordinary skill to look to other options for actuating the device. *See SIBIA Neurosciences*, 225 F.3d at 1356.

Petitioner also provided evidence of strikingly similar devices to Laudadio—Chouinard, Wynn, and Faitel—that used a screw rod drive to

perform exactly the same function as the linear actuator in Laudadio—raise and lower the face plate of the device, in a similar way, with a reasonable expectation of success. *See* Exs. 1005, 1007, 1008, 1009. Whether termed a “simple substitution” or the rearrangement of known elements to achieve a predictable result, we find this evidence and reasoning sufficient to meet Petitioner’s burden to show a motivation to combine Laudadio with the teachings of Chouinard or Wynn or the knowledge of a person of skill in the art.¹¹ *See Realtime Data LLC v. Iancu*, 912 F.3d 1368, 1374 (Fed. Cir. 2019) (finding a motivation to combine sufficient where “a person of ordinary skill in the art would have looked to [the prior art reference] because [the reference] is ‘well known,’ . . . “share[s] striking similarities” to [other references] techniques, and [the other reference] itself ‘suggests that a wide variety of adaptive compression algorithms could be used and encourages a person having ordinary skill in the art to turn to ‘well known’ algorithms such as [the references].” Patent Owner offers no evidence to the contrary to rebut Petitioner’s showing. “[W]hen [as we find here] a patent simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious.” *See KSR*, 550 U.S. at 417.

For all these reasons, we are persuaded that Laudadio’s suggestion to use alternative devices in place of its actuator would have motivated an ordinarily skilled artisan to replace Laudadio’s actuator with the well-known screw rod drive taught in either Chouinard or Wynn. *See Icon Health &*

¹¹ Patent Owner argues that Petitioner cites to “an unknown (and unnamed) person of ordinary skill in the art.” However, Petitioner has offered a definition of the person of ordinary skill. *See* Pet. 14–15.

Fitness, Inc. v. Strava, Inc., 849 F.3d 1034, 1045 (Fed. Cir. 2017) (finding the rationale of the “mere ‘combination of familiar elements’ . . .” to be sufficient). We also find persuasive and adopt as our own Petitioner’s argument, which is supported by the evidence that Petitioner cites, that an ordinarily skilled artisan would have had a reasonable expectation of success in combining teachings. *See* Pet. 22–24, 41–42; Reply 7–10.

e. Conclusion

For all the reasons expressed above, we conclude that Petitioner has established by a preponderance of evidence that Laudadio alone and the combined teachings of Laudadio, Chouinard, and Wynn render claim 1 unpatentable as obvious. Petitioner has not shown by a preponderance of the evidence that Laudadio anticipates claim 1.

2. Dependent Claims 2–4, 9, 10, 12, 17, and 18

Claim 2 depends from claim 1 and adds the limitations of first and second “fixing pieces” that act so that, “the first fixing piece, the second fixing piece, the first guide rod, and the second guide rod form a frame.” Ex. 1001, 6:16–20. Petitioner submits that Laudadio teaches welded tubes 120 and stop tubes 122 at each end of bottom plate 105 each act as fixing pieces (thus teaching “first fixing piece” and “second fixing piece,” which provide rigidity and operate, with guide rods 123, to form a rectangular frame that provides structural rigidity for the driving mechanism and the scissor-lift mechanism of Laudadio. Pet. 25–26. Alternatively, Petitioner identifies “flange 124 is provided on the lower tray to secure the back of the motor 119” (Ex. 1005, 2:54–55), thus acting as one of the fixing points, with the leftmost stop tube 122 acting as the other fixing point. Pet. 26.

Claim 3 depends from claim 2 and requires that, “a first end of the screw rod is connected to the first fixing piece and a second end of the screw rod is connected to the second fixing piece, and wherein the driving source is disposed at the first end of the screw rod.” Ex. 1001, 6:21–25. Petitioner submits that “Laudadio teaches that each end of screw rod/linear actuator is attached to one of the fixing pieces (see Laudadio, Fig. 2: left and right ends of the rod holding linear actuator 119 are attached to stop tubes 122, or to one stop tube 122 and to flange 124).” Pet. 26.

Claim 4 depends from claim 3 and requires that “the bottom plate is fixed to the first fixing piece and the second fixing piece.” Ex. 1001, 6:26–27. Petitioner identifies the disclosure in Fig. 2 and col. 2, lines 49–55 that first and second fixing points are fixed to the bottom plate (lower tray) 105. Pet. 26.

Claim 9 depends from claim 1, and adds the limitation, “wherein the nut sliding rod seat is coupled to the first guide rod, the second guide rod, and the screw rod, and wherein the nut sliding rod seat is in threaded engagement with the screw rod for reciprocating motion along the first guide rod and the second guide rod upon rotation of the screw rod.” Ex. 1001, 6:49–54. Petitioner contends that “[t]aking linear actuator shaft to be a screw rod and carrier block 115 as the nut sliding rod seat as before, the carrier block is threadedly engaged with carrier block 115, which moves in reciprocal motion (toward and away from motor 119); carrier block 115 is also slidably coupled to the first and second guide rods 123 (via roller wheels 125).” Pet. 28–29.

