

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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LIFECORE FITNESS, LLC d/b/a ASSAULT FITNESS,  
Petitioner,

v.

WOODWAY USA, INC.,  
Patent Owner.

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IPR2023-00836  
Patent 9,039,580 B1

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

PETRAVICK, *Administrative Patent Judge*.

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

I. INTRODUCTION

*A. Background and Summary*

LifeCore Fitness, LLC d/b/a Assault Fitness (“Petitioner”) filed a  
Petition requesting *inter partes* review of claims 1–12, 14, 15, 18, and 25 of  
U.S. Patent No. 9,039,580 B1 (Ex. 1001, “the ’580 patent”). Paper 2

(“Pet.”). Woodway USA, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 5. On October 24, 2023, we instituted this *inter partes* review as to all challenged claims and all grounds presented in the Petition. Paper 6 (“Institution Decision” or “Inst. Dec.”).

After institution, Patent Owner filed a Response to the Petition. Paper 17<sup>1</sup> (“PO Resp.”). Petitioner filed a Reply. Paper 25 (“Pet. Reply”). Patent Owner filed a Sur-reply. Paper 29 (“PO Sur-Reply”). An oral hearing was held on July 24, 2024 and the transcript is entered into the record. Paper 41 (“Tr.”)

We have jurisdiction under 35 U.S.C. § 6. This is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the challenged claims of the ’580 patent. For the reasons discussed below, we determine that Petitioner has established by a preponderance of the evidence that claims 1–12, 14, and 18 are unpatentable and has failed to establish by a preponderance of the evidence that claims 15 and 25 are unpatentable.

### *B. Real Parties in Interest*

Petitioner identifies LifeCore Fitness, LLC d/b/a Assault Fitness as the real party in interest. Paper 22, 1.

Patent Owner identifies Woodway USA, Inc. as the real party in interest. Paper 4, 1.

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<sup>1</sup> The record contains sealed and redacted versions for several papers. We refer to the redacted papers in this decision.

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*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).

Pet. vi; Paper 4, 1.

This proceeding is related to the following *inter partes* reviews:

IPR2023-00843 (U.S. Patent No. 10,561,884 B2), IPR2023-00849 (U.S. Patent No. 10,799,745 B2), and IPR2024-00083 (U.S. Patent No. 11,465,005).

*D. The '580 Patent*

The '580 patent is titled “Manual Treadmill and Methods of Operating the Same” and issued on May 26, 2015. Ex. 1001, code (45), (54).

The '580 patent depicts manual treadmill 10 in Figure 1, which is reproduced below.

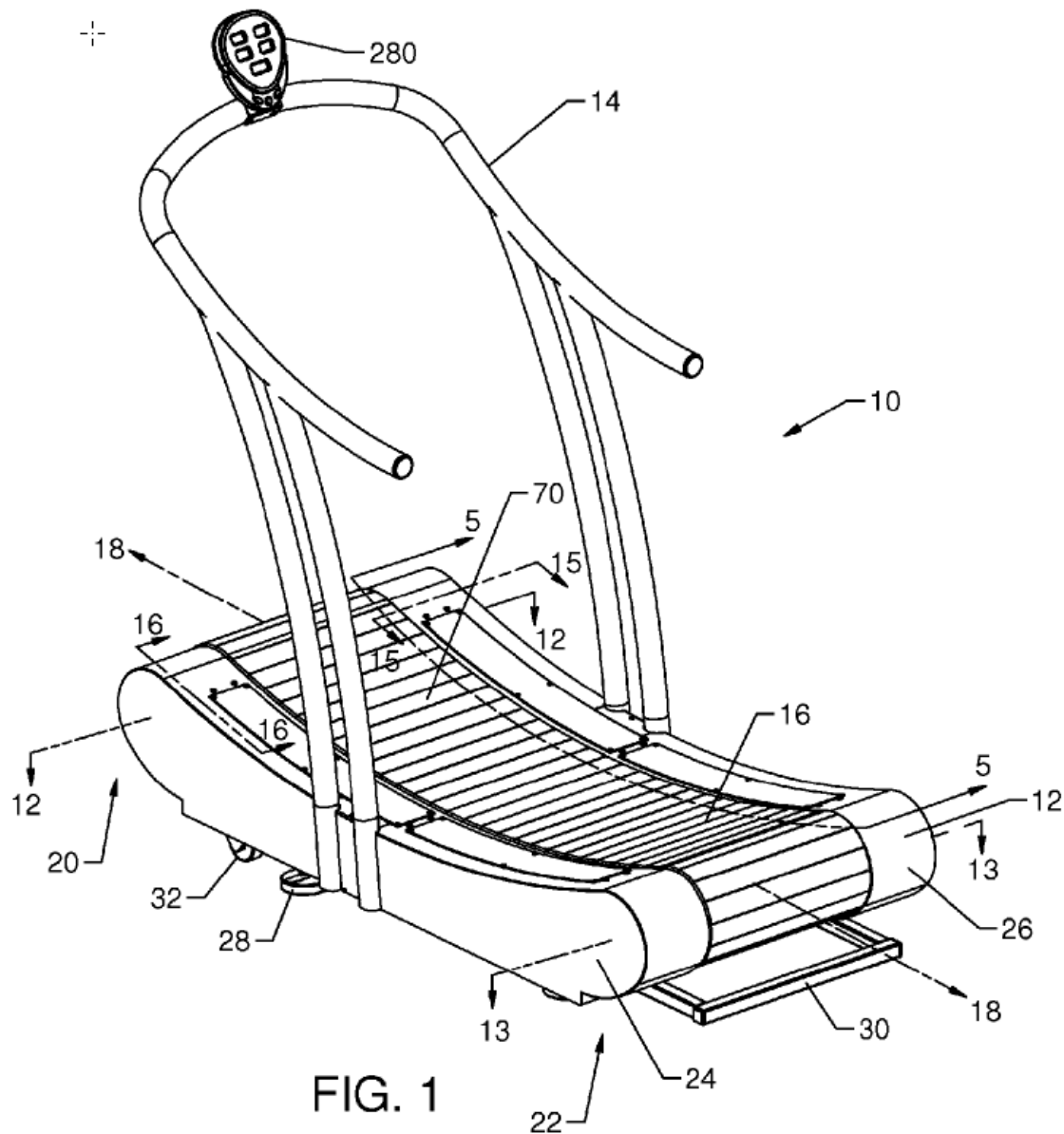


Figure 1 shows manual treadmill 10, having a handrail 14 mounted on a base 12, which supports running belt 16. *Id.* at 3:38–39, 5:20–24. Running belt 16 has a non-planar, curved running surface 70. *Id.* at 6:64–66. As the user runs, running belt 16 generally moves rearward or clockwise. *Id.* at 7:15–33, 28:65–66.



the shape of the top profile can have variations and may not have an entirely smooth contour. *Id.* at 12:32–44, 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 26:65–27:11. Manual treadmill 10, thus, may include safety devices to prevent forward rotation. *Id.* at 27:7–9.

One safety device is depicted in Figure 36 of the '580 patent, reproduced below.

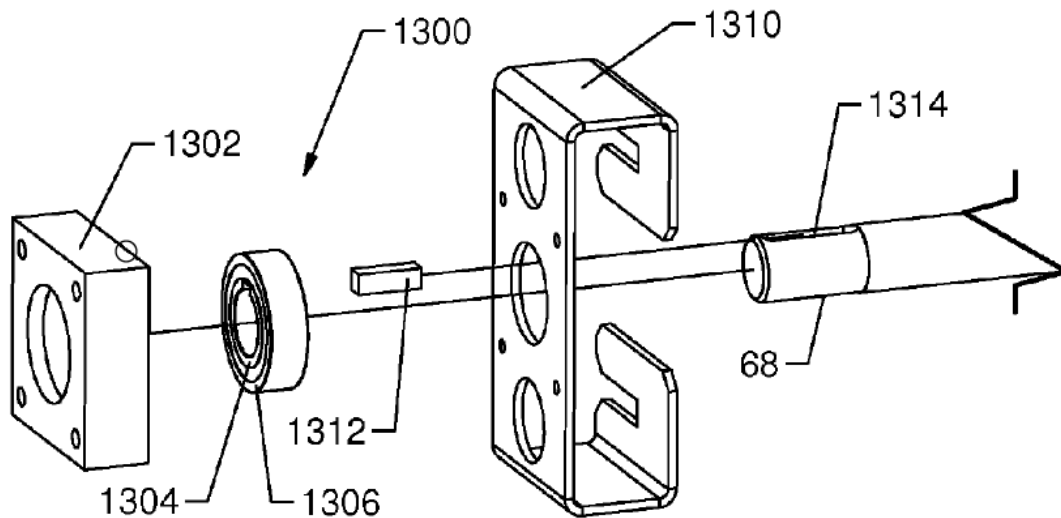


FIG. 36

Figure 36 depicts one embodiment of a one-way bearing assembly. *Id.* at 5:6–8. One-way bearing assembly 1300 restricts motion by permitting rotation of front and rear shaft assemblies 44, 46 in only one direction. *Id.* at 27:11–15. One-way bearing assembly 1300 has inner ring 1304 and an outer ring 1306. *Id.* at 27:18–21. 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. 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 27:20–21, 27:25–29. 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 27:39–41, 27:44–47.

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 keyway continues to attempt to rotate counterclockwise. By preventing the keyway 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 27:48–65.

The '580 patent discloses another embodiment of a safety device having a one-way bearing assembly. *Id.* at 27:66–29:22, Fig. 38.

Additionally, the '580 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 29:23–28.

*E. Illustrative Claim*

Petitioner challenges claims 1–12, 14, 15, 18, and 25 of the '580 patent. Claims 1, 11, and 25 are independent. Claims 2–10 depend directly or indirectly from claim 1, and claims 12, 14, 15, and 18 depend from claim 11.

Claim 1 is illustrative and reproduced below.

1. A manually powered treadmill comprising:
  - a frame having a front end and a rear end positioned opposite the front end;
  - a front shaft rotatably coupled to the frame at the front end;
  - a rear shaft rotatably coupled to the frame at the rear end;
  - a first bearing rail having a plurality of bearings, the first bearing rail attached to a left side of the frame;
  - a second bearing rail having a plurality of bearings, the second bearing rail attached to a right side of the frame;
  - 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; and
  - a safety device coupled to at least one of the front shaft and the rear shaft, wherein the safety device is structured to substantially prevent rotation of at least one of the front shaft and the rear shaft in a first rotational direction while permitting rotation of the at least one of the front shaft and the rear shaft in a second rotational direction opposite the first rotational direction.

Ex. 1001, 32:48–67.



