

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIFECORE FITNESS, INC. d/b/a ASSAULT FITNESS,
Petitioner,

v.

WOODWAY USA, INC.,
Patent Owner.

IPR2023-00843
Patent 10,561,884 B2

Before MEREDITH C. PETRAVICK, NEIL T. POWELL, and
AMEE A. SHAH, *Administrative Patent Judges*.

PETRAVICK, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background and Summary

LifeCore Fitness, Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 30–34, 37–54, 57, and 59 of U.S. Patent No. 10,561,884 B2 (Ex. 1001, “the ’884 patent”). Paper 2 (“Pet.”). Woodway

USA, Inc. (“Patent Owner”) file a Preliminary Response. Paper 5 (“Prelim. Resp.”).

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the petition “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

After considering the Petition, the Preliminary Response, and the evidence of record, we determine the information presented shows a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one of challenged claims 30–34, 37–54, 57, and 59 of the ’884 patent. Accordingly, we institute an *inter partes* review of all challenged claims of the ’884 patent on the grounds asserted in the Petition.

B. Real Parties in Interest

Petitioner identifies LifeCore Fitness, Inc. d/b/a Assault Fitness as the real party in interest. Pet. vi. Patent Owner identifies Woodway USA, Inc. as the real party in interest. Paper 4, 2.

C. Related Matters

The parties identify the following related court proceedings:

Woodway USA, Inc., v. LifeCore Fitness, Inc. d/b/a Assault Fitness, Case No. 3:22-cv-00492 (S.D. Cal.) (“the District Court Litigation”),

Woodway USA, Inc. v. Samsara Fitness, LLC et al., Case No. 2:15-cv-00956 (DWI), and

Chapco, Inc. et al v. Woodway USA, Inc., Case No. 3:15-cv-01665 (DCT) (“the Chapco Litigation”).

Pet. vi; Paper 4, 2.

The parties also identify the following related *inter partes* reviews: IPR2023-00836 (U.S. Patent No. 9,039,580 B1) and IPR2023-00849 (U.S. Patent No. 10,799,745 B2).

D. The '884 Patent

The '884 patent is titled “Manual Treadmill and Methods of Operating the Same” and issued on February, 18, 2020. Ex. 1001, code (45), (54). The '884 patent depicts manual treadmill 10 in Figure 1, which is reproduced below.

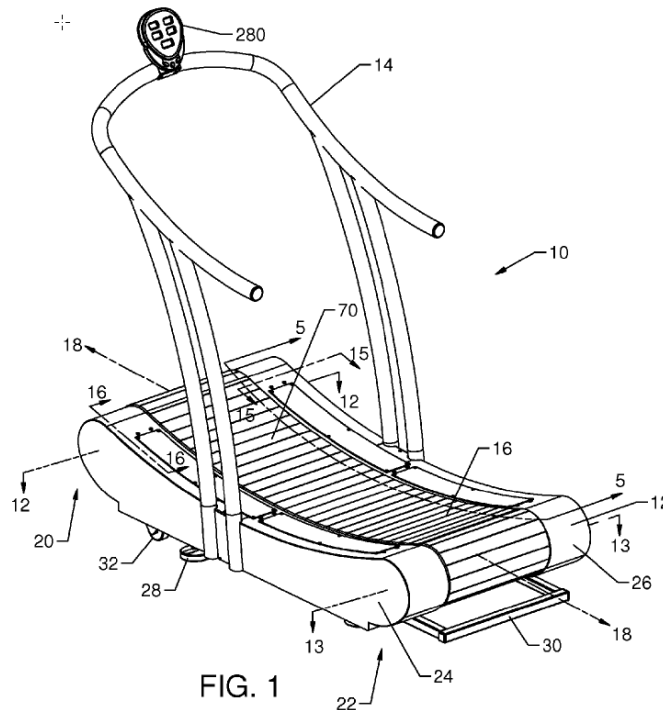


Figure 1 shows manual treadmill 10, having a handrail 14 mounted on a base 12, which supports running belt 16. *Id.* at 4:50–54. Running belt 16 has a non-planar, curved running surface 70. *Id.* at 6:64–66. As the user runs, running belt 16 generally moves rearward or clockwise. *Id.* at 6:66–7:1, 29:5–6.

Figure 2 of the '884 patent is reproduced below.

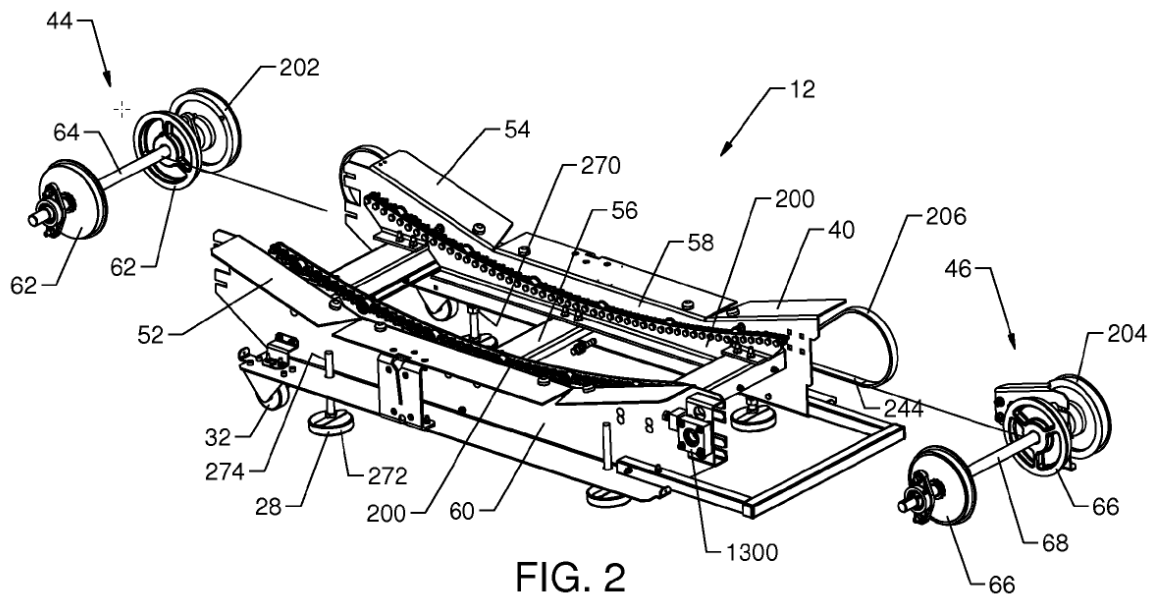


Figure 2 depicts an embodiment of base 12, having a frame 40, front shaft assembly 44 and rear shaft assembly 46. *Id.* at 3:40–42, 5:12–17. Rear shaft assembly 46 has running belt pulleys 66 fixed to rear shaft 68. *Id.* at 5:37–39. Attached to frame 40 are bearing rails 200.

Figure 9 of the '884 patent is reproduced below.

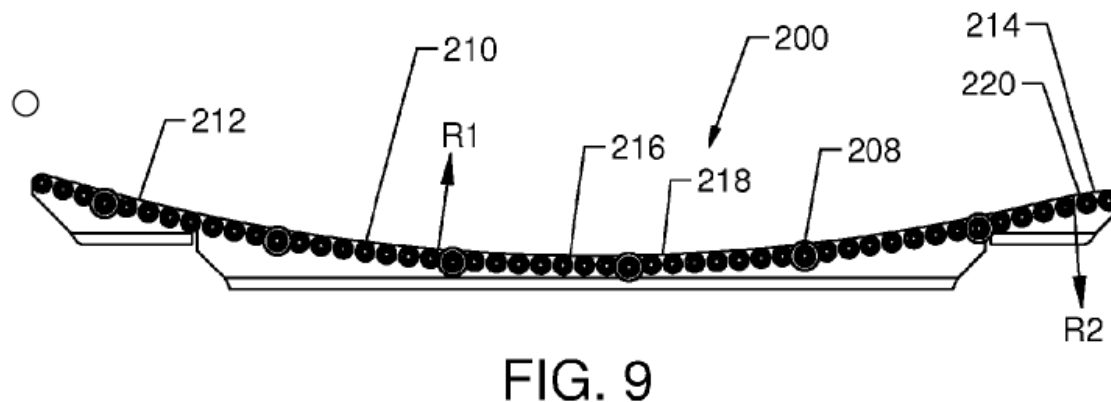


Figure 9 depicts bearing rail 200. *Id.* at 3:26–27. Bearing rail 200 includes a plurality of bearings 208 and has top profile 210, which is shaped as a complex curve in this embodiment. *Id.* at 11:20–23. However, the shape of

the top profile can have variations and may not have an entirely smooth contour. *Id.* at 12:12–18, Figs. 7a–7j.

Forward rotation of running belt 16 is undesirable because it could cause a user to lose their footing, resulting in injury. *Id.* at 27:4–10. Manual treadmill 10, thus, may include safety devices to prevent forward rotation. *Id.* at 27:11–13. One safety device is depicted in Figure 36 of the '884 patent, reproduced below.

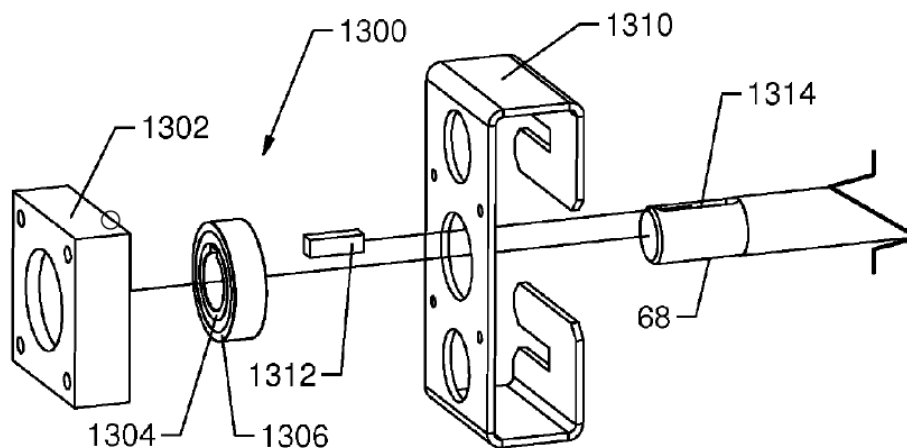


FIG. 36

Figure 36 depicts one embodiment of a one-way bearing assembly. *Id.* at 4:37–39. One-way bearing assembly 1300 restricts motion by permitting rotation of front and rear shaft assemblies 44, 46 in only one direction. *Id.* at 27:15–21. One-way bearing assembly 1300 has inner ring 1304 and an outer ring 1306. *Id.* at 27:22–26. Disposed between inner ring 1304 and outer ring 1306 are sprags (not shown) that are asymmetric and, thus, allow for motion in one direction and prevent rotation in the opposite direction. *Id.* at 27:26–29. Outer ring 1306 is fixed to housing 1302, which is mounted to frame 40 so as to prevent movement of housing 1302 in response to rotation of rear shaft 68. *Id.* at 27:22–29. Key 1312 is fixed to inner ring 1304 and

cooperates with keyway 1314 in rear shaft 68, and, thus, inner ring 1341 rotates with rear shaft 68. *Id.* at 27:43–46, 27:49–53.