Claim 10 depends from claim 1, and adds the limitation, “wherein the first side-support member and the second side-support member are each

slidably coupled to the face plate.” Ex. 1001, 6:55–57. Petitioner identifies Laudadio Fig. 2 as teaching that “side-support pieces 109 are slidably coupled to the face plate 104 by roller wheels 125 (*see also* col. 2, lines 56–61).” Pet. 29.

Claim 12 depends from claim 1 and requires that each side-support member comprise a side-support piece that is slidably attached to a desktop connecting piece that is fixedly attached to the face plate on its upper end and pivotally attached to the bottom plate on its lower end. Ex. 1001, 6:66–7:6. Petitioner contends that side-support pieces 109 teach the required limitation. In particular, Petitioner asserts that Laudadio teaches that “side-support pieces 109 are slidably attached at their upper end to face plate 104 by roller wheels 125 running in roller wheel tracks 114, and they are pivotally attached to bottom plate 105 at their lower end by clevis pins 112 and cotter pins 113.” Pet. 30.

Claim 17 depends from claim 1 and adds the limitation that the driving source is a motor. Ex. 1001, 8:9–10. Petitioner submits that Laudadio teaches that “the driving source comprises a motor”, at least in Fig. 2, ref. 119 and in col. 2, lines 43-48, which disclose a motor 119. Pet. 30.

Claim 18 depends from claim 1 and adds the limitation, “a keyboard plate, the keyboard plate coupled with a first desktop connecting piece and a second desktop connecting piece, wherein the first desktop connecting piece and the second desktop connecting piece are fixedly connected to the face plate.” Ex. 1001. 8:11–17. Petitioner submits that Laudadio teaches a keyboard plate. *Id.* at 30–31 (citing Ex. 1005, Fig. 3, ref. 128; 2:62–3:13).

Patent Owner does not argue separately that Laudadio or the combination of Laudadio, Chouinard, and Wynn fails to render claims 2–4, 9, 10, 12, 17, and 18 unpatentable as obvious. *See generally* PO Resp. (advancing arguments directed to independent claim 1 and dependent claims 5–8, 11, and 13–16). Based on our review of the evidence of record and Petitioner’s argument, which we adopt as our own (*see NuVasive*, 841 F.3d at 974), we determine that Petitioner has demonstrated by a preponderance of evidence that both Laudadio by itself, and Laudadio in combination with Chouinard and Wynn renders dependent claims 2–4, 9, 10, 12, 13, 17, and 18 unpatentable as obvious.

3. Dependent Claims 5–8, 11, and 13–16

Claim 5 depends on claim 1, adding the limitation, “further comprising an intermediate support member, the intermediate support member configured to couple the driving mechanism to the first side-support member and the second side-support member.” Ex. 1001, 6:28–31. Petitioner submits that the intermediate support member in Laudadio comprises at least the lower portions of each side-support piece 110; each of these is pivotally attached at its lower point to carrier block/nut sliding rod seat 115 and is attached at its midpoint to side-support pieces 109 (thus jointly forming each of the two scissor-arm lifting mechanisms or side-support members). Pet. 26–27. Petitioner argues that side-support pieces 110 at least read on the intermediate support member and its required function of coupling the driving mechanism to the corresponding side-support pieces 109, as required by Claim 5. *Id.*

Claim 6 depends from claim 5 and requires that the intermediate support member, “further compris[es] the nut sliding rod seat configured to

slide along the first guide rod and the second guide rod.” Ex. 1001, 6:32–34. Petitioner contends that in Laudadio, roller wheels 126 move within roller wheel tracks 123, which act as the first and second guide rods. Roller wheels 126 are attached to carrier block/nut sliding rod seat 115 and to side-support pieces 110, thus Laudadio teaches that the intermediate support member “further comprises the nut sliding rod seat configured to slide along the first guide rod and the second guide rod.” Pet. 27.

Claim 7 depends from claim 5 and requires that the intermediate support member, “compris[es] the nut sliding rod seat, the at least one side-support piece, and the transverse link, wherein the at least one side-support piece includes a first side-support piece coupled to the nut sliding rod seat and a second side-support piece coupled to the nut sliding rod seat.” Ex. 1001, 6:35–41. Petitioner argues that In Laudadio, the relevant side-support pieces are scissor arms 110, at least from their connection to carrier block 115 to their connection to reinforcement tube/transverse link 111, and so the intermediate support member of Claim 7 is taught in Laudadio by transverse link 111, first and second side-support pieces 110, and nut sliding rod seat/carrier block 115, as required. Pet. 27–28.

Claim 8 depends from claim 7 and further requires that, “the first side-support piece includes a lower end pivotally connected with a first end of the nut sliding rod seat, the second side-support piece includes a lower end pivotally connected with a second end of the nut sliding rod seat, and an upper end of the first side-support piece and an upper end of the second side-support piece are fixedly connected with the transverse link.” Ex. 1001, 6:42–48. Petitioner submits that Laudadio teaches that each side-support piece is pivotally connected to the nut sliding rod seat/carrier block 115 at

one end and fixedly attached to the transverse link 111 at an upper end (from the perspective of its role as a part of the intermediate support member, each side-support piece comprises a lower portion of side-support piece 110 and a portion of the corresponding side-support piece 109 connected at its upper end to transverse link 111, and the connection to 111 is fixed rather than pivotal). Pet. 28.