*F. Evidence and Asserted Grounds*

Petitioner asserts that claims 1–12, 14, 15, 18, and 25 would have been unpatentable on the following grounds:

<b>Claim(s) Challenged</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>
1–5, 10, 11, 14, 18, 25	103	Chickering, <sup>2</sup> Magid <sup>3</sup>
6–9, 12	103	Chickering, Magid, Sclater <sup>4</sup>
1–12, 14, 18	103	Chickering, Magid, Sclater
1–5, 10, 11, 14, 15, 18, 25	103	Socwell, <sup>5</sup> Magid
6–9, 12	103	Socwell, Magid, Sclater
1–12, 14, 15, 18, 25	103	Socwell, Magid, Sclater

Petitioner relies upon the Declarations of Robert Giachetti, Ph.D. (Exs. 1003, 1036) to support its patentability analysis.

To support its patentability arguments, Patent Owner relies upon the Declaration of Kim B. Blair, Ph.D. Ex. 2018. To support is secondary consideration arguments, Patent Owner relies upon Eric A. Weber. Ex. 2020.

## II. ANALYSIS

*A. Legal Standards*

“In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v.*

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<sup>2</sup> U.S. Patent No. 3,637,206, issued Jan. 25, 1972 (Ex. 1013).

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

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

<sup>5</sup> U.S. Patent No. 5,897,461, issued Apr. 27, 1999 (Ex. 1011).

*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”)); *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

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 *U.S. 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).

#### *B. Level of Ordinary Skill in the Art*

In determining the level of ordinary skill in the art, various non-exhaustive factors may be considered, including: “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made;

(5) sophistication of the technology; and (6) educational level of active workers in the field.” *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007) (quoting *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696 (Fed. Cir. 1983)).

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 exercise biomechanics, including anthropometry (i.e., the study of human proportion).” Pet. 5 (citing Ex. 1003 ¶¶ 48, 44–49 (supporting testimony of Dr. Giachetti)) (emphasis omitted); Pet. Reply 6–7. Petitioner additionally states that “[t]his description is approximate and additional development experience could make up for less education and vice versa.” Pet. 5. Petitioner argues that experience with exercise biomechanics is important for the design of curved treadmills. Pet. Reply 6–7 (citing Ex. 1036 ¶¶ 17–18).

Patent Owner argues that a POSA “would be a person with a bachelor of science degree in mechanical engineering *or* at least two years of experience in the treadmill industry, including experience and knowledge of the design, construction, testing, and operation of manual treadmills.” PO Resp. 3–4 (emphasis added) (citing Ex. 2018 ¶¶ 65–70 (supporting testimony of Dr. Blair)). Patent Owner argues that its proposed level does not exclude the inventors of the ’580 patent, who do not have a mechanical engineering degree, and is more consistent with the claim language. *Id.*; PO Sur-reply 2–3. Patent Owner, however, states that the patentability analysis would not change whether we adopt Petitioner’s or Patent Owner’s definition. PO Resp. 4.

We do not adopt Patent Owner’s definition of the level of ordinary skill in the art because it is overly broad. During oral argument, Patent Owner clarified that its proposed level of ordinary skill includes a person with a mechanical engineering degree and no experience in the treadmill industry. *See, e.g.*, Tr. 73:1–6. A POSA should have some knowledge related to treadmills as the ’580 patent and the prior art all relate to the field of treadmills. *See generally* Exs. 1001, 1009–1013; *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Both Petitioner and Patent Owner’s definitions encompass a person who has at least a degree in mechanical engineering degree. Pet. 5; PO Resp. 3–4. Petitioner’s definition additionally requires knowledge of exercise biomechanics, including anthropometry, and Patent Owner’s additionally requires knowledge of design, construction, testing, and operation of manual treadmills. Patent Owner argues that “any definition that requires a POSA to be a degreed engineer with ‘a demonstrated understanding of exercise biomechanics, including anthropometry’ . . . — would necessarily exclude certain named inventions.” PO Sur-reply 2–3. We agree with Patent Owner that that experience and knowledge of treadmills is require, but the knowledge of exercise biomechanics is not. Ex. 2018 ¶ 70.

Accordingly, we determine that a POSA would have a Bachelor’s of Science degree in mechanical engineering and at least one year of experience in the treadmill industry, including experience and knowledge of the design, construction, testing, and operation of manual treadmills overall.

However, we note that our analysis and conclusions as to patentability would not change if we had adopted either Petitioner’s or Patent Owner’s definitions. We note that the parties do not indicate that the outcome of our

patentability analysis would differ based on the definition of a POSA. *See* Pet. 5; PO Resp. 4; Pet. Reply 6–7.

### *C. 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). 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).

In the Petition, Petitioner states that claim terms should be construed according to their ordinary and customer meaning. Pet. 15. After the Petition was filed the District Court in the related litigation issued a Markman Order (Ex. 1033) construing the terms “substantially prevent” and “safety device.”

#### *1. “substantially prevent”*

The District Court construed “substantially prevent” as “restricts rotation to allow for only one rotational direction of movement.” Ex. 1033, 16. In this proceeding, we need not construe this claim term as there is no related dispute.

#### *2. “safety device”*

For the ’580 patent, the District Court construed “safety device” as a means-plus-function claim limitation with corresponding structure being “a

one-way bearing assembly, a cam locking system, a taper lock, a user operated pin system, or a band brake system with a lever.” Ex. 1033, 17–22.

Both parties agree that we should adopt the District Court’s construction. PO Resp. 5; Pet. Reply 2. We, thus, construe “safety device” to encompass “a one-way bearing assembly, a cam locking system, a taper lock, a user operated pin system, or a band brake system with a lever” and equivalents.

To the extent necessary, we discuss the meaning of a certain claim term (“running surface”) in our analysis below.

We need not construe explicitly any other claim terms to reach our decision. *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))).

#### *D. Ground 1: Unpatentability over Chickering and Magid*

Petitioner asserts that claims 1–5, 10–11, 14, 18, and 25 are unpatentable over Chickering and Magid. Pet. 22–42.

##### *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.

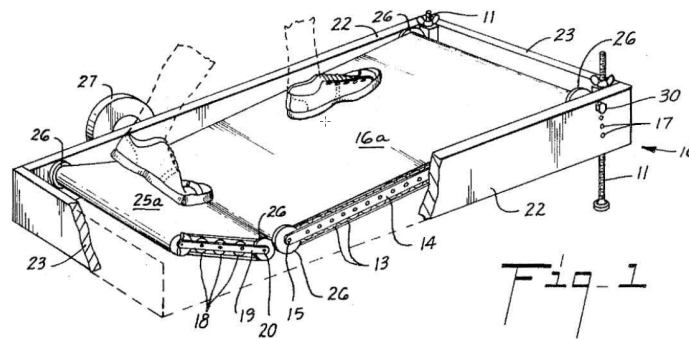


Figure 1 shows one embodiment of an exercise device having base 10 formed of two sidewalls 22 and two end walls 23. *Id.* at 1:65–68. “A first series of transverse parallel rollers 13 have their ends journaled in arms 14,” and “[a] second series of transverse parallel rollers 18 have their ends journaled 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.

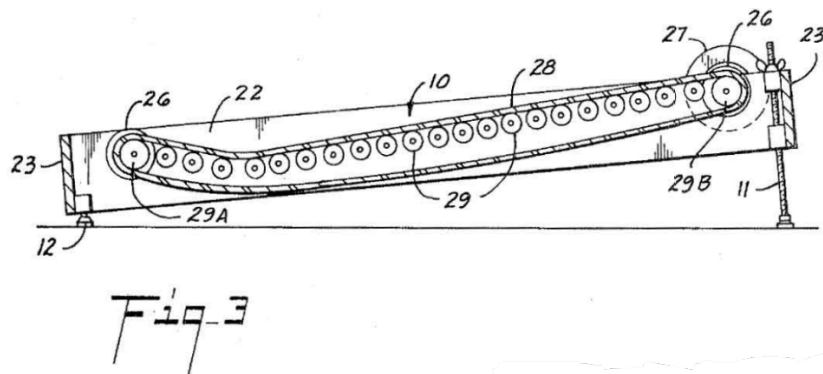


Figure 3 depicts an alternate embodiment having single endless belt 28. *Id.* at 2:73–75. In this embodiment, rollers 29 are journaled in sidewalls 22 of base 10. *Id.* at 3:1–2.

[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. 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.

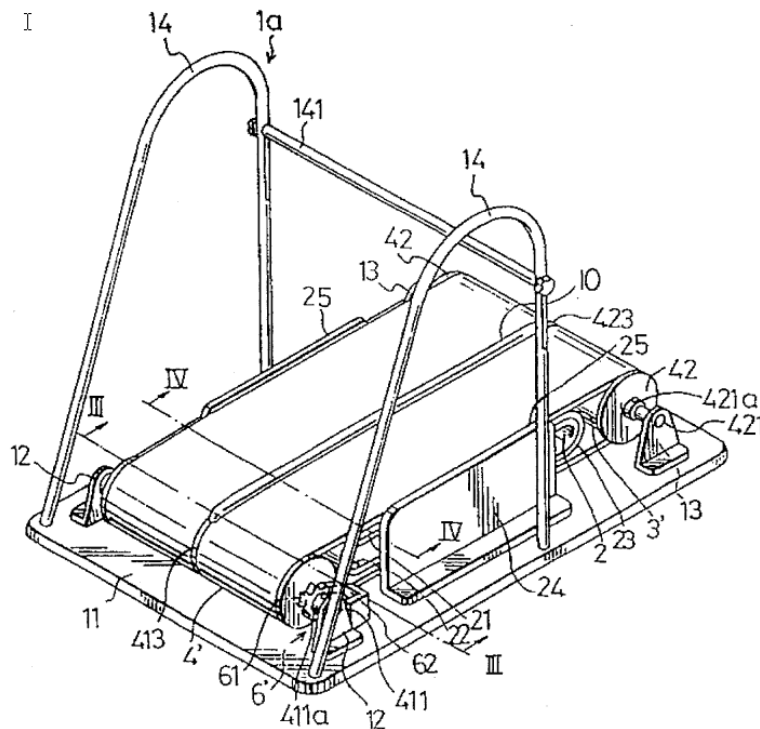


FIG. 2

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.

### 3. *Analysis of Independent Claims 1 and 11*

Petitioner relies upon a similar analysis to show that independent claims 1 and 11 are unpatentable. *See* Pet. 22–42. We note that Petitioner provides additional explanation for limitations of claims 11 that slightly differ from claim 1. *See id.* Similarly, Patent Owner relies upon the same arguments and evidence to dispute Petitioner's showing. *See generally* PO Resp. For efficiency, we focus on the limitations of claim 1 in our analysis below.