If a force is applied by the user to the running belt 16 that urges the rear shaft 68 to rotate counterclockwise, the one way bearing assembly 1300 provides a counter force, preventing the counterclockwise rotation of the rear shaft 68 and the forward rotation of the running belt 16. Specifically, as the rear shaft 68 begins to move counterclockwise, the interaction of the key 1312 and the keyway 1314 begins to drive the inner ring 1304 of the one-way bearing assembly 1300 rearward. The Sprags become wedged between the inner ring 1304 and the outer ring 1306, preventing the counterclockwise rotation of the inner ring and key 1312 disposed therein. The key 1312, by virtue of its inability to rotate, provides a counterforce to the keyway 1314 as the key way continues to attempt to rotate counterclockwise. By preventing the key way 1314 from moving counterclockwise, the one-way bearing assembly 1300 thus prevents the rear shaft 68, the rear running belt pulleys 66, and running belt 16 from rotating counterclockwise as seen in FIGS. 1 and 5.

Id. at 27:53–28:4.

The '884 patent discloses another embodiment of a safety device having a one-way bearing assembly. *Id.* at 28:5–7, Fig. 38. Additionally, the '884 patent discloses other safety systems to prevent undesirable forward rotation of running belt 16, such as a cam locking system, taper locks, a user operated pin system, or a band brake system with a lever. *Id.* at 29:30–35.

E. Illustrative Claim

Petitioner challenges claims 30–34, 37–54, 57, and 59 of the '884 patent. Claims 30, 37, 50 and 57 are independent. Claims 31–34 depend directly or indirectly from claim 30, and claims 38–49 depend directly or indirectly from claim 37, claims 52–54 depend from claim 50, and claim 59 depends from claim 57. Claim 30 is illustrative and reproduced below.

30. A manually powered treadmill, comprising:
a frame having a front end and a rear end positioned opposite the front end;
a front shaft coupled to the frame proximate the front end;
a rear shaft coupled to the frame proximate the rear end;
a plurality of bearings coupled to the frame;
a running belt at least partially supported by the plurality of bearings, wherein the running belt comprises a curved running surface; and
a safety device coupled to the frame and the running belt, the safety device having a first rotatable element and a second rotatable element, wherein at least one of the first and second rotatable elements are adapted for rotation relative to the frame;
wherein the running belt and one of the first and second rotatable elements of the safety device freely rotate in a first direction of rotation relative to the other of the first and second rotatable elements of the safety device, but interference between the safety device and at least one of the first and second rotatable elements substantially prevents rotation in a second direction of rotation, opposite the first direction of rotation, of the running belt and the one of the first and second rotatable elements relative to the other of the one of the first and second rotatable elements.

Ex. 1001, 35:51–36:8.

F. Evidence and Asserted Grounds

Petitioner asserts that claims 30–34, 37–54, 57, and 59 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
30–34, 37–43, 45–50, 52–54, 57, 59	103	Schönenberger ¹ , Socwell ² , Magid ³ , Sclater ⁴
44, 51	103	Schönenberger, Socwell, Magid, Sclater, Skowronski ⁵
30–34, 37–54, 57, 59	103	Schönenberger, Socwell, Magid, Sclater
30–34, 37–39, 41, 45–49, 57, 59	103	Chickering ⁶ , Magid, Sclater

Pet. 4–5.

Petitioner also relies upon the Declaration of Robert Giachetti, Ph.D. (Ex. 1003).

II. ANALYSIS

A. Discretionary Denial

1. 35 U.S.C. § 314(a)

Patent Owner argues that we should exercise our discretion under 35 U.S.C. § 314(a) to deny the Petition in light of the District Court Litigation. Prelim. Resp. 38–50. Section 314(a) states that

¹ U.S. Patent No. 4,614,337, issued Sept. 30, 1986 (Ex. 1010).

² U.S. Patent No. 5,897,461, issued Apr. 27, 1999 (Ex. 1011).

³ U.S. Patent No. 5,538,489, issued July 23, 1996 (Ex. 1012).

⁴ Neil Sclater and Nicholas P. Chironis, *Mechanisms & Mechanical Devices Sourcebook*, Third Ed., (McGraw-Hill 2001) (Ex. 1017).

⁵ U.S. Patent No. 6,923,746, issued Aug. 2, 2005 (Ex. 1030).

⁶ U.S. Patent No. 3,637,206, issued Jan. 25, 1972 (Ex. 1013).

[t]he Director may not authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.

Under § 314(a), we have discretion to deny institution of an *inter partes* review. *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016). We consider several factors when determining whether to deny institution under § 314(a) based on a parallel district court proceeding, specifically

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board's exercise of discretion, including the merits.

Apple Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”). We also consider “several clarifications” made by the Director of the United States Patent and Trademark Office (“USPTO”). See USPTO Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation, 2 (June 21, 2022), *available at* https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf (“*Fintiv* Memo”).

a) Factor 1 – Whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted

Under the first *Fintiv* factor, we consider “whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted.” *Fintiv*, Paper 11 at 6.

No motion for stay has been filed in the District Court Litigation. Pet. 103–104; Prelim. Resp. 37.

Patent Owner, however, argues that “even if Petitioner were to seek a stay pending IPR, the Court would almost certainly deny such a request under the three-factor test used in the Southern District of California.” Prelim. Resp. 37; *see also id.* at 37–40 (arguing all three factors weigh against a stay).

Patent Owner’s argument is based on mere speculation. We decline to speculate based on the record in this proceeding whether the District Court would grant a stay of the District Court Litigation. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (informative) (“*Fintiv II*”). As a result, we determine that the first *Fintiv* factor is neutral.

b) Factor 2 – Proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision

Under the second *Fintiv* factor, we consider the “proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision.” *Fintiv*, Paper 11 at 6.

No trial date has been set in the District Court Litigation. Pet. 104; Prelim. Resp. 40.

Parties may present evidence regarding the most recent statistics on median time-to-trial for civil actions in the district court in which the parallel litigation resides for the PTA’s consideration. *Fintiv* Memo 8–9. Applying

a median time to trial of 45.4 months for the District Court, Petitioner argues that trial would likely occur in early 2026. Pet. 104. Patent Owner argues that 45.4 months is incorrect and that we should apply a median time to trial of 34.17 months or 31.92 months, depending on whether statistical outliers are excluded. Prelim. Resp. 41–42. Applying its median time to trial, Patent Owner argues that trial would likely occur in February 2025 or December 2024. *Id.* at 41. Regardless of which median time to trial we apply, our projected statutory deadline for a final written decision in this case is October 2024 and neither party argues that the District Court’s trial would occur before we issue our final written decision.

As a result, we determine that the second *Fintiv* factor weighs against discretionary denial of institution.

c) Factor 3 – Investment in the parallel proceeding by the court and the parties

Under the third *Fintiv* factor, we consider the “investment in the parallel proceeding by the court and the parties.” *Fintiv*, Paper 11 at 6. If, at the time of the institution decision, the district court has issued substantive orders related to the challenged patent, such as a claim construction order, this fact weighs in favor of denial. *See Fintiv*, Paper 11 at 9–10. On the other hand, if the district court has not issued such orders, this fact weighs against discretionary denial. *Id.* at 10.

Petitioner argues that neither the parties nor the District Court have invested significant resources because “[t]he [District Court] has not issued a scheduling order beyond the Markman Hearing, or any substantive rulings (e.g., claim construction, dispositive motion).” Pet. 103.

Patent Owner argues that the third factor favors denying institution because, in the District Court Litigation, the parties have 1) conducted

substantial fact discovery, 2) exchanged initial infringement and invalidity contentions, 3) began expert discovery, and 4) conducted a Markman hearing. Prelim. Resp. 42–44.

The evidence of record indicates that the District Court and the parties have invested some resources in the District Court Litigation as to issues of unpatentability involving the '884 patent, but that much work remains in the District Court Litigation as it relates to invalidity. *See Sand Revolution II, LLC v. Continental Intermodal Grp. – Trucking LLC*, IPR2019-01393, Paper 24 at 11 (PTAB June 16, 2020) (informative) (“[W]e recognize that much work remains in the district court case as it relates to invalidity: fact discovery is still ongoing, expert reports are not yet due, and substantive motion practice is yet to come.”). The District Court has not yet issued any substantive orders as to the patentability of the challenged claims or a claim construction order. Pet. 103; Prelim. Resp. 42–44. Fact and expert discovery are ongoing, and the deadline for dispositive motions is not yet set. Ex. 2001. These facts do not favor denial.

Additionally, *Fintiv* directs us to consider whether “the petitioner filed the petition expeditiously.” *Fintiv*, Paper 11 at 11.

If the evidence shows that the petitioner filed the petition expeditiously, such as promptly after becoming aware of the claims being asserted, this fact has weighed against exercising the authority to deny institution under *NHK*.¹ If, however, the evidence shows that the petitioner did not file the petition expeditiously, such as at or around the same time that the patent owner responds to the petitioner's invalidity contentions, or even if the petitioner cannot explain the delay in filing its petition, these facts have favored denial.

Fintiv, Paper 11 at 11–12.

Patent Owner contends that Petitioner did not act expeditiously because Petitioner filed the Petition on April 11, 2023, more than seven months after receiving Patent Owner's preliminary infringement contentions on September 6, 2022. Prelim. Resp. 42–43 (citing Ex. 2014).

Petitioner was served with the complaint in the District Court Litigation on April 13, 2022 and filed the Petition on April 11, 2023. *See* Pet. vi. Petitioner does not explain its failure to act expeditiously in filing the Petition. These facts favor denial.

Considering the facts a whole, we determine that the third *Fintiv* factor weighs slightly against discretionary denial of institution.

d) Factor 4 – Overlap between issues raised in the petition and in the parallel proceeding

Under the fourth *Fintiv* factor, we consider the “overlap between issues raised in the petition and in the parallel proceeding.” *Fintiv*, Paper 11 at 6.

Petitioner stipulates that “if the Board institutes this Petition, Petitioner will not raise at trial in parallel litigation any Ground raised here.” Pet. 103. Patent Owner argues that Petitioner's stipulation is not a *Sotera*-type stipulation, and thus “cannot short-circuit the *Fintiv* analysis and does not account for the significant risk of overlap between the asserted grounds and Petitioner's invalidity positions in the [District Court Litigation].” Prelim. Resp. 44 (citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential)).

The Petition challenges claims 30–34, 37–54, 57, and 59 and relies on Schöenberger, Socwell, Magid, Sclater, and Chickering. Pet. 4–5. Petitioner's invalidity contentions in the District Court Litigation address the challenged claims and rely on the prior art asserted in this proceeding. *See*

Ex. 2015, 2–3, 9–62. Nonetheless, Petitioner’s stipulation that it will not rely on the grounds asserted in the Petition in the District Court Litigation mitigates to at least some degree concerns of duplicative efforts and potentially conflicting decisions. *See Sand Revolution*, Paper 24 at 12. Thus, we determine that the fourth *Fintiv* factor weighs at least slightly against discretionary denial of institution.

e) Factor 5 – Whether the petitioner and the defendant in the parallel proceeding are the same party

Under the fifth *Fintiv* factor, we consider “whether the petitioner and the defendant in the parallel proceeding are the same party.” *Fintiv*, Paper 11 at 6. Here, Petitioner is the defendant in the District Court Litigation. Prelim. Resp. 47. Under these circumstances, we determine that the fifth *Fintiv* factor slightly favors discretionary denial of institution.

f) Factor 6 – Other circumstances that impact the Board’s exercise of discretion, including the merits

Under the sixth *Fintiv* factor, we consider “other circumstances that impact the Board’s exercise of discretion, including the merits.” *Fintiv*, Paper 11 at 6. “[W]here the PTAB determines that the information presented at the institution stage presents a compelling unpatentability challenge, that determination alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.” *Fintiv* Memo 4–5.