Claim 11 depends from claim 1, and further requires that “wherein the first side-support member and second side-support member each comprise a side-support piece having an upper end and a lower end, wherein the upper end of each side-support piece is pivotally connected to a respective desktop connecting piece fixedly connected with the face plate and wherein the lower end of each side-support piece is pivotally connected to a transverse link.” Ex. 1001, 6:58–65. Petitioner argues that side-support pieces 109 each are pivotally connected to the face plate 104 via roller wheels 125, and they are connected to transverse link 111 directly. Pet. 29.

Claims 13–16 depend from claim 12 and recite similar limitations to those introduced in claims 5–8 respectively, and Petitioner relies on its mapping of Laudadio to claims 5–8 for its argument that claims 13–16 are obvious. *See* Pet. 30.

Patent Owner argues that Petitioner has failed to show that Laudadio accounts for the limitations of claims 5–8 and 13¹²–16 because “the Petition aligns several claim features with the same component.” PO Resp. 4. Patent

¹² Patent Owner only lists 5–8 and 14–16 in its argument (PO Resp. 4), but claim 13 is similar to claim 5 and claims 13–16 recite similar limitations to claims 5–8, which Patent Owner argues. *See* Pet. 39. Thus, we assume that the omission of claim 13 was an oversight and include it in our discussion here for completeness.

Owner argues that “[s]uch double duty of the prior art components results in references failing to include the structural relationships recited in the Claims.” *Id.* With respect to Laudadio, Patent Owner argues that Petitioner has impermissibly aligned scissor arms 110 with both the “side-support member” and the “intermediate support member.” *Id.* Relying on *In re Robertson*, 169 F.3d 743, 744–45 (Fed. Cir. 1999), Patent Owner argues that it is improper to conflate structural elements by asserting that a prior art feature disclosed two separate and independent claim features. *Id.* at 4–5.

For the reasons given in detail in Part II.E.3 above with respect to anticipation of claims 5–8 and 13–16 by Wynn, we disagree with Patent Owner that Petitioner’s mapping of the claims on Laudadio is deficient. Here, because the claims and specification allow overlap between the various structures identified in claim 1 and the claimed “intermediate support member” in claims 5–8, we see nothing wrong with Petitioner’s mapping that identifies scissor arms 110 with both the “side-support member” of claim 1 and the “intermediate support member” of claim 5. *See* Pet. 26–28. Patent Owner gives no other explanation why Petitioner’s mapping for these claims is incorrect. We have reviewed Petitioner’s mapping and find that Petitioner has shown by a preponderance of the evidence that Laudadio and the combination of Laudadio, Chouinard, and Wynn teach the limitations of claims 5–8 and 13–16, and therefore, renders claims 5–8 and 13–16 obvious.

4. Summary

For all the reasons expressed above, we conclude that Petitioner has established by a preponderance of evidence that the Laudadio and the

combination Laudadio, Chouinard, and Wynn render claims 1–18 unpatentable as obvious.

G. REMAINING GROUNDS

Having determined that Petitioner establishes by a preponderance of the evidence that Wynn anticipates claims 1–16, and that the subject matter of claims 1–18 would have been obvious over Laudadio alone or in combination with Chouinard and Wynn, we do not address Petitioner’s additional grounds challenging claims 1–18.¹³ *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (nonprecedential) (“We agree that the Board need not address [alternative grounds] that are not necessary to the resolution of the proceeding.”).

III. CONCLUSION¹⁴

In summary,

Claim(s)	35 U.S.C. §	Reference(s)	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–16	102	Wynn	1–16	

¹³ Petitioner’s alternative obviousness ground of Chouinard in view of Laudadio or Wynn or both begins with Chouinard and proposes modifying Chouinard in view of Laudadio or Wynn, we find it is necessary to reach this alternative obviousness argument as expressed above.

¹⁴ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this

Claim(s)	35 U.S.C. §	Reference(s)	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–18	102	Laudadio		1–18
1–18	103	Laudadio	1–18	
1–18	103	Laudadio, Chouinard, Wynn	1–18	
1–16	103	Wynn ¹⁵		
1–4, 9– 12, 17	102	Faitel		
1–4, 9– 12, 17	103	Faitel		
1–18	103	Chouinard, Laudadio, Wynn		
Overall Outcome			1–18	

decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. §§ 42.8(a)(3), (b)(2).

¹⁵ For the reasons explained above, we do not reach this and the following grounds.

IV. ORDER

For the reasons given, it is:

ORDERED, based on a preponderance of evidence, that claims 1–18 of U.S. Patent 10,159,336 B2 are *unpatentable* as set forth above; and

FURTHER ORDERED because this is a final written decision, the parties to this proceeding seeking judicial review of our Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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