*a) A manually powered treadmill comprising:*<sup>6</sup>

Petitioner contends, and Patent Owner does not dispute, that Chickering discloses a manually powered treadmill. Pet. 22 (citing Ex. 1013, 1:1–7, 2:43–48; Ex. 1003 ¶¶ 130–133, 196, 219); *see generally* PO Resp.

We determine that Petitioner’s analysis and evidence sufficiently show that Chickering discloses a manually powered treadmill.

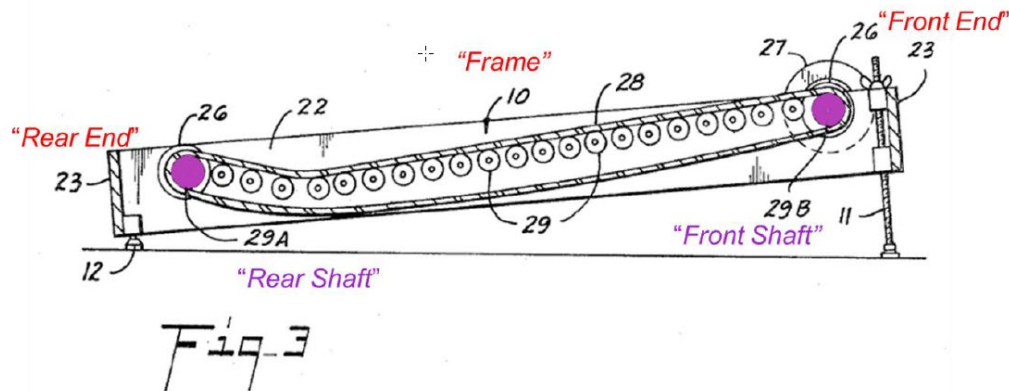
*b) a frame having a front end and a rear end positioned opposite the front end; a front shaft rotatably coupled to the frame at the front end; and a rear shaft rotatably coupled to the frame at the rear end;*

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, and a rear shaft coupled to the frame at the rear end. Pet. 23–26 (citing Ex. 1013, 1:65–68, 2:2–10, 2:14–18, 2:75–3:2, 3:11–16; Ex. 1003 ¶¶ 134–139, 140–142, 197–202, 219).

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<sup>6</sup> We do not need to determine whether the preamble is limiting as it is undisputed that Chickering discloses a manually powered treadmill.

Petitioner annotated Chickering's Figure 3 to illustrate this mapping and, the annotated figure is reproduced below.



Ex.1013, Fig.3

Chickering's 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. *Id.* at 25.

Based on the current record, we determine that Petitioner's analysis and evidence sufficiently show that Chickering discloses a frame, a front shaft, and a rear shaft as arranged as recited in claim 1.

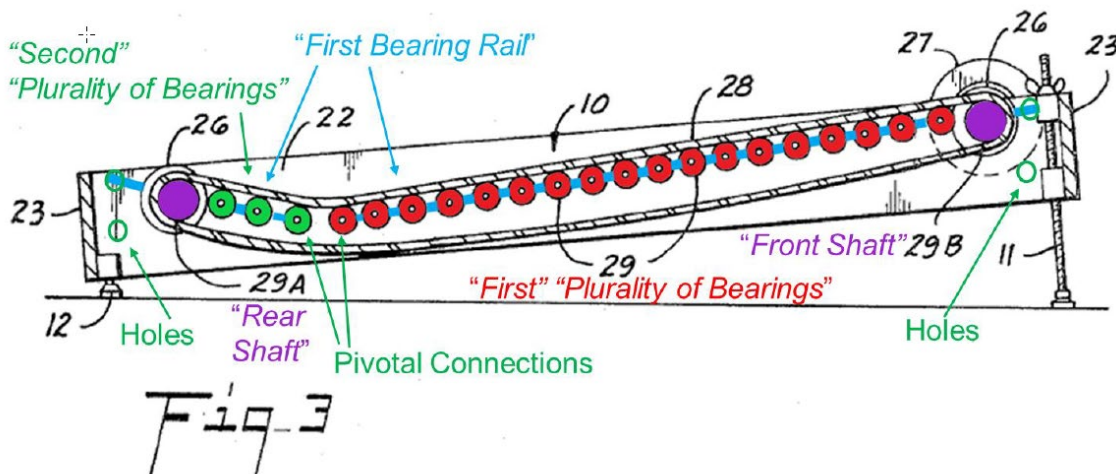
- c) *a first bearing rail having a plurality of bearings, the first bearing rail attached to a left side of the frame and a second bearing rail having a plurality of bearings, the second bearing rail attached to a right side of the frame;*

Petitioner contends, and Patent Owner does not dispute, that a POSA would have modified Chickering's single-belt embodiment to include support arms 14, 19 (i.e., bearing rails) from Chickering's two-belt embodiment. Pet. 29–30. Chickering's two-belt embodiment has support arms 14, 19 pivotally connected to base 10 at pivotal connections 15, 20 for adjusting the inclination of the belt. Ex. 1013, 1:74–2:4. The forward ends of front support arms 14 and the rearward ends of rear support arms 19 are

connected to the frame 10 by pins 30 that extend through holes 17, 24 at different adjustment positions. *Id.* at 2:4–2:12; 2:27–31.

According to Petitioner, a “POSA would have been motivated to modify Chickering’s single belt embodiment of Figure 3 to include support arms 14, 19 . . . to allow a user to adjust the tread surface inclination, as taught with reference to Figure 1.” Pet. 29–30 (citing Ex. 1003 ¶¶ 153, 156 203, 204). Adjusting the inclination is one way to adjust running speed on a manual treadmill. Ex. 1013, 2:44–49.

Petitioner annotated Chickering’s Figure 3, reproduced below, to illustrate the proposed modification.



Ex.1013, Fig.3

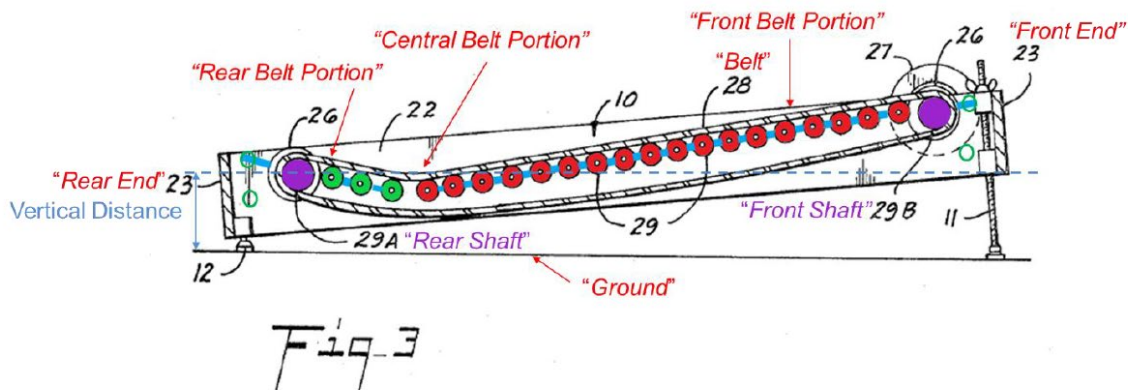
Chickering’s Annotated Figure 3 shows the addition of a first bearing rail, in blue, and pivotal connections and holes, in green. Pet. 30 The first bearing rail is pivotally connected to base 10 at pivotal connections and holes allow for adjusting the inclination of the belt. *Id.* Pins 30 would extend through the different holes to adjust the inclination. *Id.*

We determine that Petitioner sufficiently shows that modifying Chickering’s single belt embodiment of Figure 3 to include support arms 14,

19 and pivotal connections and holes to allow a user to adjust the inclination of the belts, as taught by Chickering's two belt embodiment of Figure 1, would have been obvious to a POSA.

- d) *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*

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. 32. Petitioner annotated Chickering's Figure 3 to illustrate the curved running surface. *See id.* at 32–33. Petitioner's annotated Figure 3 is reproduced below. *Id.* at 33.



**Ex.1013, Fig.3**

Petitioner's annotated Figure 3 depicts belt 28 as having a front belt portion proximate the front end of the frame, a rear belt portion proximate the rear end of the frame, and a central belt portion, positioned vertically closer to a ground surface supporting the frame than the front and rear belt portions. *Id.* Petitioner contends that these portions follow a curved running surface. *Id.*

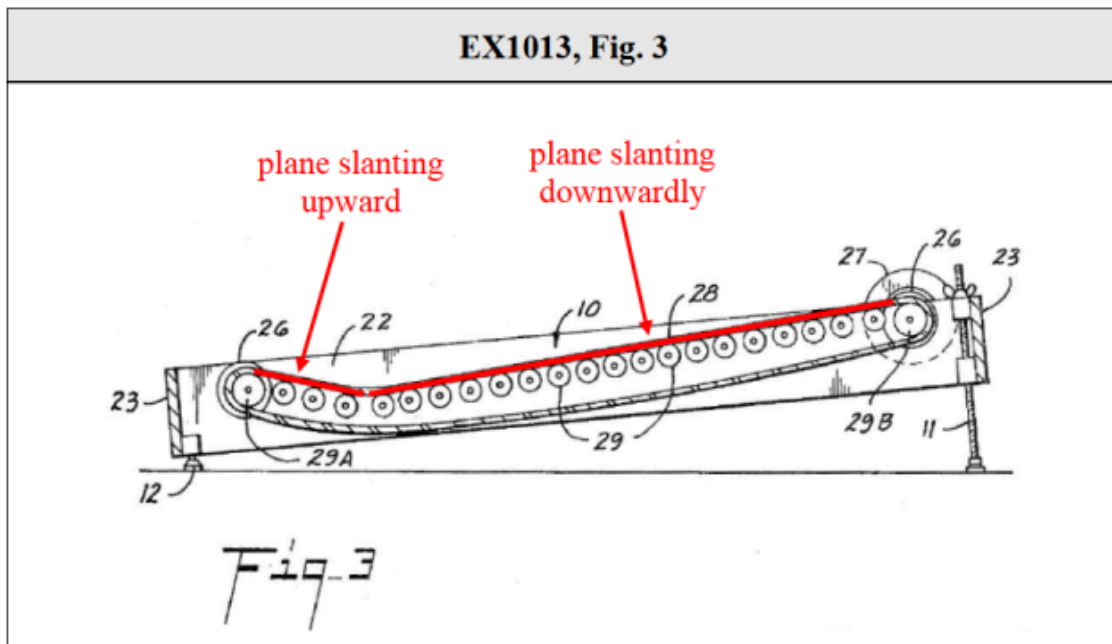
Dr. Giachetti testifies that Chickering discloses a curved running surface and points to the following paragraph of Chickering for support. Ex. 1003 ¶ 161.

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.