Petitioner argues that “[t]he Petition’s merits are strong” and cites to pages 3 to 5 of the *Fintiv* Memo, which discuss compelling merits. Pet. 103. We, thus, construe Petitioner’s argument as raising a compelling merits argument. Patent Owner responds that Petitioner has not shown compelling merits because merely meeting the statutory likelihood of success threshold for institution is not enough. Prelim. Resp. 47–48.

On balance, we determine that *Fintiv* factors 1–5 do not favor discretionary denial of institution. In particular, we determine that factors 2–4 weigh against denial of institution and factor 5, which is the lone factor favoring denial of institution, does not outweigh factors 1–4. Factor 1 is neutral. As a result, we need not decide whether Petitioner presents a compelling unpatentability challenge. *See CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 at 4–5 (PTAB Feb. 27, 2023) (decision on Director review) (precedential) (“[I]n circumstances where the Board determines that the other *Fintiv* factors 1–5 do not favor discretionary denial, the Board shall decline to discretionarily deny under *Fintiv* without reaching the compelling merits analysis.”).

In addition, Petitioner asserts:

(1) the Board is best suited to address the technical issues raised here; (2) a decision on the merits at institution may aid the parties in resolving their dispute; and (3) determining patentability will benefit the public, providing a complete record and rationale absent from a jury verdict form.

Pet. 104–105. Patent Owner responds that Petitioner’s argument does nothing more than “proclaim[] in conclusory fashion that institution will result in some vague benefit to the [District Court] Litigation and the public.” Prelim. Resp. 48. We agree with Patent Owner. Petitioner’s assertion is conclusory and does not adequately specify the particular benefits to the proceeding here or to the District Court Litigation.

We determine that the sixth *Fintiv* factor is neutral.

g) Summary

Based on our holistic view of the *Fintiv* factors, we decline to exercise our discretion under § 314(a) to deny the Petition.

2. 35 U.S.C. § 325(d)

Patent Owner argues that the Petition should be denied under 35 U.S.C. § 325(d). Prelim. Resp. 29–30, 34. In determining whether to deny institution under § 325(d), we use

the following two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential).

The *Becton, Dickinson* factors provide useful insight into how to apply the framework under 35 U.S.C. § 325(d). *Id.* at 9 (referencing *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph)).

Under § 325(d), the art and arguments must have been previously presented to the Office during proceedings, such as examination of the underlying patent application, pertaining to the challenged patent. *Advanced Bionics*, Paper 6 at 7. Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (“IDS”), in the prosecution history of the challenged patent. *Id.* at 7–8.

Under the first part of the *Advanced Bionics* framework, we consider “whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office.” *Id.* at 8. We evaluate *Becton*,

Dickinson factors (a), (b), and (d) to determine whether Petitioner has demonstrated material error. *Id.* at 10. Those factors are:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination; and
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art.

Becton, Dickinson, Paper 8 at 17–18.

Patent Owner argues that the same or substantially the same art previously was presented to the Office because Schönenberger, Skowronski, Chickering, Socwell, and Magid are listed on the face of the '884 patent. Prelim. Resp. 31; *see* Ex. 1001, code (56) (listing references cited). Additionally, Patent Owner argues the Petitioner relies upon “nearly identical arguments” regarding the teachings of Schönenberger, Skowronski, Chickering, Socwell, and Magid because a declaration of Dr. Giachetti from the Chapco Litigation was presented to the Office during the prosecution. *Id.* at 31–32.

Petitioner does not dispute that Schönenberger, Skowronski, Chickering, Socwell, and Magid were previously presented to the Office but argues that Sclater was not. *See* Pet. 105.

Patent Owner does not dispute that Sclater was not previously presented to the Office (Prelim. Resp. 31) and does not assert that Dr. Giachetti’s declaration from the Chapco Litigation addresses Sclater (*See generally id.* at 31–33; *see also* Exs. 1008, 1009). Patent Owner, however, argues that the addition of Sclater does not add anything meaningful because

Petitioner allegedly does not adequately explain why a POSA would be motivated to combine Sclater with any of the other references. Prelim. Resp. 33–34.

It is not disputed the Sclater was not previously presented to the Office. As can be seen from our analysis below, all of Petitioner’s asserted grounds substantially rely upon Sclater to teach limitations of the safety device. Sclater, thus, is meaningful to the prior art combination.

Accordingly, we determine that discretionary denial is not warranted because the asserted combination, all of which include Sclater, were not previously presented to the Office. Because we determine that part one of the framework is not satisfied, we need not turn to part two to determine whether Petitioner demonstrates that the Office erred in a manner material to the patentability of the challenged claims.

For the reasons discussed above, we decline to exercise our discretion under § 325(d) to deny the Petition.

B. Legal Standards

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). “[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *KSR*, 550 U.S. at 416 (citing *United States v. Adams*, 383 U.S. 39, 50–51 (1966)). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any

differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Here, the record contains no evidence of objective indicia of non-obviousness.

C. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art (“POSA”) would have had a bachelor’s degree in mechanical engineering and at least one year of machine design experience related to power transmission equipment and a demonstrated understanding of the biomechanics of exercise, including knowledge in the field of anthropometry (i.e., the study of human proportion).

Pet. 5 (citing Ex. 1003 ¶¶ 44–49 (supporting testimony of Dr. Giachetti)) (emphasis omitted). Petitioner additionally states that “[t]his description is approximate and additional development experience could make up for less education and vice versa.” *Id.*

For purposes of this Decision, we adopt Petitioner’s assessment of the level of ordinary skill in the art as it is consistent with the ’884 patent and the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

D. Claim Construction

We construe each 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) (2019). Under this standard, claim terms are generally given their plain and ordinary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of

the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Realtime Data LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019).

Petitioner states that claim terms should be construed according to their ordinary and customer meaning. Pet. 15. But, for ground 3 only, Petitioner alternatively proposes constructions of the claim terms “substantially prevent,” “safety device,” and “shaft” because the construction of these terms is at issue in the District Court Litigation. *Id.* (emphasis omitted).

At this stage of the proceeding, Patent Owner asserts that no claim construction is necessary and does not expressly construe any claim terms. Prelim. Resp. 3.

We need not construe explicitly any of the claim terms proposed by Petitioner to reach our decision about institution. *See Realtime Data* 912 F.3d at 1375 (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

E. Ground 1: Schönenberger, Socwell, Magid, Sclater

Petitioner contends that claims

1. Summary of Schönenberger

Schönenberger is a U.S. patent titled “Movable Surface Apparatus, Particularly for Physical Exercise and Training” and issued on September 30, 1986. Ex. 1010, codes (45), (54). Schönenberger discloses a movable surface apparatus that may be driven by gravity. *Id.* at 4:34–37, 13:33–34. One objective of Schönenberger’s invention is to provide an apparatus that

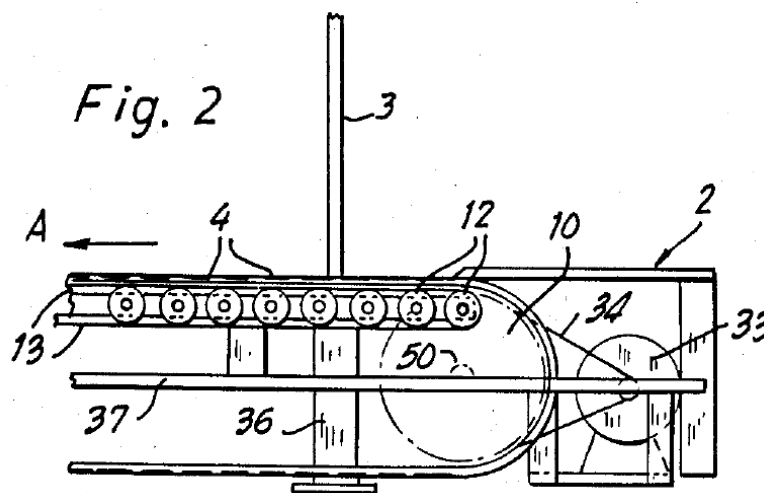
“is safe in operation and requires little operating power, has low noise level in operation.” *Id.* at 1:65–66. Another objective is to provide an apparatus having

a pleasant, springy feel when being stepped or jumped on without, however, being excessively stressed by bending or bowing, so that the surface which is engaged by the foot of the user will have, essentially, the characteristics of a yielding, yet firm support similar, for example, to walking on moss-covered ground or a needle-covered path.

Id. at 1:67–2:5.

Figure 2, reproduced below, “is a fragmentary schematic side view of the movable surface and its drive arrangement, with the housing removed.”

Ex. 1010, 3:1–3.



Schönenberger’s Figure 2 “is a fragmentary schematic side view of the movable surface and its drive arrangement, with the housing removed.” Ex. 1010, 3:1–3. Housing 2 includes frame members 36 and 37 which provide for physical and structural support. Schönenberger discloses that “within the housing 2 are located rotatable drums, rollers, sheaves, sprockets, or the like, about which the surface 1, which is an endless loop, is placed.” *Id.* at 4:15–17. Schönenberger discloses that the rotatable elements

are “preferably in the form of two operating drums or rollers 10” and that “rollers or sheaves 10 have a toothed or ribbed circumference.” *Id.* at 4:18–20; 4:23–24.

2. Summary of Socwell

Socwell is a U.S. patent titled “Exercise Treadmill” and issued on April 27, 1999. Ex. 1011, codes (45), (54). Socwell discloses “a novel curved deck treadmill which provides a structurally supported arcuate shaped, movable surface on which a user may exercise.” *Id.* at 3:26–29. In one embodiment, the curved deck treadmill does not have a motor. *Id.* at 11:54–60. Socwell’s Figure 1 is reproduced below.

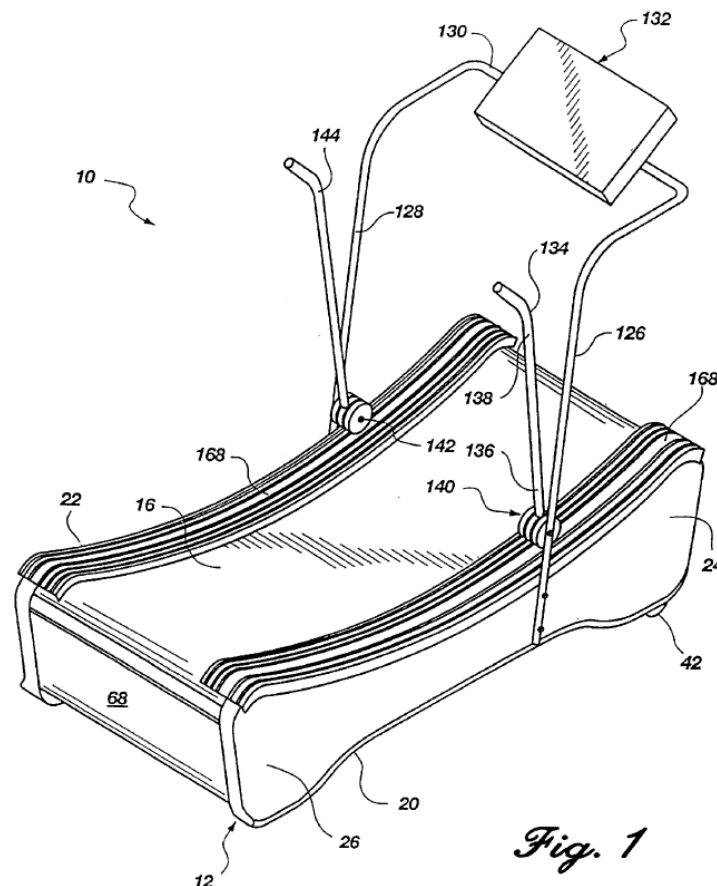


Figure 1 “is a perspective view of one presently preferred embodiment of a curved deck treadmill.” *Id.* at 4:35–36. Curved deck treadmill 10

comprises a support frame 12 having first side 20 and second side 22, with deck 56 between. *Id.* at 5:23–26.

Socwell's Figure 2 is reproduced below.

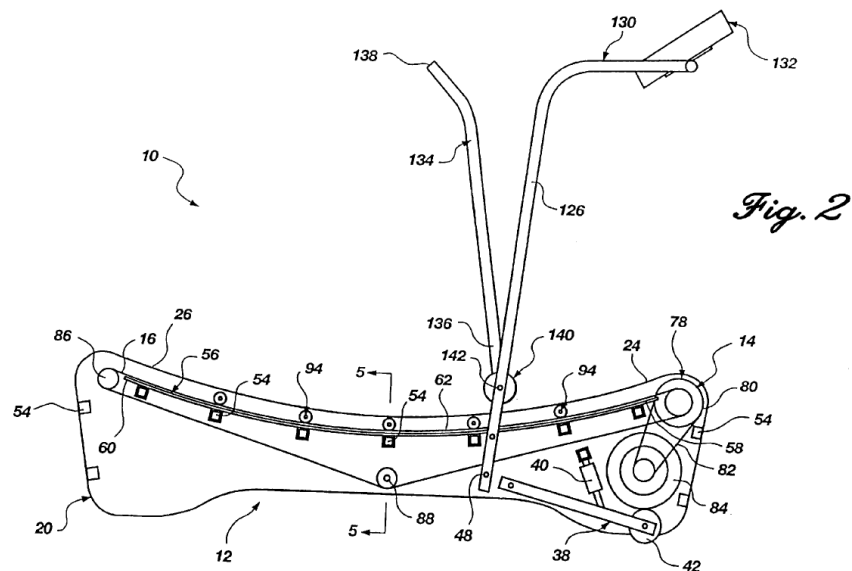


Figure 2 “is a side elevational view of the embodiment of [Figure 1] exposing one presently preferred arrangement of the internal components of the present invention.” *Id.* at 4:38–40. In one embodiment, deck 56 has first end 58, second end 60, and intermediate portion 62 between. *Id.* at 5:26–28. Roller assembly 14 is provided between first roller 78 and second roller 86. *Id.* at 5:33–38. Belt 16 is rotatably mounted on roller assembly 14 in relation to deck 56 and provides “a structurally supported arcuate shaped, movable surface on which a user may exercise.” *Id.* at 5:42–45.

Socwell's Figure 5 is reproduced below.

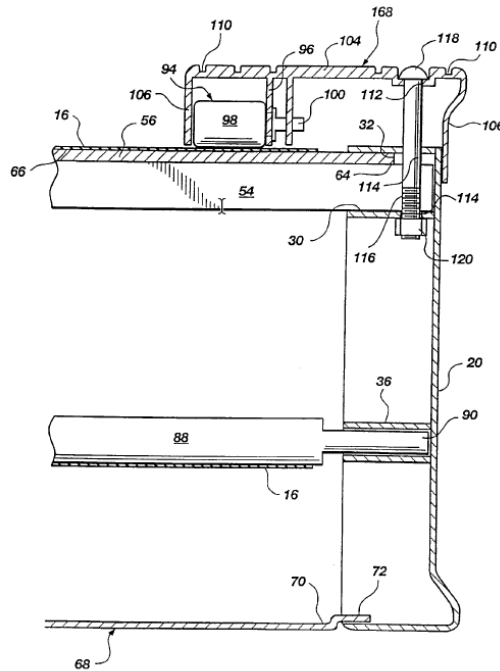


Fig. 5

Figure 5 depicts belt securing assembly 94. Belt securing assembly 94 retains endless belt 15 in a curvilinear configuration, substantially flush with deck 56. *Id.* at 10:5–9. Belt securing assembly 94 includes mounting bracket 96 which holds roller 98 so that roller 98 engages belt 16. *Id.* at 10:17–21.

3. Summary of Magid

Magid is a U.S. patent titled “Walker Apparatus with Left and Right Foot Belts” and issued on July 23, 1996. Ex. 1012, codes (45), (54). Magid's Figure 2 is reproduced below.

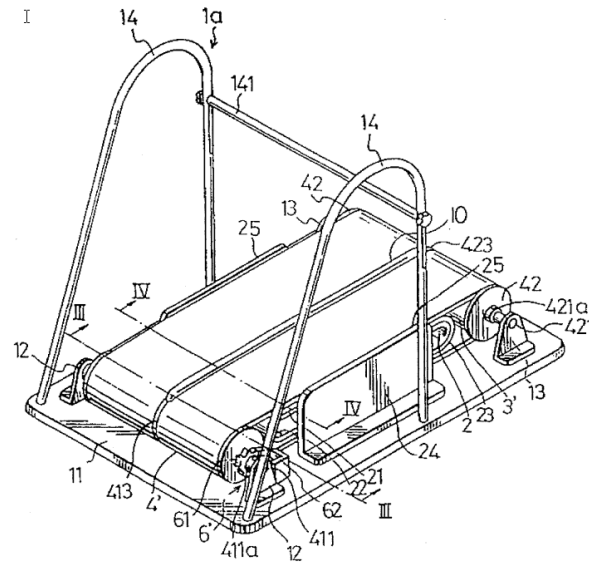


FIG. 2

Figure 2 depicts Magid's preferred embodiment of a walker apparatus—an exercise walker. *Id.* at 3:41–44. The exercise walker comprises base 11, having two foot belts 4, 4', a pair of front rollers 41, and a pair of rear rollers 42. Figure 2 shows unidirectional control means 6, 6', which permits only unidirectional movement of foot belts 4, 4'. *Id.* at 4:47–49. Magid states:

A unidirectional control means 6, 6' is installed to permit only unidirectional movement of the left and right foot belts 4, 4'. In this embodiment, the control means 6, 6' includes a pair of ratchet gears 61 attached to outer ends of the front rollers 41 and mounted rotatably on the first shaft 411, and a pair of pawls 62 secured to the base 11 and engaging one of the ratchet gears 61 to permit only unidirectional rotation of the front rollers 41, thereby preventing bidirectional movement of the foot belts 4, 4'. A releasable means (not shown) may be provided to release selectively the pawls 62 from the ratchet gears 61 in a known manner to permit reciprocating movement of the foot belts 4, 4' when desired. Of course, the ratchet gears may be attached to the rear rollers 42 to achieve the same result.

Id. at 4:46–60.

4. *Summary of Sclater*

Sclater is titled “Mechanisms and Mechanical Devices Sourcebook, Third Edition.” Ex. 1017, cover. Chapter 9 of Sclater is titled “Coupling, Clutching, and Braking Devices” and describes basic mechanical clutches, including a cam and roller clutch. *Id.* at 302–303. A cam and roller clutch is “[an] over-running clutch [that] is better suited for higher-speed free-wheeling than a pawl-and-ratchet clutch.” *Id.* at 303. For a cam and roller clutch,

[t]he inner driving member has cam surfaces on its outer rim that hold light springs that force the rollers to wedge between the cam surfaces and the inner cylindrical face of the driven member. While driving, friction rather than springs force the rollers to wedge tightly between the members to provide positive clockwise drive. The springs ensure fast clutching action. If the driven member should begin to run ahead of the driver, friction will force the rollers out of their tightly wedged positions and the clutch will slip.”

Id.

Sclater also discusses spring-loaded pins and sprags in a one-way clutch and describes them as having “[s]prags combined with cylindrical rollers in a bearing assembly [that] can provide a simple, low-cost method for meeting the torque and bearing requirements of most machine applications” and can serve as a roller bearing, and with the clutch’s torque rating dependent on the number of sprags. Ex. 1017, 312.

Sclater further provides “details of overriding clutches” and explains a friction clutch is quieter than a ratchet and pawl. Ex. 1017, 316. In discussing ways to apply overrunning clutches, Sclater explains that “[t]hese clutches allow freewheeling, indexing and backstopping,” and “they will solve many design problems.” *Id.* at 318.

Figure 1 from Sclater's page 318 is reproduced below.

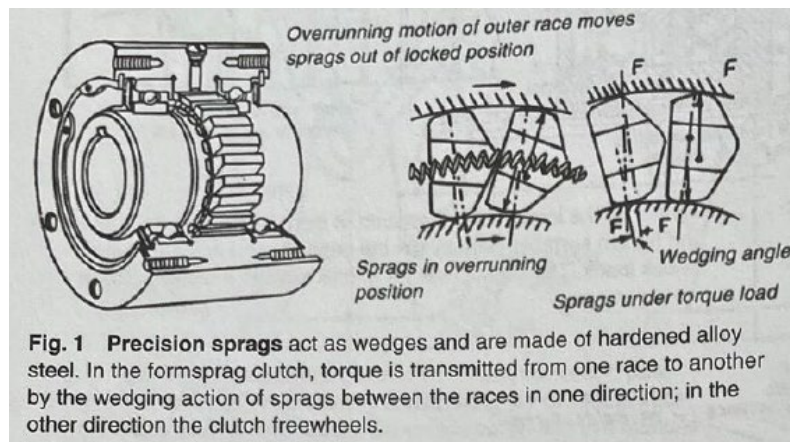


Figure 1 illustrates precision sprags which are an example of an overrunning clutch. *Id.* at 318. This clutch transmits torque from one race to another by the wedging actions of sprags between the races in one direction and, in the other direction, the races freewheels. *Id.*

Sclater states that application for sprag-type clutches “include overrunning, backstopping, and indexing” and the selection of an overrunning sprag clutch “requires a review of the torque to be transmitted, overrunning speed, type of lubrication, mounting characteristics, environment conditions, and shock conditions that might be encountered.” Ex. 1017, 320.

Figure 2 from Sclater's page 320 is reproduced below.

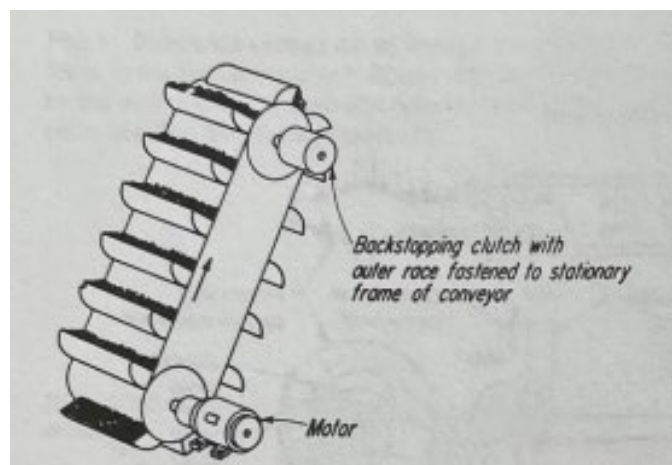


Figure 2 depicts an example application of backstopping. *Id.* at 320. A vertical conveyor carrying buckets and having a motor and a backstopping clutch with an outer race fastened to the stationary frame of the conveyor.

5. *Independent claim 30*

a) *A manually powered treadmill, comprising:*⁷

Petitioner contends, and Patent Owner does not dispute, that Schönerberger discloses a manually powered treadmill. Pet. 28 (citing Ex. 1010, 4:34–37, 6:16–18; Ex. 1003 ¶¶ 143–145, 237, 273, 291); *See generally* Prelim. Resp.