Patent Owner disputes that Chickering’s single-belt embodiment discloses a running belt following a curved running surface. PO Resp. 7–13. 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 “[b]ecause the single endless belt 28 ‘follows’ the planes of these rollers when it is ‘placed about the rollers’ ([Ex. 1013] 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.” PO Resp. 9–8.

Patent Owner annotates Chickering's Figure 3 to illustrate this point and Patent Owner's annotated Figure 3 is reproduced below. *Id.* at 10.



Patent Owner annotated Chickering's Figure 3 to include 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.*

Relying upon the testimony of Dr. Blair, Patent Owner argues that the claimed running surface is a surface with which a runner's feet are intended to make contact when using a treadmill and, in Chickering, a runner's feet is not intended to contact the belt at the area where the forward rollers meet the rearward rollers. PO Resp. 11–13 (citing Ex. 2018 ¶¶ 86–87); *see also* PO Sur-reply 9–10. Citing a description of Chickering's two-belt embodiment, Patent Owner argues that there would be a brief instance where a runner's feet would not be contact with endless belt 28 of the one-belt embodiment. PO Resp. 11–12 (citing Ex. 1013, 2:50–58). Patent Owner, thus, argues that Chickering does not disclose a curved running surface. *Id.* at 13.

Petitioner responds that the claims do not require that the claimed running surface is a surface with which a runner's feet are intended to make contact when using a treadmill. Pet. Reply 8–9. Petitioner argues that “Chickering discloses that the single belt requires heavier belting material whose properties require a more gradual curvature” and “[a] POSA would have understood this disclosure in Chickering to teach that a user would contact the curved area of the running surface.” *Id.* (citing Ex. 1013, 3:11–18, Ex. 1036 ¶¶ 23–25).

We agree with Petitioner that Chickering's single-belt embodiment discloses a curved running surface, as recited by claim 1. Chickering describes endless 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 from Petitioner's annotated Figure 3 of Chickering, the rollers meet at their lowest portion (i.e., the central portion) and endless belt 28 is depicted as curved at that point. *Id.* at Fig. 3. This is consistent with Chickering's disclosure that the single-belt embodiment needs heavier belting and consistent with Dr. Giachetti's testimony that a POSA would know that heavier belting requires a larger turn radius. *Id.* at 3:11–18; Ex. 1036 ¶¶ 23–25. On cross-examination, Dr. Blair testifies that “the running belt would be bending in a very, very small curve at that point to follow those trajectories, the two planes.” Ex. 1038, 24:23–25.

We find Patent Owner's arguments and the testimony of Dr. Blair to be unpersuasive, because we do not agree that the claimed running surface is required to be a surface with which a runner's feet are intended to make contact when using a treadmill.

Dr. Blair testifies that “[a] POSA would understand a treadmill's ‘running surface’ to be a surface that a runner's feet would typically make



contact when the user is running on the treadmill during normal use” and that, because a runner’s feet is not intended to contact the belt at the area where the forward rollers meet the rearward rollers, that area is not part of the running surface. Ex. 2018 ¶¶ 86–88. Dr. Blair’s testimony, however, contains no sufficient explanation to support his conclusion of what a POSA would understand by the term “running surface.” *See id.* ¶ 87.

Further, Dr. Blair’s testimony is inconsistent with the language of claim 1 and 11. Claim 1 recites: “the running belt follows a curved running surface.” Ex. 1001, 32:59–60. The language of claim 1 does not require the running belt’s running surface to only be portions that the runner typically or is intended to run upon. Independent claim 11 similarly recites:

the running belt includes a front belt portion proximate the front end, a rear belt portion proximate the rear end, and a central belt portion is positioned vertically closer to a ground surface supporting the frame than the front and rear belt portions such that the running belt follows a curved running surface.

*Id.* at 33:55–61. The language of claim 11 also does not require the running belt’s running surface to only be portions that the runner typically or is intended to run upon. Claim 11 only recites that the running belt include portions proximate the front end and rear end of the treadmill’s frame and a central belt portion that is closer to the ground. *Id.*

Dr. Blair’s testimony is also inconsistent with the ’580 patent which does not describe the running surface as being limited to the surface that a runner’s feet would typically make contact when the user is running on the treadmill during normal use. *See generally* Ex. 1001; Pet. Reply 8. The ’580 patent describes numerous examples of continuous running surfaces with a wide variety of contours. *See* Ex. 1001, Figs. 7a–7j (depicting side schematic views of the profiles of running surfaces (*id.* at 3:55–60)). The

'580 patent describes running surface as having portions adjacent to the front and rear shafts assemblies 44 and 46 and a central portion there between. *Id.* at 6:64–7:5. The '580 patent describes the running surface as generally divided into three general regions—“the front portion 72, which is adjacent to the front shaft assembly 44, the rear portion 74, which is adjacent to the rear shaft assembly 46, and the central portion 76, which is intermediate the front portion 72 and the rear portion 74”—which can have different geometric configurations. *Id.*; *see also id.* at 10:41–49 (describing alternative embodiment have more or less than three regions). The '580 patent discloses a number of geometric configurations of the running surface's portions, including a concave curve integrated with linear portions. *Id.* at 10:17–38; *see also id.* at 3:31–35; 9:26–32 (describing the possible geometric configurations as concave, convex, linear and various combination thereof); 10:62–11:17 (describing that the relative length of the front, central, and rear portions may vary).

Given the language of claims 1 and 11 and the disclosure of the '580 patent, we are not persuaded by the insufficiently supported testimony of Dr. Blair, the claim term “running surface” requires a surface with which a runner's feet are intended to make contact when using a treadmill.

Petitioner has sufficiently shown 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 at least one of the front shaft and the rear shaft, wherein the safety device is structured to substantially prevent rotation of at least one of the front shaft and the rear shaft in a first rotational direction while permitting rotation of the at least one of the front shaft and the rear shaft in a second rotational direction opposite the first rotational direction*

Petitioner relies upon Magid's unidirectional control means 6, 6'<sup>7</sup> to teach the claim safety device. Pet. 34 (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; Ex. 1003 ¶ 166.

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 disclosed in Magid.” Pet. 38 (citing Ex. 1003 ¶¶ 230–243); *see also* Pet. Reply 13–15. Petitioner argues that a POSA would have made such a combination to prevent a user from falling off the treadmill while mounting or dismounting. Pet. 38–39. 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.

*Id.* at 41 (citing Ex. 1003 ¶¶ 239–240); *see also* Pet. Reply 14–15 (citing Ex. 1036 ¶¶ 53–56).

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<sup>7</sup> We note that Patent Owner does not dispute that Magid's unidirectional control means 6, 6' meets the District Court's construction of a safety device.

Patent Owner first argues that a POSA would not combine Chickering and Magid because Magid teaches away from the combination. PO Resp. 28–34. According to Patent Owner, if Chickering were combined with Magid to modify Magid to have a single belt, Magid’s feature of “‘preventing the action of the user’s left foot from influencing the action of his right foot and vice-versa’ would be lost.” *Id.* at 29 (quoting Ex. 1012, 5:19–27). Patent Owner also argues that a POSA would not combine Chickering and Magid because Chickering’s primary objective is for a user to exercise without relying upon handles, railing, belts to maintain balance. *Id.* at 32–33 (citing Ex. 1013, 1:40–47).

“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994).

We are not persuaded by Patent Owner that either of Chickering or Magid teaches away from the combination proposed in the Petition — modifying Chickering’s single-belt embodiment to include Magid’s unidirectional control mean 6, 6’ (Pet. 41). Patent Owner points to differences between Chickering and Magid, but we are not persuaded that those differences – number of belts, use as a therapeutic device as opposed to a recreational exercise device, use of handles – would discourage a POSA from making the proposed combination. Ex. 1036 ¶¶ 57–59.

Much of Patent Owner’s arguments are misplaced because the arguments concern modifying Magid to have a single non-planer belt (*see, e.g.*, PO Resp. 29 (arguing that if Magid was modified to use a single-belt,

Magid’s key feature “would be lost”)) and do not concern the modification proposed in the Petition. Those arguments, thus, are unpersuasive.

Patent Owner next 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 argues that “a POSA would immediately recognize that the Socwell and Chickering devices would have no need for the purported safety device disclosed in Magid” or that a POSA would only look to teaching of other treadmills having curved or multi-planar running surfaces and not to treadmills having flat or uniplanar surfaces. PO

Resp. 33. Patent Owner asserts:

Rather, when looking to improve or modify a curved or multi-planar treadmill like that described in . . . Chickering, . . . , a POSA would examine the teachings of other treadmills having curved or multi-planar running surfaces, not a narrow-use walker device 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.* (citing Ex. 2018, ¶¶ 164–170).

We do not agree with Patent Owner’s characterization of Magid as being narrowly related to two-belt walkers used just for therapy. As Petitioner points out, Magid discloses that its walker can be broadly used by people exercising. Pet. Reply 13–14 (citing Ex. 1036 ¶¶ 48–49); Ex. 1012, 1:53–59, 7:61–67.

Further, we are persuaded by Petitioner and Dr. Giachetti's testimony that a POSA would have combined 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 disclosed in Magid in order to prevent a user from falling off the treadmill while mounting or dismounting. Pet. 38 (citing Ex. 1003 ¶¶ 230–243); *see also* Pet. Reply 13–15 (citing Ex. 1036 ¶¶ 53–56).

We determine that Petitioner's analysis and evidence sufficiently show that the combination of Chickering and Magid teaches a safety device coupled to at least one of the front shaft and the rear shaft, wherein the safety device is structured to substantially prevent rotation of at least one of the front shaft and the rear shaft in a first rotational direction while permitting rotation of the at least one of the front shaft and the rear shaft in a second rotational direction opposite the first rotational direction.

*f) Secondary Considerations*

We have considered Patent Owner's arguments and evidence concerning secondary considerations of evidence, discussed below, as part of our obviousness analysis for this ground. Patent Owner's evidence of secondary considerations, however, do not outweigh Petitioner's showing that claims 1 and 11 would have been obvious over Chickering and Magid.

*g) Conclusion as to claims 1 and 11*

After considering Petitioner's evidence and analysis, and taking into account Patent Owner's arguments and evidence we determine that Petitioner has shown by a preponderance of the evidence that claims 1 and 11 are unpatentable over Chickering and Magid.

4. *Independent claim 25*

Independent claim 25, recites:

wherein the first and second bearing rails *define a curved top profile*;

...

disposing a running belt on the plurality of bearing of the first bearing rail and the second bearing rail such that the running belt follows a top curved running surface corresponding to *the curved top profile of the first and second bearing rails*.

Ex. 1001, 36:8–14 (emphasis added). The language of claim 25, thus, requires the first and second bearing rails to have a curved top profile. We note that this curved top profile recited separately from the curved running surface of the running belt.