Based on the current record, we determine that Petitioner’s analysis and evidence sufficiently shows that Schönerberger discloses a manually powered treadmill.

b) *a frame having a front end and a rear end positioned opposite the front end;*

Petitioner contends, and Patent Owner does not dispute, that Schönerberger discloses housing 2 (i.e., a frame) having a front end and a rear end. Pet. 27 (citing Ex. 1010, 4:34–37; Ex. 1003 ¶¶ 143–145, 237, 273, 291); *see generally* Prelim. Resp.

Based on the current record, we determine that Petitioner’s analysis and evidence sufficiently shows that Schönerberger discloses a frame having a front end and a rear end positioned opposite the front end.

⁷ On this record, we do not need to determine whether the preamble is limiting as it is undisputed that Schönerberger discloses a manually powered treadmill.

- c) a front shaft coupled to the frame proximate the front end; a rear shaft coupled to the frame proximate the rear end;*

Petitioner contends, and Patent Owner does not dispute, that Schönenberger discloses housing 2 (i.e., a frame) having a front end and a rear end. Pet. 29–30 (citing Ex. 1010, 4:10–23, 9:31–35; Ex. 1003 ¶¶ 149–153, 244–247, 275, 277–278); *See generally* Prelim. Resp.

Based on the current record, we determine that Petitioner’s analysis and evidence sufficiently shows that Schönenberger discloses a front shaft and a rear shaft, arranged as recited by claim 30.

- d) a plurality of bearings coupled to the frame*

Petitioner contends, and Patent Owner does not dispute, that Schönenberger discloses rollers 12, 12’ (i.e., a plurality of bearings) coupled to frame 10 by bracket 19. Pet. 31 (citing Ex. 1010, 4:10–23, 9:31–35, Figs. 3, 12; Ex. 1003 ¶¶ 149–153, 244–247, 275, 277, 278); *see generally* Prelim. Resp.

Based on the current record, we determine that Petitioner’s analysis and evidence sufficiently shows that Schönenberger discloses a plurality of bearings coupled to the frame.

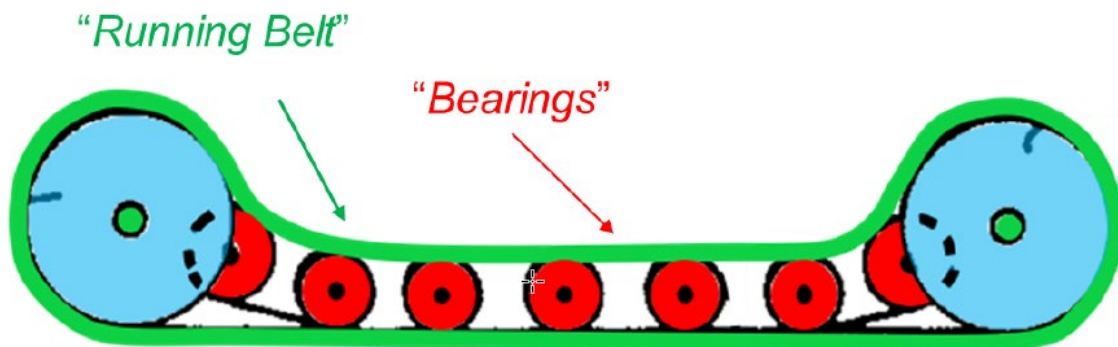
- e) a running belt at least partially supported by the plurality of bearings, wherein the running belt comprises a curved running surface*

Petitioner relies upon Schönenberger as disclosing a movable surface 1 (i.e., a running belt) that is supported by rollers 12, 12,’ on brackets 19, and pulleys 10. Pet. 34–37 (citing Ex. 1001, 2:6–9, 8:34–51; Ex. 1003 ¶¶ 159–163, 222, 248, 280 285, 293). Petitioner relies upon Socwell as disclosing “a ‘novel curved deck treadmill which provides a structurally supported arcuate shaped, moveable surface on which a user may exercise.’” Pet. 37 (citing Ex. 1011, 3:26–29; Ex. 1003 ¶ 165). Petitioner argues that

It would have been obvious to POSA to modify Schönenberger's brackets 19 and rollers 12, 12' ("*plurality of bearings*") to provide a curved support surface such that the movable surface 1 ("*running surface*") "*follows a curved running surface*" as taught by Socwell. (Ex. 1003 ¶¶166-167.)

Pet. 38. Petitioner reasons that a POSA would make such a modification to: (1) increase safety (*id.* at 38–40 (citing Ex. 1011, 2:11–29, 2:45–67, 3:1–9, 3:40–45; Ex. 1003 ¶¶ 168, 172; Ex. 1010 4:1–6)); (2) reduce impact loading of the user's joints (*id.* at 40–41 (citing Ex. 1011, 3:53–57)); (3) provide a more comfortable and can be used versatile treadmill that can be used for exercise and rehabilitation (*id.* at 41 (citing Ex. 1011, 3:53–57, 13:43–47; Ex. 1003 ¶ 173)).

Petitioner further assert that a POSA would have known that lowering Schönenberger's rollers 12 relative to the front and rear shaft assemblies would result in a curved running surface and that the movable surface 1 would follow the profile defined by the rollers 12. Pet. 42 (citing Ex. 1003 ¶ 175). Petitioner annotated Schönenberger's Figure 12, reproduced below, to illustrate the proposed modification.



Ex.1010, Fig.12

Schönenberger's Annotated Figure 12 depicts rollers 12 being lower than pulleys 10 and movable surface 1 having a curved running surface. Pet. 42. According to Petitioner, "[t]he modification would be the use of a known technique – using a curvilinear arrangement of bearings, as taught by Socwell – to improve similar devices (treadmills), in the same way, i.e., to produce a curved running surface." *Id.* at 45.

Patent Owner first disputes that Schönenberger's rollers 12 would form a curved running surface. Prelim. Resp. 17. Patent Owner contends that Schönenberger

describes the rollers as being arranged to have a substantially flat profile, even when the terminal rollers are positioned below the remaining rollers. Simply flipping the orientation of the terminal rollers such that they are positioned above the remaining rollers does not transform this profile into a curve.

Prelim. Resp. 16. Patent Owner asserts that "effectively flipping the orientation of the terminal rollers . . . such that they are positioned above the remaining roller would not result in a concave curvature to the running surface" but in a substantially flat or planar surface "as a POSA would expect since the remaining rollers are all of an identical size and shape."

Prelim. Resp. 20. Further, even if the slats forming the running belt were flexible and spaced apart to bring them into contact with the rollers, Patent Owner alleges that "the central surface formed by running belt 1, i.e., the portion that forms the 'running surface' where a user would actually stand, walk, or run when using the treadmill, would still be substantially flat." *Id.* at 21.

Patent Owner's argument is unpersuasive because they are focused on Schönenberger alone. Petitioner does not rely on the teachings of Schönenberger alone to teach a curved running surface, but relies on the

teachings of Socwell, as well, to modify Schönerberger. Patent Owner does not allege that Socwell does not teach a curved running surface.

Patent Owner next argues that Schönerberger's arrangement of rollers having a substantially flat profile would not have been modifiable to allow for a curved top profile, and even assuming they would be, the portion that forms the running surface would still be flat. Prelim. Resp. 18–21. At this stage of the proceeding, Patent Owner does not provide any evidence to support this assertion and are based on mere attorney argument. And, mere attorney argument is entitled to little weight. *See Elbit Sys. of Am., LLC v. Thales Visionix, Inc.*, 881 F.3d 1354, 1359 (Fed. Cir. 2018) (rejecting attorney argument as to the alleged understanding of one of skill in the art on an issue when no evidence was presented); *see also Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) (“Attorney argument is not evidence.”). In contrast, Petitioner provides the testimony of Dr. Giachetti for support and Dr. Giachetti testifies that it is well within the ordinary skill in the art to modify Schönerberger's running surface to be curved. Ex. 1003 ¶ 174.

Patent Owner further argues that “a POSA still would not have been motivated to modify Schönerberger as described in the Petition” because “Schönerberger teaches away from the combination Petitioner proposes.” Prelim. Resp. 22. Specifically, Patent Owner contends that one object of Schönerberger's invention, “to provide a treadmill with ‘a pleasant, springy feel when being stepped or jumped on without, however, being excessively stressed by bending or bowing,’” (*id.* at 23 (quoting Ex. 1010, 1:63–2:1)) is accomplished by having “a small amount of space (*e.g.*, ½ cm) between running belt 1 and support belts 13/rollers 12 while, when the surface is loaded, it comes into contact with the support belts 13/rollers 12” (*id.* (citing

Ex. 1010, 5:51–6:4)). Patent Owner alleges that Petitioner’s modified version omits that space and “[w]ith nothing but gravity to bring running belt 1 in contact with support belts 13/rollers 12, Petitioner’s modifications to Schönenberger would no longer function for its intended purpose.” *Id.* at 24.

On this record, Patent Owner’s arguments are unpersuasive. Patent Owner does not sufficiently show that, upon reading the Schönenberger reference, one of ordinary skill “would be discouraged from following the path set out in the [Schönenberger] reference, or would be led in a direction divergent from the path that was taken by the [Patent Owner].” Prelim. Resp. 14 (quoting *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009)). Schönenberger’s objectives to avoid excessive stress from “bending or bowing” and to have a surface having “characteristics of a yielding, yet firm support similar, for example, to walking on moss-covered ground or a needle-covered path” do not appear to be contrary to having some curvature, as may normally appear on a ground surface or path.

Based on the current record, we determine that Petitioner has sufficiently shown that a POSA would have modified Schönenberger to have a curved running surface, as taught by Socwell.

- f) a safety device coupled to the frame and the running belt, the safety device having a first rotatable element and a second rotatable element, wherein at least one of the first and second rotatable elements are adapted for rotation relative to the frame; wherein the running belt and one of the first and second rotatable elements of the safety device freely rotate in a first direction of rotation relative to the other of the first and second rotatable elements of the safety device, but interference between the safety device and at least one of the first and second rotatable elements substantially prevents rotation in a*

second direction of rotation, opposite the first direction of rotation, of the running belt and the one of the first and second rotatable elements relative to the other of the one of the first and second rotatable elements.

Petitioner contends Magid teaches mounting unidirectional control means 6, 6' (i.e., a safety device) to a front shaft assembly or a rear shaft assembly of a treadmill to “prevent[] bidirectional movement of” the treadmill belt. Pet. 46, 84 (citing Ex 1012, 4:46–59, Figs. 2, 5; Ex. 1003 ¶¶ 180–183, 249, 281, 294). In one embodiment, unidirectional control means 6, 6' is ratchet gear 61, which rotates with a front or rear shaft, and a pawl 62, which rotates relative to the frame, to engage the ratchet gear. Ex. 1012, 4:46–60. Petitioner argues that “[a] POSA would have known that mounting a one-way clutch^[8] in this manner improves the stability of the user on the treadmill by preventing forward treadmill belt motion, thereby providing a ‘safety device.’” Pet. 47 (citing Ex. 1003 ¶ 185).

Petitioner contends that “[i]t would have been obvious to a POSA to combine the manual treadmill with a curved running surface of Schonenberger in view of Socwell (“the modified Schonenberger treadmill”), with the known technique of a one-way clutch to prevent treadmill belt motion in a forward direction as disclosed in Magid.” Pet. 47 (citing Ex. 1003 ¶ 187). Recognizing that “the modified treadmill of Schonenberger in view of Socwell does not fully address the risk of a user falling forward due to reverse rotation of the running surface” (*id.* at 49), Petitioner argues that a POSA would further modify Schonenberger to include Magid’s unidirectional control means “to prevent the risk of a user stepping onto the belt and losing their balance when the belt unexpectedly

⁸ A ratchet and pawl mechanism is a type of one-way clutch. Ex. 1003 ¶ 81.

moves forward.” *Id.* at 50 (citing Ex. 1003 ¶¶ 194–195). This would be “a simple combination of known elements in the prior art” and “the use of a known technique.” *Id.* at 47, 51.