Petitioner equates Chickering’s support arms 14 and 19 to the first and second bearing rails and asserts that “the belt follows their curved profile.” Pet. 31–32 (citing Ex. 1013, 2:73–3:10; Ex. 1003 ¶¶ 223–225).

Patent Owner argues that Chickering’s support arms 14 and 19 are planar and do not have any curved components. PO Resp. 13–16 (citing Ex. 1013, 3:4–5, claim 6, Fig. 3).

We agree with Patent Owner that Chickering does not disclose support arms 14 and 19 (i.e., the claimed bearing rails) defining or having a curved top profile, as required by claim 25. Chickering discloses that the rollers 29 of support arms 14 and 19 lie in a plane. Ex. 1013, 3:4–5, claim 6, Fig. 3.

We determine that Petitioner fails to show by a preponderance of the evidence that claim 25 is unpatentable over Chickering and Magid.

5. *Dependent claims 2–5, 10, 14, and 18*

Petitioner contends that the additional limitations of dependent claims 2–5, 10, 14, and 18 are unpatentable over Chickering and Magid. Pet. 42–48. Patent Owner does not dispute that the combination of Chickering and Magid disclose the additional limitations. *See generally* PO Resp.

After considering Petitioner’s evidence and analysis, we determine that Petitioner has shown by a preponderance of the evidence that claims 2–5, 10, 14, and 18 are unpatentable over Chickering and Magid.

*E. Ground 2: Unpatentability over Chickering, Magid, and Sclater*

Petitioner contends that claims 6–9 and 12 are obvious over Chickering, Magid, and Sclater. Pet. 48–61.

1. *Overview 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 302–303. 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. *Id.* at 312.

Sclater further provides “details of overriding clutches” and explains a friction clutch is quieter than a ratchet and pawl. *Id.* at 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.

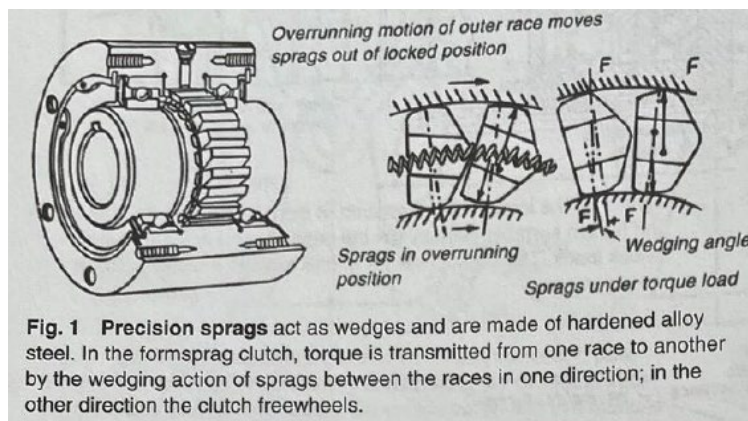


Figure 1 illustrates “precision sprags” which are an example of an overrunning clutch. *Id.* This clutch transmits torque from one race to another by the wedging actions of sprags between the races in one direction and, in the other direction, the races freewheels. *Id.*

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.” *Id.* at 320.

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

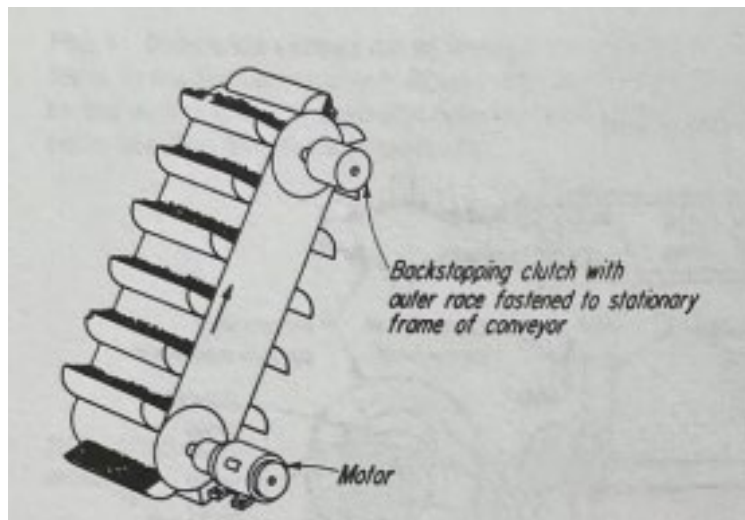


Figure 2 depicts an example application of backstopping. *Id.* at 320. A vertical conveyor carrying buckets and having a motor and a backstopping clutch with an outer race fastened to the stationary frame of the conveyor.

## 2. Analysis of Claims 6–9 and 12

Petitioner asserts that claims 6–9 and 12 are unpatentable over Chickering, Magid, and Sclater. Pet. 48–61. Claims 6–9 depend ultimately from claim 1 and recite the following:

6. The manually powered treadmill of claim 1, wherein the safety device includes a one-way bearing.

7. The manually powered treadmill of claim 6, wherein the one-way bearing includes an inner ring, an outer ring, and a plurality of sprags disposed between the inner ring and outer ring, wherein the plurality of sprags are asymmetric shaped to

substantially prevent rotation of the inner ring in the first rotational direction while permitting rotation of the inner ring in the second rotational direction.

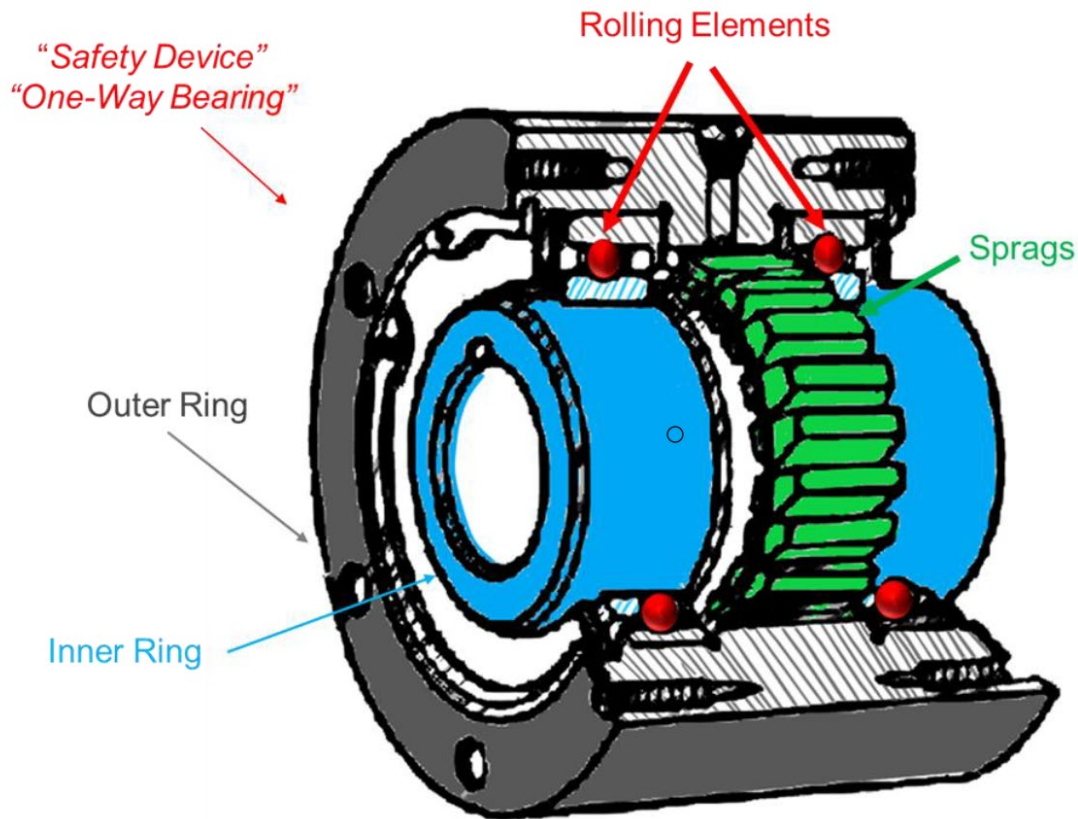
8. The manually powered treadmill of claim 7, further comprising a key that is fixed relative to the inner ring and a keyway formed in the rear shaft, wherein the key is configured to cooperate with the keyway to prevent rotation of the rear shaft in the first rotational direction while permitting rotation of the rear shaft in the second rotational direction.

9. The manually powered treadmill of claim 7, further comprising a key that is fixed relative to the inner ring and a keyway formed in the front shaft, wherein the key is configured to cooperate with the keyway to prevent rotation of the front shaft in the first rotational direction while permitting rotation of the front shaft in the second rotational direction.

Ex. 1001, 33:18–38. Claim 12 depends from claim 11 and recites the same additional limitation as claim 6. *Id.* at 34:1–2. The additional limitations focus on a safety device being a sprag type one-way bearing clutch, as disclosed in some embodiments of the '580 patent. *See id.* at 27:7–28:25; Ex. 1003 ¶¶ 84–88 (describing the workings of a sprag type one-way bearing clutch, which has inner and outer races with sprags filling the space between).

Petitioner relies upon Sclater's sprag type one-way bearing clutch as teaching the additional elements of claims 6–9 and 12. Pet. 48–56 (citing Ex. 1017, 318; Ex. 1003 ¶¶ 251–252).

Reproduced below is Petitioner’s annotated version of a figure from page 318 of Sclater. *Id.* at 59.



Ex.1017 at 318

Petitioner annotated Sclater’s figure to highlight the claimed inner ring, outer ring, rolling elements, and sprags. *Id.* Petitioner contends that the inner ring would be secured to a front or rear roller, such as an axle, with a key/keyway interface. *Id.* at 59 (citing Ex. 1017, 420; Ex. 1003 ¶ 277). Petitioner contends that a POSA would have substituted a one-way sprag type bearing clutch for Magid’s ratchet and pawl one-way mechanism in order to reduce noise and improve durability. *Id.* at 56–61.

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.” PO Resp. 35–45. 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. *Id.* at 36–45.

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.* 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.

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.” Pet. 61; Ex. 1003 ¶ 271.

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).

Sclater teaches using a sprag-type clutch for back stopping a conveyor belt. Ex. 1017, 320. A POSA would know that sprag-type clutches were also known for use in exercise equipment. *See* Ex. 1003 ¶¶ 275, 469, Ex. 1018, 52–53; Ex. 1036 ¶ 68.

Dr. Giachetti testifies that “[s]ome common mechanical clutches include ratchet clutches and cam type one-way clutches, 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” sound is made when the pawl collides with a gear tooth on the ratchet. *Id.* ¶ 272; *see also id.* ¶ 83 (“A ratchet clutch having a pawl that contacts the gear during overrunning 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 overrunning clutch. In addition, it also serves as a roller bearing.

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 ¶ 273 (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.” *Id.* ¶¶ 91, 275 (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 from Sclater, Petitioner has sufficiently shown that it would have been obvious to a POSA to 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.

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).

*a) Secondary Considerations*

We have considered Patent Owner’s arguments and evidence concerning secondary considerations of evidence, discussed below, as part of our obviousness analysis for this ground. Patent Owner’s evidence of secondary considerations, however, do not outweigh Petitioner’s showing

that claims 6–9 and 12 would have been obvious over Chickering, Magid, and Sclater.

*b) Conclusion*

After considering Petitioner’s evidence and analysis, and taking into account Patent Owner’s arguments and evidence, including evidence of secondary considerations, we determine that Petitioner has shown by a preponderance of the evidence that claims 6–9 and 12 are unpatentable over Chickering, Magid, and Sclater.

*F. Ground 3: Unpatentability over Chickering, Magid, and Sclater*

Petitioner contends that claims 1–12, 14, and 18 are unpatentable over Chickering, Magid and Sclater. Pet. 61–65. For this ground, Petitioner proposes alternate claim constructions from the District Court Litigation for the terms “shaft,” “safety device,” and “substantially prevent” and applies those constructions. *Id.* at 15–17. As noted above in our claim construction section, consistent with the District Court, we construed “safety device” to encompass “a one-way bearing assembly, a cam locking system, a taper lock, a user operated pin system, or a band brake system with a lever” and equivalents. Patent Owner does not dispute that Sclater’s sprag-type clutch meets the claimed safety device. *See generally* PO Resp.; PO Sur-reply.

Chickering, Magid, and Sclater is the same combination of references presented for ground 2. Petitioner and Patent Owner rely upon the same arguments and evidence use for grounds 1 and 2. *See generally* Pet., PO Resp. For the same reasons as discussed above with respect to grounds 1 and 2, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–12, 14, and 18 are unpatentable over Chickering, Magid, and Sclater.



#### G. Ground 4: Unpatentability over Socwell and Magid

Petitioner asserts that claims 1–5, 10–11, 14, 15, 18 and 25 are unpatentable over Socwell and Magid. Pet. 65–93.

### 1. 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.

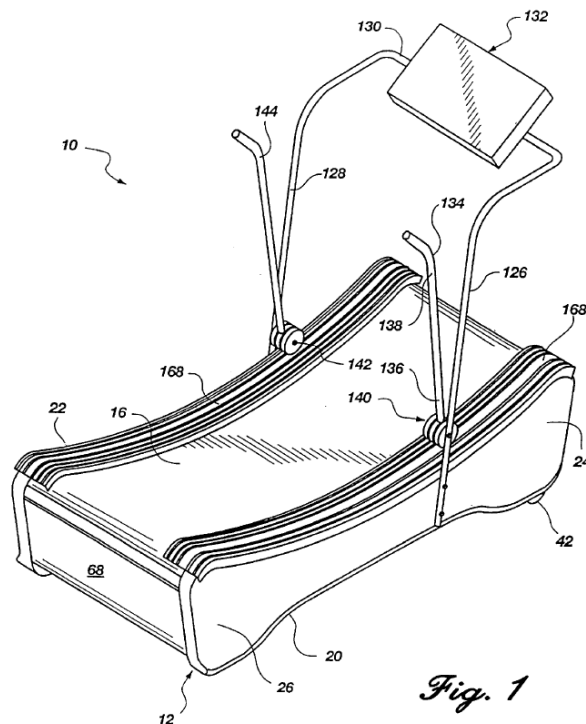


Figure 1 “is a perspective view of one presently preferred embodiment of a curved deck treadmill.” *Id.* at 4:35–36. Curved deck treadmill 10 comprises a support frame 12 having first side 20 and second side 22, with deck 56 between. *Id.* at 5:23–26.

Socwell's Figure 2 is reproduced below.

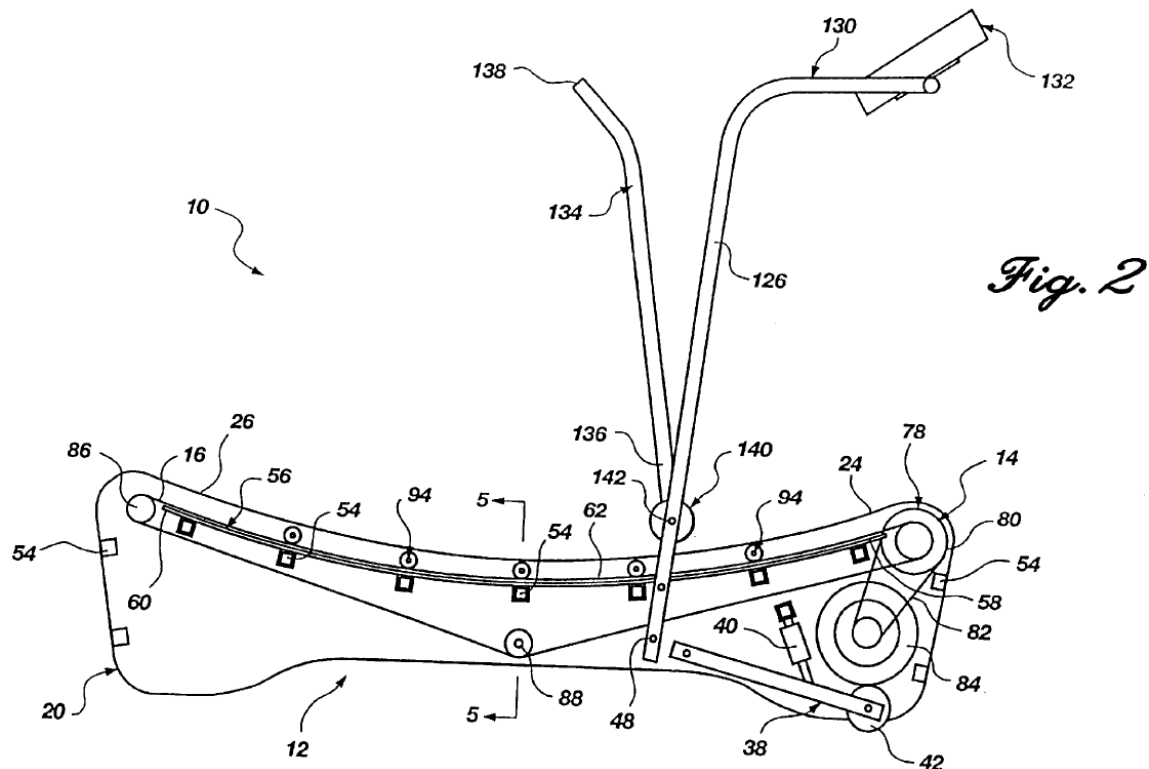
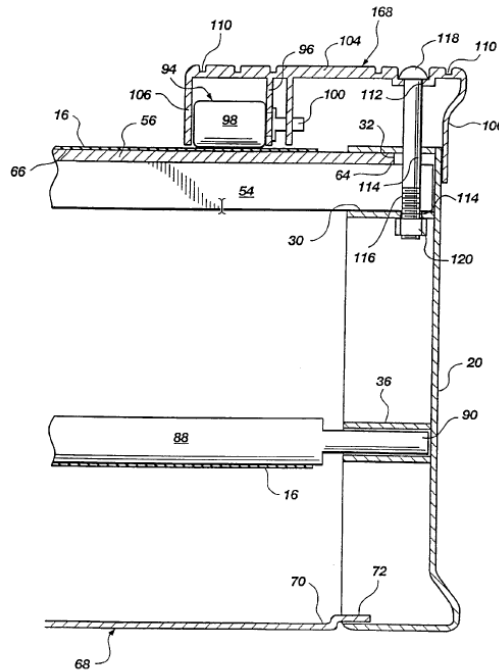


Figure 2 “is a side elevational view of the embodiment of [Figure 1] exposing one presently preferred arrangement of the internal components of the present invention.” *Id.* at 4:38–40. In one embodiment, deck 56 has first end 58, second end 60, and intermediate portion 62 between. *Id.* at 5:26–28. 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.

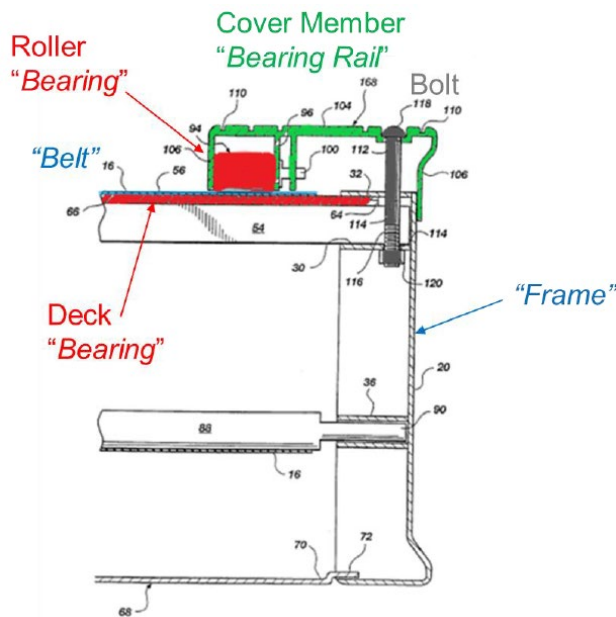
## *2. Analysis of Claims 1 and 11*

Independent claim 1 recites:

a first bearing rail having a plurality of bearings, the first bearing rail attached to a left side of the frame and a second bearing rail having a plurality of bearings, the second bearing rail attached to a right side of the frame; *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.*

Ex. 1001, 32:53–60. Independent claim 11 recites a similar limitation. *Id.* at 33:48–54.

Petitioner maps the claimed first and second bearing rails to Socwell's belt securing assemblies 94 and deck 56 and maps the claimed running belt to belt 16. Pet. 70, 73. Petitioner maps the claimed bearing rails to Socwell's cover members 168. *Id.* To illustrate its mapping, Petitioner annotated Socwell's Figure 5. *Id.* at 71. Petitioner's Annotated Figure 5 of Socwell is reproduced below.