Based on the current record, we determine that Petitioner’s analysis and evidence sufficiently shows that a POSA would have modified the combined Schöenberger and Socwell to include a safety device as taught by Magid in order to reduce the risk of a user falling.

Patent Owner argues that a POSA would not combine Schöenberger and Socwell with Magid because Magid teaches away from the combination. Prelim. Resp. 11–15. Patent Owner argues that because Magid is focused on a two-belt therapeutic walker device, a POSA would not have looked to Magid and combined its teachings with a single-belt treadmill for a user of ordinary abilities. *Id.* Patent Owner also argues that “a POSA would not be motivated to combine the curved running surface of Socwell . . . with the flat, uniplanar walking device of Magid because the thus-modified piece of equipment would be unsuited for Magid’s intended purpose.” *Id.* at 15.

Patent Owner asserts:

Rather, when dealing with a curved or multi-planar treadmill like that described in Socwell or Chickering, respectively, or in Petitioner’s proposed modified version of Schöenberger, a POSA would examine the teachings of other treadmills having curved or multi-planar running surfaces, not a walker device having a belt with a flat or uniplanar surface, such as in Magid. This is because the design and engineering requirements of a treadmill having a curved running surface differ from those of a treadmill with a flat or uniplanar running surface. Design and engineering requirements urge a POSA to avoid combining the teachings of Socwell, Chickering, or other non-planar or multi-planar treadmills with Magid, particularly given the above, where Magid expressly teaches away from a single-belt treadmill.

Id. at 15.

On this record, Patent Owner’s arguments are unpersuasive because they are not focused on whether Petitioner’s proposed modification (i.e., modifying the combined Schönenberger and Socwell to include Magid’s unidirectional control mean 6, 6’ (Pet. 47)) would have been obvious to a POSA. Patent Owner does not sufficiently explain why differences in the shape or number of belts would teach away from adding a unidirectional control means to the combination of Schönenberger and Socwell for safety. *See In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994) (“teaching away” requires a POSITA to be discouraged from pursuing the solution in question). Further, Patent Owner’s arguments as to the design and engineering requirements of treadmills and as to what a POSA would have known or examined are unsupported by any declarant testimony and are mere attorney argument. Mere attorney argument is entitled to little weight.

A ratchet and pawl clutch, however, does not have a third element to create interference as required by claim 30. *See* Pet. 53. Petitioner asserts that a one-way clutch that works by created interference is taught by Sclater’s sprag-type one-way bearing assembly that includes sprags with rolling elements, such as cylindrical rollers or balls, an inner race, and an outer race surrounding the inner race. *Id.* at 53–55 (citing Ex. 1017, 312, 318; Ex. 1003 ¶¶ 200, 202). Petitioner further asserts that wedging between the sprags and the inner and outer races prevents rotation of the inner race in an opposite direction and would prevent the movable surface 1 from moving forward. *Id.* at 55–56 (citing Ex. 1017, 318; Ex. 1003 ¶ 204).

Petitioner argues that Magid’s “[r]atchet-and-pawl one-way clutch” makes noise during operation and Sclater’s “friction-type clutch” is quieter. Pet. 56; Ex. 1003 ¶ 208. Petitioner contends a “POSA would have

considered a sprag-type one-way clutch bearing for an exercise equipment application, such as a treadmill” and “would have known how to replace Magid’s control means with Sclater’s one-way bearing assembly.” Pet. 57–58 (citing Ex. 1018, 52–53; Ex. 1003 ¶¶ 90, 211).

Based on the record at this stage of the proceeding, Petitioner’s evidence sufficiently shows that it would have been obvious to a POSA to substitute Sclater’s one-way sprag-type bearing for Magid’s ratchet and pawl one-way mechanism to obtain predictable results, *e.g.*, reduced noise and improved durability.

Patent Owner argues that Petitioner’s motivations to combine are fraught with hindsight bias because “Petitioner does not adequately explain why a POSA would have been specifically motivated to select the mechanism Petitioner relies on, rather than one of the dozens of other options Sclater presents.” Prelim. Resp. 7. In particular, Patent Owner argues that Sclater does not specifically disclose that the sprag type clutch relied upon by Petitioner reduces noise and improves durability. Prelim. Resp. 5–11.

The test for obviousness is not whether the claimed invention is expressly disclosed in the references, but whether the claimed subject matter would have been obvious to those of ordinary skill in the art in light of the *combined teachings* of those references. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). In an obviousness analysis, it is not necessary to find precise disclosure directed to the specific subject matter claimed because inferences and creative steps that a person of ordinary skill in the art would employ can be taken into account. *See KSR*, 550 U.S. at 418. In this regard, “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton.” *Id.* at 421. “[I]n many cases a person of ordinary skill will be

able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420. As the U.S. Supreme Court has stated, obviousness requires an “expansive and flexible” approach that asks whether the claimed improvement is more than a “predictable variation” of “prior art elements according to their established functions.” *Id.* at 415, 417. “A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post reasoning*.” *Id.* at 421 (citing *Graham*, 383 U.S. at 36). “Rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.” *KSR*, 550 U.S. at 421.

Based on the record at this stage of the proceeding, Petitioner sufficiently shows that it would have been obvious to a POSA “to substitute Sclater’s one-way sprag-type bearing for Magid’s ratchet-and-pawl one-way mechanism to obtain predictable results, *e.g.*, reduced noise and improved durability.” Pet. 56; Ex. 1003 ¶ 207.

Magid broadly describes its safety device as “[a] unidirectional control means 6, 6’” and describes the unidirectional control means 6, 6’ as being a ratchet and pawl mechanism in one embodiment. Ex. 1012, 4:47–55. This suggests that that the unidirectional control means 6 6’ could be a unidirectional control mechanism other than the ratchet and pawl described in one embodiment of Magid. *See also id.* at 7:61–67 (stating that Magid’s invention is not limited to the preferred embodiments).

Dr. Giachetti testifies that “[s]ome common mechanical clutches include ratchet clutches and cam type one-way clutch, such as sprag clutches.” Ex. 1003 ¶ 81. Dr. Giachetti testifies that “[r]atchet and pawl clutch mechanisms make noise during operation” because an audible “click” sounds is made when the pawl collides with a gear tooth on the ratchet. Ex.

1003 ¶ 208; *see also id.* ¶ 83 (“A ratchet clutch having a pawl that contacts the gear during overrun is loud, as compared to other mechanical clutches.”). Similarly, Sclater teaches that a friction-type clutch is quieter than a ratchet and pawl mechanism. Ex. 1017, 316. Sclater states:

Sprags combined with cylindrical rollers in a bearing assembly can provide a simple, low-cost method for meeting the torque and bearing requirements of most machine applications. Designed and built by Est. Nicot of Paris, this unit gives one-direction only torque transmission in an overrun clutch. In addition, it also serves as a roller bearing.

Ex. 1017, 312.

Dr. Giachetti also testifies that roller clutches are better suited for high-speed freewheeling than ratchet clutches because “the pawl may skip past a few teeth before backstopping the ratchet gear, whereas the sprags are always in contact with the rings and do not need to find a discrete gear tooth to stop” and “because there are multiple sprags, they distribute the load over a larger surface area.” Ex. 1003 ¶¶ 209, 445 (citing Ex. 1017, 303, 320).

Finally, Dr. Giachetti testifies that “[a] POSA would have considered a sprag-type one-way clutch bearing suitable for an exercise equipment application, such as a treadmill.” Ex. 1003 ¶¶ 90, 211 (citing Ex. 1018, 52–53 (a catalogue describing a “sprag type one-way clutch” as an option for “exercise equipment”)).

Given the testimony of Dr. Giachetti as to the knowledge of a POSA and the supporting evidence, Petitioner has sufficiently shown for the purposes of institution that it would have been obvious to a POSA to would substitute a one-way sprag type bearing clutch for Magid’s ratchet and pawl one-way mechanism in order to reduce noise and improve durability.

At this stage of the proceeding, Patent Owner's arguments are unpersuasive because they are rigidly focused on the alleged lack of a sufficiently particular disclosure of motivation in Sclater, without taking full account of an ordinarily skilled artisan's "knowledge, creativity, and common sense." *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013). Patent Owner's arguments as to what a POSA would have known are unsupported by any declarant testimony and are mere attorney argument. Mere attorney argument is entitled to little weight.

Based on the current record, we determine that Petitioner's analysis and evidence sufficiently shows that the combination of Schönenberger, Socwell, Magid, and Scalder teaches a safety device as recited by claim.

g) Conclusion as to claim 30

After considering Petitioner's evidence and analysis, and taking into account Patent Owner's arguments, based on the record before us this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claim 30 is unpatentable over Schönenberger, Socwell, Magid, and Sclater.

6. Independent claims 37, 50, and 57

Petitioner relies upon a similar analysis to show that independent claims 37, 50, and 57 are unpatentable as the analysis it relies upon to show claim 30 is unpatentable. *See* Pet. 27–61. We note that Petitioner provides additional explanation for limitations of claims 37, 50, and 57 that slightly differ from claim 30. *See id.*

Patent Owner relies upon the same arguments it made in connection with claim 30. *See generally* Prelim. Resp. (arguing claims 30, 37, 50, and 57 together).

For similar reasons as discussed above, after considering Petitioner's evidence and analysis, based on the record before us this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claims 30, 37, 50, and 37 are unpatentable over Schönenberger, Socwell, Magid, and Sclater.

7. Dependent claims 31–34, 38, 39, 41, 45–49, and 59

Petitioner contends that the additional limitations of dependent claims 31–34, 38, 39, 41, 45–49, and 59 are unpatentable over Schönenberger, Socwell, Magid, and Sclater. Pet. 61–70. At this stage of the proceeding, Patent Owner does not dispute that the combination of Schönenberger, Socwell, Magid, and Sclater disclose the additional limitations. After considering Petitioner's evidence and analysis, based on the record before us this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claims 31–34, 38, 39, 41, 45–49, and 59 are unpatentable over Schönenberger, Socwell, Magid, and Sclater.

F. Ground 2: Unpatentability over Schönenberger, Socwell, Magid, Sclater, and Skowronski

Petitioner contends that claims 44 and 51 are unpatentable over Schönenberger, Socwell, Magid, Sclater, and Skowronski. Pet. 70–75.

Claim 44 depends from claim 37, and claim 51 depends from claim 50. Both claims recite “wherein at least one of the at least one rear running belt pulley and the at least one front running belt pulley are formed from an electrically insulating material.” *Id.* at 37:21–24, 38:11–14.

Skowronski discloses a treadmill having plastic, which is electrically insulative, pulleys that support a belt. Ex. 1030, 6:46–52; Ex. 1003

¶¶ 310–316. Petitioner argues that it would have been obvious to a POSA to form Schönenberger’s pulleys from plastic to make lighter and less expensive pulleys. Pet. 73–75 (citing Ex. 1030, 2:10–15, 7:26–31, 7:34–39; Ex. 1003 ¶¶ 311–316). At this stage of the proceeding, Patent Owner does not dispute that the combination of Schönenberger, Socwell, Magid, and Sclater disclose the additional limitation.

After considering Petitioner’s evidence and analysis, based on the record before us this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claims 41 and 55 are unpatentable over Schönenberger, Socwell, Magid, Sclater, and Showronski.

G. Ground 3: Unpatentability over Schönenberger, Socwell, Magid, Sclater

Petitioner contends that claims 30–34, 37–54, 57, and 59 are unpatentable over Schönenberger, Socwell, Magid and Sclater. Pet. 75–79. This is the same combination of references presented for ground 1. For ground 3 only, Petitioner proposes alternate claim constructions from the District Court Litigation for the terms “shaft,” “safety device” and “substantially prevent” and applies those constructions. Pet. 19, 75. We, thus, consider this to be an alternative ground, which we do not need to reach.

H. Ground 4: Unpatentability over Chickering, Magid, and Sclater

Petitioner contends that claims 30–34, 37–39, 41, 45–49, 57, and 59 are unpatentable over Chickering, Magid, and Sclater. Pet. 79–103.

1. Summary of Chickering

Chickering is a U.S. Patent titled “Endless Belt Exerciser with Accelerating and Decelerating Tread Surfaces” and issued on January 25, 1972. Ex. 1013, codes (45), (54).

Chickering’s Figure 1 is reproduced below.

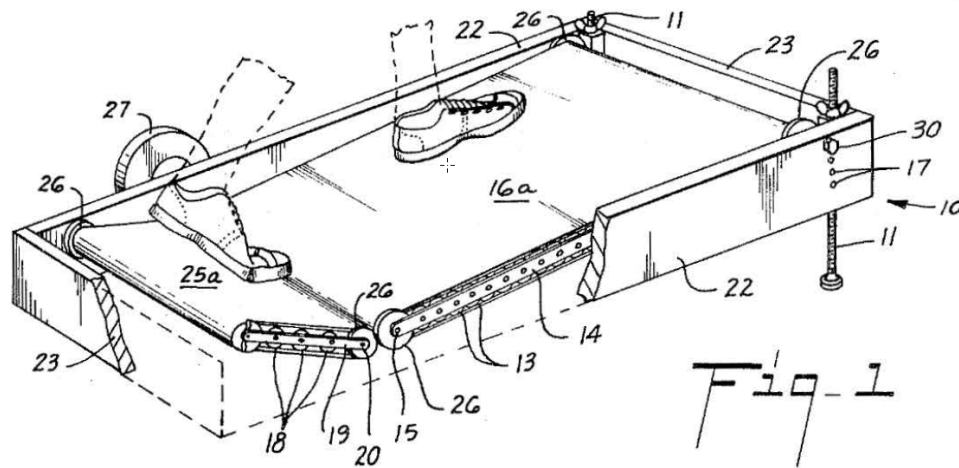


Figure 1 show one embodiment of an exercise device having base 10 formed of two sidewalls 22 and two end walls 23. *Id.* at 1:65–68. “A first series of transverse parallel rollers 13 have their ends journaled in arms 14,” and “[a] second series of transverse parallel rollers 18 have their ends journaled in arms 19.” *Id.* at 2:14–15, 2:18–19. Endless belt 16 is disposed about rollers 13 and endless belt 25 is disposed about rollers 18. *Id.* at 2:15–17, 2:19–21. Arms 14 and 19 are pivotally connected to sidewalls 22, so that the inclination of first and second series of rollers 13 and 18 can be adjusted. *Id.* at 2:2–13, 2:27–31.

Chickering's Figure 3 is reproduced below.

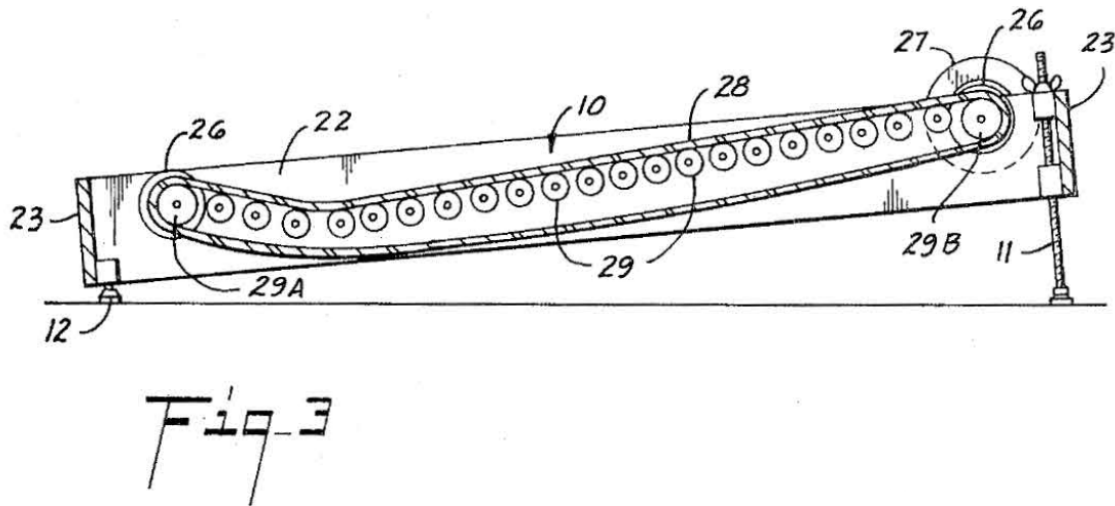


Figure 3 depicts an alternate embodiment having single endless belt 28. *Id.* at 2:73–75. In this embodiment, rollers 29 are journaled in sidewalls 22 of base 10. *Id.* at 3:1–2.

[T]he rollers are so disposed that the forward rollers lie approximately in a plane slanting downwardly from the front of the base, while the rear rollers lie approximately in a plane slanting upward toward the rear of the base 10. Thus, when the endless belt 28 is placed about the rollers, it follows their contour.

Id. at 3:2–8. “When a single belt is used, it may be necessary to use heavier belting material so that the belt will lie flat upon the rollers without being under tension.” *Id.* at 3:11–13.

2. Independent claim 30

Petitioner contends that claim 30 is unpatentable over Chickering, Magid, and Sclater. Pet. 79–97.

*a) A manually powered treadmill, comprising:*⁹

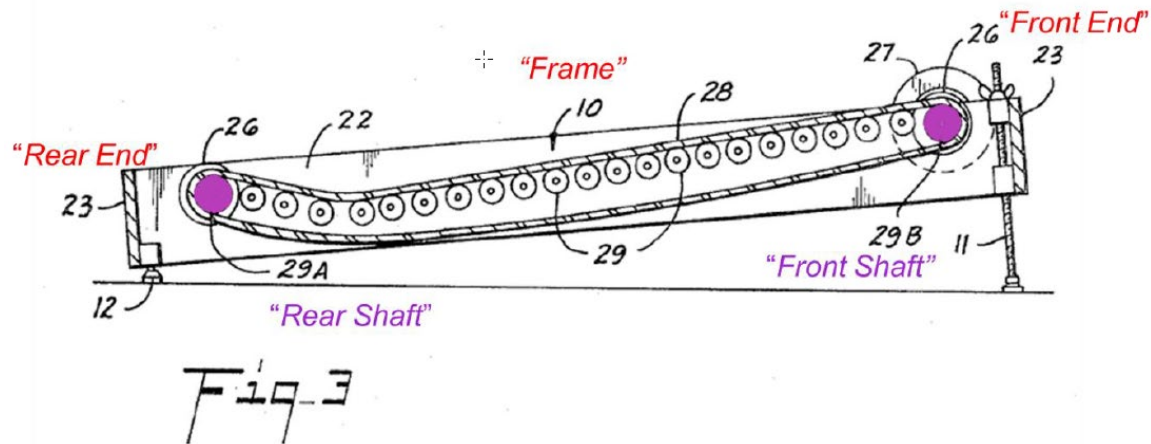
Petitioner contends, and Patent Owner does not dispute, that Chickering discloses a manually powered treadmill. Pet. 79 (citing Ex. 1013, 1:1–7, 2:44–49; Ex. 1003 ¶¶ 354–357, 402, 424); *see generally* Prelim. Resp.

Based on the current record, we determine that Petitioner’s analysis and evidence sufficiently shows that Chickering discloses a manually powered treadmill.

b) a frame having a front end and a rear end positioned opposite the front end; a front shaft coupled to the frame proximate the front end; a rear shaft coupled to the frame proximate the rear end;

Petitioner contends, and Patent Owner does not dispute, that Chickering’s single-belt embodiment discloses a frame having a front end and rear end, a front shaft coupled to the frame at the front end, a rear shaft coupled to the frame at the rear end. Pet. 80–81 (citing Ex. 1013, 1:65–68, 2:75–3:2, 3:11–16; Ex. 1003 ¶¶ 358–360, 361, 363, 365, 403, 405, 425). Petitioner annotated Chickering’s Figure 3 to illustrate this mapping and, the annotated figure is reproduced below.

⁹ On this record, we do not need to determine whether the preamble is limiting as it is undisputed that Chickering discloses a manually powered treadmill.



Ex.1013, Fig.3

Chickering Annotated Figure 3 shows base 10 labeled as “Frame” and front and rear end rollers 29B, 29A labeled as “Front Shaft” and “Rear Shaft” respectively. Pet. 81.

Based on the current record, we determine that Petitioner’s analysis and evidence sufficiently shows that Chickering discloses a frame, a front shaft, and a rear shaft as arranged as recited in claim 30.

c) a plurality of bearings coupled to the frame;

Petitioner contends, and Patent Owner does not dispute, that Chickering discloses journaled rollers 29 (i.e., bearings) coupled to base 10. Pet. 81 (citing Ex. 1013, 2:75–3:23:11–16; Ex. 1003 ¶¶ 360–361, 363, 365, 405).

Based on the current record, we determine that Petitioner’s analysis and evidence sufficiently shows that Chickering discloses a plurality of bearings coupled to the frame.

d) a running belt at least partially supported by the plurality of bearings, wherein the running belt comprises a curved running surface

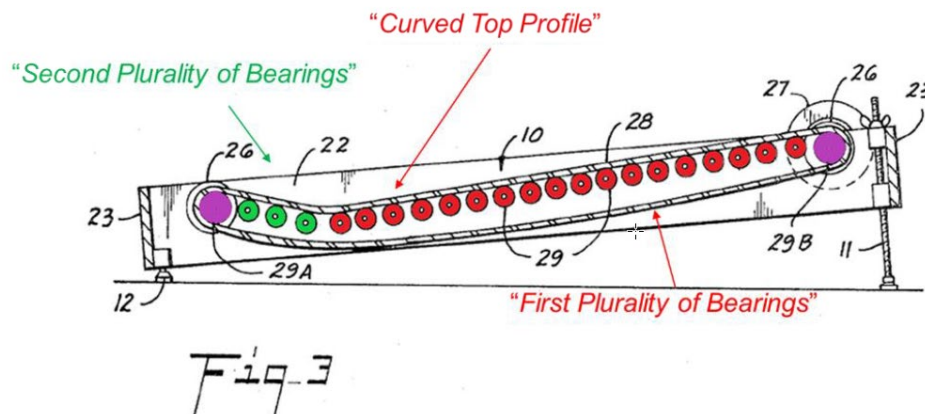
Petitioner maps the claimed running belt to Chickering’s endless belt 28 and points to Chickering’s depiction of its single-belt embodiment in

Figure 3 to show a running belt following a curved running surface. Pet. 83. Dr. Giachetti testifies that Chickering discloses a curved running surface and points to the following paragraph of Chickering for support. Ex. 1003

¶¶ 368–370, 406–408, 427. Chickering states:

An alternate form of the exercising device of the present invention is shown in FIG. 3, wherein a single endless belt 28 forms both the accelerating and decelerating areas. In the device shown in FIG. 3, a single series of rollers 29 are provided journaled in the sidewalls 22 of base 10. However, the rollers are so disposed that the forward rollers lie approximately in a plane slanting downwardly from the front of the base, while the rear rollers lie approximately in a plane slanting upward toward the rear of the base 10. Thus, when the endless belt 28 is placed about the rollers, it follows their contour and provides a forward accelerating area and a rear decelerating area which are inclined from the horizontal with each being lowest at their point of nearest proximity.