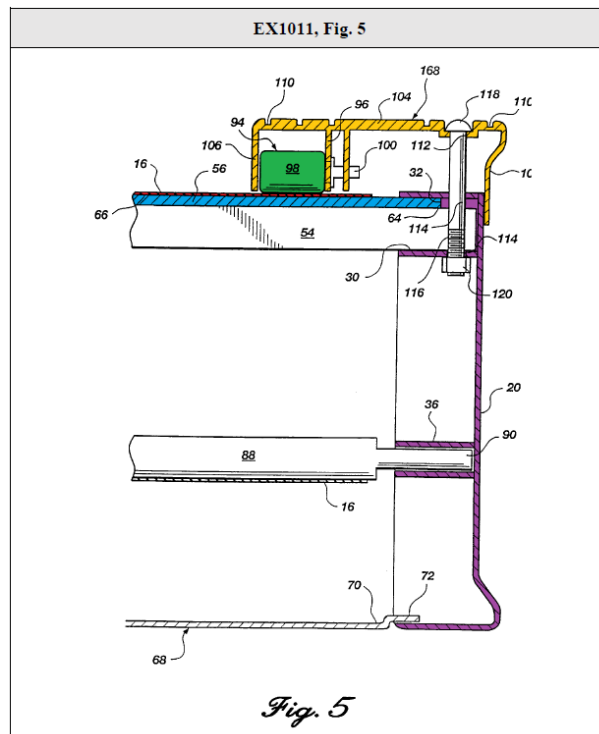
Ex.1011, Fig.5

Petitioner's Annotated Figure 5 shows bearing assembly 94 having cover member 168 labeled as a bearing rail and roller 94 and deck 56 labeled as bearings. Petitioner explains:

Each "belt securing assembly 94 comprises a roller 98 having an axle 100 which rotatably engages a mounting bracket 96 ... such that the roller 98 may engage the belt 16, thereby substantially retaining a side portion of the belt 16 substantially flush with the deck 56." (Ex.1011, 10:17-26; Ex.1003, ¶¶347-348.) The rollers 98 and the deck 56 collectively provide a "*plurality of bearings.*" (Ex.1003, ¶349.)

Pet. 70–71 (alteration in original). Petitioner asserts that “[t]he belt 16 is supported by the curved deck 56 and retained by rollers 98 (*‘plurality of bearings’*).” *Id.* at 75 (citing Ex. 1011, 10:17–26, Fig. 5). In its Reply, Petitioner asserts that cover members 168 indirectly supports deck 56 and roller 98, which in turn supports belt 16. Pet. Reply 12–13 (citing Pet. 75).

Patent Owner argues that Socwell does not disclose that cover member 168 supports running belt 15 via deck 56 because cover member 168 is attached to frame 12 and not deck 56. PO Resp. 23–26. Patent Owner illustrated its argument by annotating Figure 5 of Socwell. *Id.* at 25. Patent Owner’s Annotated Figure 5 is reproduced below.



Patent Owner’s annotated Figure 5 shows cover member 168 in yellow, deck 56 in blue, and frame 12 in purple. As can be seen from the figure, cover member 168 does not connect with deck 56. Ex. 2018, ¶¶ 130–132. Instead, cover member 168 attaches to frame 12 by bolt 118. Ex. 1011, 11:15–29.

We determine that Petitioner’s analysis and evidence sufficiently show that Socwell discloses a first bearing rail having a plurality of bearings, a second bearing rail having a plurality of bearings and a running belt supported by the first bearing rail and the second bearing rail arranged as recited in claim 1.

*a) Conclusion as to claims 1 and 11*

After considering Petitioner’s evidence and analysis, and taking into account Patent Owner’s arguments and evidence, we determine that Petitioner fails to show by a preponderance of the evidence that claims 1 and 11 are unpatentable over Socwell and Magid.

*3. Independent claim 25*

Independent claim 25 recites, “disposing a running belt *on the plurality of bearings* of the first bearing rail and the second bearing rail.” Ex. 1001, 36:10–11 (emphasis added).

Petitioner contends that Socwell’s “belt 16 is supported by the curved deck 56 and retained by rollers 98 (*‘plurality of bearings’*).” Pet. 73–75 (citing Ex.1011, 10:17–26; Fig. 5). Patent Owner responds that Socwell’s running belt 16 is not disposed on the plurality of bearings of the bearing rails. PO Resp. 26–28.

We agree with Patent Owner. At most, Socwell’s belt 16 is disposed on one bearing, deck 56, and not a plurality of bearings. Ex.1011, 10:17–26; Fig. 5.

We determine that Petitioner fails to show by a preponderance of the evidence that claim 25 is unpatentable over Socwell and Magid.

*4. Dependent claims 2–5, 10, 14, and 18*

Claims 2–5, 10, 14, and 18 depend from claims 1 and 11. We determine that Petitioner fails to show by a preponderance of the evidence that claims 2–5, 10, 14, and 18 are unpatentable over Socwell and Magid.

*H. Ground 4: Unpatentability over Socwell, Magid, and Sclater*

Petitioner asserts that claims 6–9 and 12 are unpatentable over Socwell, Magid, and Sclater. Pet. 93–99. Like for ground 2, Petitioner proposed to modify the safety device of the combination of Socwell and Magid to be a sprag type one-way bearing clutch, disclosed in Sclater. *Id.* Petitioner’s rationale for the modification is substantially the same as the rationale for modifying the combination of Chickering and Magid with Sclater in ground 2. *Id.* at 99.

Likewise, Patent Owner’s arguments against the combination of Socwell, Magid, and Sclater are substantially the same as those Patent Owner made against the combination of Chickering, Magid, and Sclater. *See generally* PO Resp.

For substantially the same reasons as discussed above in our analysis of ground 2, which we will not repeat here, we determine that Petitioner has failed to show that claims 6–9 and 12 are unpatentable over Socwell, Magid, and Sclater.

*I. Ground 5: Unpatentability over Socwell, Magid, and Sclater*

Petitioner contends that claims 6–9 and 12 are unpatentable over Socwell, Magid, and Sclater. Pet. 93–99. Claims 6–9 and 12 depend from claims 1 and 11.

We determine that Petitioner fails to show by a preponderance of the evidence that claims 6–9 and 12 are unpatentable over Socwell, Magid, and Sclater. *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) (“[D]ependent claims are nonobvious if the independent claims from which they depend are nonobvious.”).

*J. Ground 6: Unpatentability over Socwell, Magid, and Sclater*

Petitioner contends that claims 1–12, 14, 15, 18 and 25 are unpatentable over Socwell, Magid, and Sclater. Pet. 99–102. These are the same combination of references presented for ground 5. For ground 6, Petitioner proposes alternate claim constructions from the District Court Litigation for the terms “shaft,” “safety device,” and “substantially prevent” and applies those constructions. *Id.*

For the same reasons as discussed with respect to ground 4, we determine that Petitioner fails to show by a preponderance of the evidence that claims 1–12, 14, 15, 18 and 25 are unpatentable over Socwell, Magid, and Sclater.

*K. Secondary Considerations of Nonobviousness*

*1. Legal Standards*

Objective evidence of non-obviousness “may often be the most probative and cogent evidence in the record” and “may often establish that an invention appearing to have been obvious in light of the prior art was not.” *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012). Thus, notwithstanding what the teachings of the prior art would have suggested to one skilled in the art, secondary considerations (objective evidence of nonobviousness) may



lead to a conclusion that the challenged claims would not have been obvious. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). Thus, our obviousness analysis includes consideration and weighing of Patent Owner’s indicia of nonobviousness.

In order to accord substantial weight to secondary considerations in an obviousness analysis, “the evidence of secondary considerations must have a ‘nexus’ to the claims, *i.e.*, there must be ‘a legally and factually sufficient connection’ between the evidence and the patented invention.” *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019) (quoting *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988)); *Quanergy Sys., Inc. v. Velodyne Lidar USA, Inc.*, 24 F.4th 1406, 1417 (Fed. Cir. 2022).

Although the patent owner bears the initial burden of proving a nexus (*WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999)), a presumption of nexus may be appropriate if the patent owner shows “the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Polaris Indus, Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000) (emphasis added)); *Quanergy*, 24 F.4th at 1417. On the other hand, “[w]hen the [product] is not coextensive with the patented invention—for example, if the patented invention is only a component of a commercially successful machine or process,” the patent owner is not entitled to a presumption of nexus. *Demaco*, 851 F.2d at 1392.

A patent owner may establish nexus, either through (1) the use of a rebuttable presumption that arises when certain conditions are met or (2) a direct showing of nexus.

2. *Rebuttable Presumption of Nexus*

In the first, a patent owner may rely on a rebuttable presumption of nexus as follows:

As first recognized in *Demaco* . . . , a patentee is entitled to a rebuttable presumption of nexus between the asserted evidence of secondary considerations and a patent claim if the patentee shows that the asserted evidence is tied to a specific product and that the product “is the invention disclosed and claimed.” 851 F.2d at 1392 (emphasis added). That is, presuming nexus is appropriate “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000)) . . .

. . . Whether a product is coextensive with the patented invention, and therefore whether a presumption of nexus is appropriate in a given case, is a question of fact.

*Fox Factory, Inc. v. SRAM LLC*, 944 F.3d 1336, 1373 (Fed. Cir. 2019).

The court in *Fox Factory* further explained, with respect to a presumption of nexus, that “the degree of correspondence between a product and a patent claim falls along a spectrum,” and that “[a]lthough we do not require the patentee to prove perfect correspondence to meet the co-extensiveness requirement, what we do require is that the patentee demonstrate that the product is essentially the claimed invention.” *Id.* at 1374. The court in *Fox Factory* rejected the patent owner’s argument that the co-extensiveness requirement is simply an inquiry into “whether the patent claims broadly cover the product that is the subject of the evidence of secondary considerations.” *Id.* at 1377. Thus, simply showing that a patent claim broadly covers the commercial product being asserted as objective evidence of nonobviousness is not enough to show they are coextensive. *Id.*

That is because “[a] patent claim is not coextensive with a product that includes a ‘critical’ unclaimed feature that is claimed by a different patent and that materially impacts the product’s functionality.” *Id.* at 1375. In contrast, “if the unclaimed features amount to nothing more than additional insignificant features, presuming nexus may nevertheless be appropriate.” *Id.* at 1374. Based on the facts of the case in *Fox Factory*, the court found that “nexus may not be presumed” because “there are one or more features not claimed by the [challenged patent] that materially impact the functionality” of the products on which patent owner’s presumption argument is based and the court rejected arguments that the patent claims broadly cover the product. *Id.* at 1376–1377.

Patent Owner argues that different models of its curved manual treadmills practice and are coextensive with the claims of the ’580 patent. PO Resp. 46–48. They are 1) the CURVE treadmill (a.k.a SpeedBoard treadmill and CURVE Legacy treadmill); 2) Curve XL treadmill, 3) Curve LTG treadmill, 4) Curve FTG treadmill; 5) Curve 3.0 treadmill, 6) Curve Trainer, and 7) EcoMill and EcoMill Legacy treadmills. *Id.*

To support its argument, Patent Owner relies upon a claim chart purporting to show how the CURVE treadmill meets the claimed invention and the testimony of Dr. Blair. *Id.* at 49–57; Ex. 2018 ¶¶ 189–190 (citing Ex. 2025).

However, Patent Owner and Dr. Blair indicate that a number of its curved manual treadmills had different distinguishing features—features that are unclaimed. Patent Owner indicates that the Curve XL offered a larger running surface, that the Curve LTG treadmill is a lighter duty version, that Curve FTG treadmill has different handrails and additional features for providing different levels of resistance, that the Curve 3.0 has upgraded

software and sophisticated electronics, and the Curve Trainer has a less steep curve that provides a quieter and quicker acceleration, and the EcoMill and EcoMill Legacy has an onboard generators system that produces power for the display and USB charging station. Further, as Petitioner points out, we note that Patent Owner’s evidence points to unclaimed features such as a durable WOODWAY membrane technology, displays, heart-rate monitors, speed outputs, adjustable resistance, sophisticated load cells, data acquisition boards and software, and runner feedback system. Pet. Reply 25–26 (citing Ex. 1037, 27:13–25, 28:20–29:13; Ex. 2028, 77–79); Ex. 2057, 3.

Patent Owner and Dr. Blair broadly assert that these unclaimed features are not significant for the purposes of establishing nexus. PO Resp. 46–48; Ex. 2018 ¶¶ 189–190. But neither Patent Owner nor Dr. Blair sufficiently explains why these features are insignificant and, at best, Dr. Blair’s testimony shows that the ’580 patent’s claims broadly cover the CURVE treadmill only. PO Resp. 46–48; Ex. 2018 ¶¶ 189–190.

After reviewing Patent Owner’s evidence of coextensions, determine that Patent Owner’s evidence does not sufficiently establish that the different models of its curved manual treadmills are coextensive with the claims of the ’580 patent. Patent Owner, thus, is not entitled to a presumption of nexus.

### 3. *Direct Showing of Nexus*

“A finding that a presumption of nexus is inappropriate does not end the inquiry into secondary considerations,” however. *Id.* at 1373. “To the contrary, the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Id.* at 1373–74 (quoting *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996)). “Where the

offered secondary consideration actually results from something other than what is both claimed and novel in the claim, there is no nexus to the merits of the claimed invention,” meaning that “there must be a nexus to some aspect of the claim not already in the prior art.” *In re Kao*, 639 F.3d 1057, 1068–69 (Fed. Cir. 2011).

Ultimately, we must weigh Patent Owner’s objective evidence in the context of whether the claimed invention as a whole would have been obvious to a skilled artisan. *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1331–32 (Fed. Cir. 2016). Only if the patent owner presents a *prima facie* case of nexus does the burden of production shift to the patent challenger to adduce evidence showing that any commercial success or industry praise was due to extraneous factors other than the patented invention. *Demaco*, 851 F.2d at 1393.

*a) Commercial Success*

“Evidence of commercial success, or other secondary considerations, is only significant if there is a nexus between the claimed invention and the commercial success.” *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311–12 (Fed. Cir. 2006). “When a patentee can demonstrate commercial success, usually shown by significant sales in a relevant market, and that the successful product is the invention disclosed and claimed in the patent, it is presumed that the commercial success is due to the patented invention.” *J.T. Eaton & Co. v. Atlantic Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997).

Patent Owner argues that it enjoyed 100% market share of the curved, manual treadmill market and made significant sales. PO Resp. 57–60. Citing to the testimony of Mr. Weber, Patent Owner asserts that “[t]he

commercial success of Patent Owner’s products was based on the key features of the claimed invention.” *Id.* at 59 (citing Ex. 2020 ¶¶ 34–41).

Mr. Weber is Patent Owner’s Director of Sales and Marketing. Ex. 2020 ¶ 2. Mr. Weber testifies that safety is a critical factor for commercial success and in particular the use of a safety mechanism to control unintended rotation of the running belt. *Id.* ¶ 34 (“Woodway’s line of curved, manual treadmills would not be commercially successful without such a safety feature”). *Id.* ¶¶ 37–41.

Petitioner argues that Patent Owner’s evidence does not establish that Patent Owner is commercially successful in the field of manual treadmills and not just curved manual treadmills and that Patent Owner’s evidence does not establish a nexus between its sales and the claimed safety mechanism. Pet. Reply 23–29.

We agree with Petitioner that Patent Owner has not sufficiently established a nexus between its sales and the alleged commercial success. We do not credit Mr. Weber’s testimony that the alleged commercial success of Woodway’s curved, manual treadmills was due to the safety mechanism. As Petitioner points out, Mr. Weber’s testimony indicates that Woodway’s alleged commercial success could be due to other factors, such as Woodway’s reputation. Pet. Reply 26 (citing Ex. 2020 ¶¶ 2, 13).

#### 4. *Industry Praise*

“Evidence that the industry praised a claimed invention or a product that embodies the patent claims weighs against an assertion that the same claim would have been obvious.” *Lectrosonics, Inc. v. Zaxcon, Inc.*, IPR2018-01129, Paper 33 at 68 (PTAB Jan. 24, 2020) (citing *WBIP*, 829 F.3d at 1334).

Patent Owner argues that its “CURVE line of treadmills garnered significant attention and praise in the industry.” PO Resp. 60–61; PO Sur-reply 24. For support, Patent Owner asserts that its Curve Legacy was nominated for an Innovation Award by FIBO (Ex. 2020 ¶ 56, Ex. 2057), cites the testimony of Mr. Weber, Patent Owner’s Director of Sales and Marketing (Ex. 2020 ¶¶ 43–56), and certain publications (Ex. 2045, 5; Ex. 2046, 3, 5; and Ex. 2052, 1). PO Resp. 60–61. Additionally, Mr. Weber’s testimony refers to certain publications that are at Exhibits 2047–2057.

We have reviewed all of Patent Owner’s cited evidence and determine that it is insufficient to show industry praise. *See* Pet. Reply 29. Although Patent Owner’s evidence praises the CURVE lines to some extent, the praise is because of features not claimed and not for the claimed invention, which includes the claimed safety device. *See* Exs. 2047–2057; Ex. 1037, 67:8–16. For example, Exhibit 2057 indicates that the Curve Legacy was nominated for the Innovation Award by FIBO because it is “environmentally friendly”, “has . . . no wear and tear components,” “not necessary to replace the deck or running belt,” includes “[a] durable WOODWAY membrane technology,” and provides “direct feedback.” Ex. 2057, 3. Additionally, Exhibits 2047 is insufficient because it is Patent Owner’s own press release and, thus, is praise from itself. None of the cited evidence mentions the claimed safety device feature. *See* Exs. 2047–2057.

#### 5. *Copying*

“[C]opying requires evidence of efforts to replicate a specific product, which may be demonstrated through internal company documents, direct evidence such as disassembling a patented prototype, photographing its features, and using the photograph as a blueprint to build a replica, or access to the patented product combined with substantial similarity to the patented product.”

*Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010).

Patent Owner argues that “a number of companies” have launched products that are close copies of products in its CURVE line. PO Resp. 61–65; *see also* PO Sur-reply 24–26. As evidence of copying, Patent Owner relies upon the testimony of its employee Mr. Weber that a number of companies have products that are allegedly copies of Patent Owner’s CURVE line of products. PO Resp. 62 (citing Ex. 2020 ¶¶ 57–67). Mr. Weber’s testimony relies upon certain photographs to show the alleged copying (Exs. 2058–2065). Petitioner also alleges copying by a licensee and Patent Owner. PO Resp. 62–65.

Petitioner responds that Patent Owner’s evidence does not show evidence of an effort to replicate a specific product. Pet. Reply 33.

We have reviewed all of Patent Owner’s cited evidence and determine that it is insufficient to show copying of the claimed invention. Exhibits 2058–2065 make no mention of a feature resembling the claimed safety device. We also do not credit the conclusory testimony of Mr. Weber, Patent Owner’s Director of Sales and Marketing, concerning his observations of alleged copying by others. Ex. 2020 ¶¶ 57–67. Finally, Patent Owner’s evidence does not sufficiently show copying of a specific product.

#### 6. *Long-Felt But Unsolved Need & Passage of Time*

Long-felt need can be shown by evidence that indicates that the prior art had a recognized need for a solution to the problem, and that others had tried and failed to find a solution to that problem. *Millennium Pharms., Inc. v. Sandoz Inc.*, 862 F.3d 1356, 1369 (Fed. Cir. 2017).

Patent Owner asserts that “[b]efore the priority date of the ’580 patent, no one had successfully commercialized a curved, manual treadmill.” PO



Resp. 65–67; PO Sur-reply 26. Patent Owner additionally argues that the length of time between the cited prior art and the patent shows nonobviousness. PO Resp. 66.

Petitioner argues that Patent Owner’s evidence fails to show that other POSA tried and failed to find a solution. Pet. Reply 33–34.

We have reviewed all of Patent Owner’s cited evidence and determine that it is insufficient to show copying of the claimed invention. *Id.* Patent Owner’s evidences does not sufficiently show that a POSA recognized a need that was long-felt or that others had tried and failed to solve the problems. None of the cited evidence describes failed efforts of others to solve the specific problems addressed by the claimed invention, such as a safety device that prevents bidirectional movement.

#### *7. Conclusion as to Secondary Considerations*

We have considered all of Patent Owner’s arguments and evidence concerning secondary considerations. We determine that Patent Owner has not sufficiently establish a nexus between the unique features of the claimed invention and the evidence of secondary considerations. We, thus, give Patent Owner’s evidence little weight.

### III. CONCLUSION<sup>8</sup>

After considering the evidence and arguments presented in the Petition and Preliminary Response, we determine Petitioner has established by a preponderance of the evidence that claims 1–12, 14, and 18 are unpatentable and has failed to establish by a preponderance of the evidence that claims 15 and 25 are unpatentable.

In summary:

<b>Claim(s)</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Claim(s) Shown Unpatentable</b>	<b>Claim(s) Not Shown Unpatentable</b>
1–5, 10, 11, 14, 18, 25	103	Chickering, Magid	1–5, 10, 11, 14, 18	25
6–9, 12	103	Chickering, Magid, Sclater	6–9, 12	
1–12, 14, 18	103	Chickering, Magid, Sclater	1–12, 14, and 18	
1–5, 10, 11, 14, 15, 18, 25	103	Socwell, Magid		1–5, 10, 11, 14, 15, 18, 25
6–9, 12	103	Socwell, Magid, Sclater		6–9, 12
1–12, 14, 15, 18, 25	103	Socwell, Magid, Sclater		1–12, 14, 15, 18, 25

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<sup>8</sup> Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this 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).

<b>Overall Outcome</b>			1–12, 14, 18	15, 25
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#### IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–12, 14, and 18 are unpatentable, and

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

IPR2023-00836  
Patent 9,039,580 B1

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