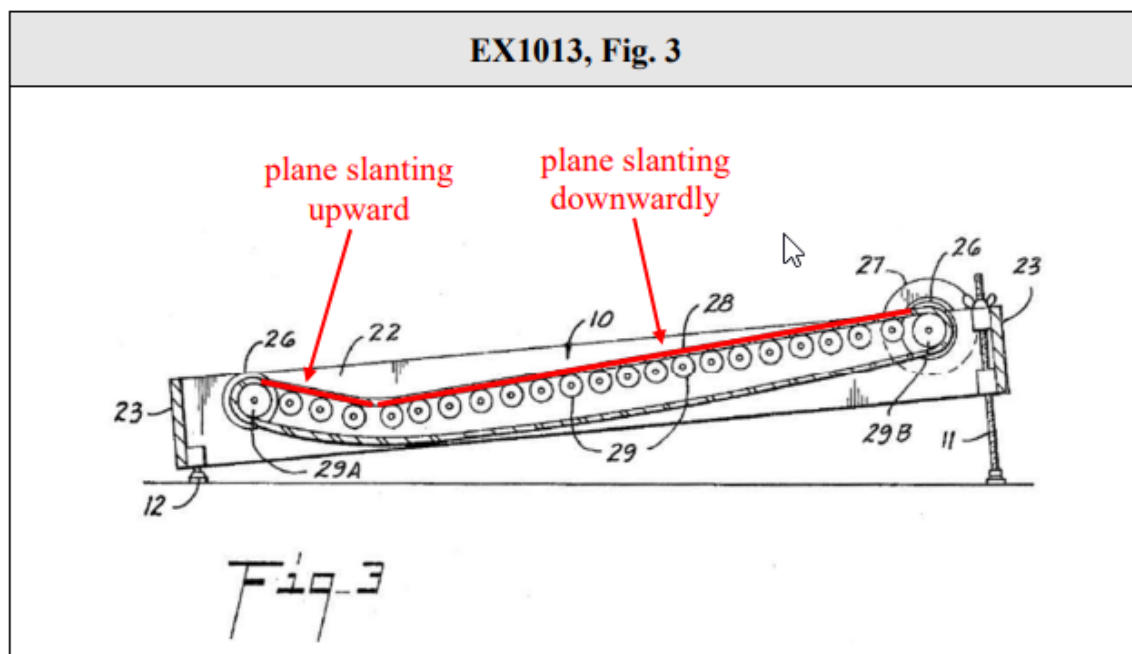
Ex. 1013, 2:73–3:10. Petitioner annotates Chickering’s Figure 3 to illustrate this contour. Petitioner’s Annotated Figure 3 is reproduced below.



Ex.1013, Fig.3

Petitioner's Annotated Figure 3 show the single-belt embodiment with arrow pointing to the curved top profile. Pet. 83.

Patent Owner disputes that Chickering's single-belt embodiment discloses a running belt following a curved running surface. Prelim. Resp. 25–28. Like Petitioner, Patent Owner points to Chickering's disclosure that “the rollers are so disposed that the forward rollers lie approximately in a plane slanting downwardly from the front of the base, while the rear rollers lie approximately in a plane slanting upward toward the rear of the base 10” (Ex. 1013, 3:2–6) and argues that because “endless belt 28 is ‘placed about the rollers’ (*id.*, 3:6–8), a POSA would further understand that Chickering's alternative, single-belt embodiment also discloses a multi-planar running surface rather than a curved running surface.” Prelim. Resp. 27. Patent Owner also annotates Chickering's Figure 3 to illustrate this point and Patent Owner's annotated Figure 3 is reproduced below. *Id.*



Patent Owner's annotated Figure 3 includes a line along the top of rear rollers 29 to show a plane slanting upward and a line along the top of forward rollers 29 to show a plane slanting downwardly along forward rollers 29. *Id.*

At this stage of the proceeding, we determine that Petitioner has sufficiently shown that Chickering's endless belt 28 has a curved running surface. Chickering describes belt 28 as following the contour of the rollers with areas that are inclined from the horizontal and meet at their lowest point. Ex. 1013, 2:73–3:10. As can be seen in both Petitioner's Annotated Figure 3 and Patent Owner's Annotated Figure 3, reproduced above, there appears to be a curve in belt 28 at the area where the downwardly slanting plane of the forward rollers meets the upwardly slanting plane of the rear rollers.

Further, Petitioner's assertion that endless belt 28 has a curved running surface is supported by the testimony of Dr. Giachetti. Pet. 82–83 (citing Ex. 1033 ¶ 426, 427). At this stage of the proceeding, Patent Owner has not provided any sufficient evidence to support its assertion as to the what a POSA would understand from Chickering's disclosure and Figure 3. And, mere attorney argument is entitled to little weight. *See Elbit Sys.*, 881 F.3d at 1359; *see also Icon Health & Fitness*, 849 F.3d at 1043.

Based on the current record, we determine that Petitioner's analysis and evidence sufficiently shows that Chickering discloses a running belt supported by the first bearing rail and the second bearing rail and disposed about the front shaft and the rear shaft, wherein the running belt follows a curved running surface.

- e) *a safety device coupled to the frame and the running belt, the safety device having a first rotatable element and a second rotatable element, wherein at least one of the first and second rotatable elements are adapted for rotation relative to the frame; wherein the running belt and one of the first and second rotatable elements of the safety device freely rotate in a first direction of rotation relative to the other of the first and second rotatable elements of the safety device, but interference between the safety device and at least one of the first and second rotatable elements substantially prevents rotation in a second direction of rotation, opposite the first direction of rotation, of the running belt and the one of the first and second rotatable elements relative to the other of the one of the first and second rotatable elements*

Petitioner relies upon Magid's unidirectional control means 6, 6' to teach the claim safety device. Pet. 84–85 (citing Ex. 1012, 4:46–59). In one embodiment, unidirectional control means 6, 6' is a ratchet and pawl mechanism attached to either the front or rear rollers. Ex. 1012, 4:46–59, Figs. 2, 5.

Petitioner contends that “[i]t would have been obvious to a POSA to combine the manual curved treadmill disclosed in Chickering with the known technique of a one-way clutch to prevent belt motion in a forward direction as discloses in Magid.” *Id.* at 85 (citing Ex. 1003 ¶¶ 432–442). Petitioner argues that a POSA would have made such a combination to prevent a user from falling off the treadmill while mounting or dismounting. *Id.* at 86–88. According to Petitioner,

A POSA would have been motivated to modify Chickering to include Magid's control means 6, 6' mounted to the front roller or the rear roller . . . , to permit only unidirectional belt movement to reduce the risk of a user stepping onto the belt and losing their balance when the belt moves forward.

Pet. 88 (citing Ex. 1003 ¶¶ 439–440 (supporting testimony of Dr. Giachetti)).

Based on the current record, we determine that Petitioner’s analysis and evidence sufficiently shows that a POSA would have modified Chickering to include a safety device as taught by Magid in order to reduce the risk of a user falling.

A ratchet and pawl clutch, however, does not have a third element to create interference as required by claim 1. *See* Pet. 90. Petitioner asserts that a one-way clutch that works by creating interference is taught by Sclater’s sprag-type one-way bearing assembly that includes sprags with rolling elements, such as cylindrical rollers or balls, an inner race, and an outer race surrounding the inner race. *Id.* at 90–93 (citing Ex. 1017, 312, 318; Ex. 1003 ¶¶ 378–383). Petitioner further asserts that wedging between the sprags and the inner and outer races prevents rotation of the inner race in an opposite direction and would prevent the movable surface 1 from moving forward. *Id.* at 92 (citing Ex. 1017, 318; Ex. 1003 ¶ 384).

Petitioner argues that Magid’s “[r]atchet and pawl clutch” makes noise during operation and Sclater’s “friction-type clutch” is quieter. Pet. 93; Ex. 1003 ¶ 444. Petitioner contends a “POSA would have considered a sprag-type one-way clutch bearing for an exercise equipment application, such as a treadmill” and “would have known how to replace Magid’s control means with Sclater’s one-way bearing assembly.” Pet. 94–95 (citing Ex. 1018, 52–53; Ex. 1003 ¶ 447).

Based on the record at this stage of the proceeding, Petitioner’s evidence sufficiently shows that it would have been obvious to a POSA to substitute Sclater’s one-way sprag-type bearing for Magid’s ratchet and pawl

one-way mechanism to obtain predictable results, *e.g.*, reduced noise and improved durability.

Patent Owner argues that a POSA would not combine Chickering, Magid, and Sclater for substantially the same reasons Patent Owner argues that a POSA would not combine Schönenberger, Socwell, Magid, and Sclater. *See* Prelim. Resp. 5–15. For similar reasons as discussed above in connection with claim 30 for ground 1, which we will not repeat here, Patent Owner’s arguments are unpersuasive.

Based on the current record, we determine that Petitioner’s analysis and evidence sufficiently shows that the combination of Chickering, Magid, and Sclater teaches a safety device as recited by claim 30.

f) Conclusion as to claim 30

After considering Petitioner’s evidence and analysis, and taking into account Patent Owner’s arguments, based on the record before us this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claim 30 is unpatentable over Chickering, Magid, and Sclater.

3. Independent claims 37, 50, and 57

Petitioner relies upon a similar analysis to show that independent claims 37, 50, and 57 are unpatentable as the analysis it relies upon to show claim 30 is unpatentable. *See* Pet. 79–97. We note that Petitioner provides additional explanation for limitations of claims 37, 50, and 57 that slightly differ from claim 30. *See id.*

Patent Owner relies upon the same arguments it made in connection with claim 30. *See generally* Prelim. Resp. (arguing claims 30, 37, 50, and 57 together).

For similar reasons as discussed above, after considering Petitioner's evidence and analysis, based on the record before us this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claims 37, 50, and 57 are unpatentable over Chickering, Magid, and Sclater.

4. *Dependent claims 31–34, 38, 39, 41, 45–49, and 59*

Petitioner contends that the additional limitations of dependent claims 31–34, 38, 39, 41, 45–49, and 59 are unpatentable over Chickering, Magid, and Sclater. Pet. 97–103. At this stage of the proceeding, Patent Owner does not dispute that the combination of Chickering, Magid, and Sclater disclose the additional limitations. After considering Petitioner's evidence and analysis, based on the record before us this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claims 31–34, 38, 39, 41, 45–49, and 59 are unpatentable over Chickering, Magid, and Sclater.

III. CONCLUSION

After considering the evidence and arguments presented in the Petition and Preliminary Response, we determine that the information presented shows a reasonable likelihood that Petitioner would prevail in establishing that at least one of claims 30–34, 37–54, 57, and 59 are unpatentable. Accordingly, we institute an *inter partes* review on all grounds of unpatentability in the Petition. At this stage of the proceeding, we have not made a final determination with respect to the patentability of any of the challenged claims.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 30–34, 37–54, 57, and 59 of the '884 patent on the unpatentability grounds asserted in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

IPR2023-00843
Patent 10,561,884 B2

FOR PETITIONER:

John M. Halan
Andrew B. Turner
Rebecca J. Cantor
Kyle G. Konz
BROOKS KUSHMAN P.C.
jhalan@brookskushman.com
atruner@brookskushman.com
rcantor@brookskushman.com
kkonz@brookskushman.com

FOR PATENT OWNER:

Richard J. McKenna
Kadie M. Jelenchick
FOLEY & LARDNER LLP
rmckenna@foley.com
kjelenchick@foley.com