

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.

U.S. Patent No. 9,039,580 to Bayerlein et al.

Case No.: IPR2023-00836

SECOND DECLARATION OF ROBERT GIACHETTI, Ph.D.

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List of Exhibits

Exhibit #	Description
1001	U.S. Patent No. 9,039,580 (“the ’580 Patent”)
1002	U.S. Patent No. 9,039,580 File History (“the ’580 File History”)
1003	Declaration of Robert Giachetti, Ph.D. P.E. (“Giachetti”)
1004	Robert Giachetti, Ph.D. P.E. Curriculum Vitae (“Giachetti CV”)
1005	Complaint, <i>Woodway USA, Inc., v. LifeCORE Fitness, Inc. d/b/a Assault Fitness</i> , Case No. 3:22-cv-00492-JO-BLM, Southern District of California, Filed April 11, 2022 (“Complaint”) (Ex. 1005 at 1-8) Waiver of Service (April 13, 2022) (Ex. 1005 at 9-10)
1006	Amended Complaint, <i>Woodway USA, Inc., v. LifeCORE Fitness, Inc. d/b/a Assault Fitness</i> , Case No. 3:22-cv-00492-JO-BLM, Southern District of California, Filed October 24, 2022 (“Amended Complaint”)
1007	Treadmills: Supplier Guide © 2010. Trade Practices (Consumer Product Safety Standard) (Treadmills) Regulations 2009 (“ACCC Product Safety Supplier Guide”)
1008	U.S. Patent No. 641,424 to Ziebell (“Ziebell”)
1009	U.S. Patent No. 1,211,765 to Schmidt (“Schmidt”)
1010	U.S. Patent No. 4,614,337 to Schonenberger (“Schenkenberger”)
1011	U.S. Patent No. 5,897,461 to Socwell (“Socwell”)
1012	U.S. Patent No. 5,538,489 to Magid (“Magid”)
1013	U.S. Patent No. 3,637,206 to Chickering (“Chickering”)
1014	U.S. Patent No. 3,642,279 to Cutter (“Cutter”)
1015	U.S. Patent No. 6,042,514 to Abelbeck (“Abelbeck”)
1016	Power Transmission Handbook, (Power Transmission Distributors Association 1993) (“PT Handbook”)
1017	Neil Sclater and Nicholas P. Chironis, <i>Mechanisms & Mechanical Devices Sourcebook</i> , Third Ed., (McGraw-Hill 2001) (“Sclater”) (available at https://catalog.loc.gov/vwebv/holdingsInfo?searchId=26&recCount=25&recPointer=0&bibId=12308523)
1018	Mechanical Clutches and Torque Overload Devices, (Emerson Industrial Automation, 2001) (“Emerson”)
1019	Standard Specification for Motorized Treadmills, (ASTM, 2005) (“ASTM Standard”)

Exhibit #	Description
1020	Stationary Training Equipment – Part 6: Treadmills, additional specific safety requirements and test methods. (ISO, 2005) (“ISO Standard”)
1021	U.S. Patent No. 8,986,169 File History (“the ’169 File History”)
1022	Responsive Claim Constructions, <i>Woodway USA, Inc., v. LifeCORE Fitness, Inc. d/b/a Assault Fitness</i> , Case No. 3:22-cv-00492-JO-BLM, Southern District of California, Filed January 5, 2022
1023	United States District Courts – National Judicial Caseload Profile, December 2022
1024	Inhabitat, “HUMAN-POWERED GYMS in Hong Kong” (March 8, 2007) (available at https://inhabitat.com/human-powered-gyms-in-hong-kong/)
1025	Minute Order, <i>Woodway USA, Inc., v. LifeCORE Fitness, Inc. d/b/a Assault Fitness</i> , Case No. 3:22-cv-00492-JO-BLM, Southern District of California, March 30, 2023.
1026	U.S. Patent No. 10,561,884 File History (“the ’884 File History”)
1027	Claim Construction Brief, <i>Woodway USA, Inc., v. LifeCORE Fitness, Inc. d/b/a Assault Fitness</i> , Case No. 3:22-cv-00492-JO-BLM, Southern District of California, March 1, 2023
1028	Responsive Claim Construction Brief, <i>Woodway USA, Inc., v. LifeCORE Fitness, Inc. d/b/a Assault Fitness</i> , Case No. 3:22-cv-00492-JO-BLM, Southern District of California, March 14, 2023
1029	U.S. Patent No. 4,635,771 to Shoji (“Shoji”)
1030	<i>Intentionally left blank</i>
1031	<i>Intentionally left blank</i>
1032	<i>Intentionally left blank</i>
1033	Claim Construction Order <i>Woodway USA, Inc., v. LifeCORE Fitness, Inc. d/b/a Assault Fitness</i> No. 3:22-cv-00492-JO-BLM, Dkt. No. 59, Southern District of California, November 14, 2023
1034	<i>Intentionally left blank</i>
1035	<i>Intentionally left blank</i>
1036	Second Declaration of Robert Giachetti, Ph.D. P.E. (“Giachetti”)
1037	Confidential Transcript of Deposition of Eric A. Weber taken on March 19, 2024. <i>LifeCore Fitness, Inc., d/b/a Assault Fitness v. Woodway USA, Inc.</i> , IPR2023-00836, IPR2023-00843, and IPR2023-00849

Exhibit #	Description
1038	Transcript of Deposition of Dr. Kim. B. Blair taken on April 8, 2024 <i>LifeCore Fitness, Inc., d/b/a Assault Fitness v. Woodway USA, Inc.</i> , IPR2023-00836
1039	Transcript of Deposition of Dr. Kim. B. Blair taken on April 8, 2024 <i>LifeCore Fitness, Inc., d/b/a Assault Fitness v. Woodway USA, Inc.</i> , IPR2023-00843
1040	Transcript of Deposition of Dr. Kim. B. Blair taken on April 9, 2024 <i>LifeCore Fitness, Inc., d/b/a Assault Fitness v. Woodway USA, Inc.</i> , IPR2023-00849
1041	Woodway 4Front Owners Manual October 24, 2023 OM_EN_V2 (accessed March 31, 2024) (available at https://www.woodway.com/treadmills/4-front/)
1042	Woodway Homepage, (accessed March 31, 2024) (available at https://www.woodway.com/)
1043	Woodway Curve Specification (accessed March 31, 2024) (available at https://www.woodway.com/treadmills/curve/)
1044	Woodway Manual Treadmills Webpage (accessed March 31, 2024) (available at https://www.woodway.com/manual-treadmills/)
1045	Confidential Condensed Transcript of Deposition of Traci Bates taken on January 26, 2024 <i>Woodway USA, Inc., v. LifeCORE Fitness, Inc. d/b/a Assault Fitness</i> , Case No. 3:22-cv-00492-JO-BLM, Southern District of California
1046	Woodway Trueform Trainer Webpage dated August 12, 2020 (accessed April 4, 2024) available from Wayback at https://web.archive.org/web/20200812204597/https://www.woodway.com/product/trueform/trainer-powered-by-woodway/)
1047	Confidential Draft AirRunner Manual Treadmill Owner's Manual Assault Fitness Release v.01 (20.February,17)
1048	Correspondence with Patent Owner dated April 15, 2024

I. Introduction

I, Robert Giachetti, Ph.D., P.E., hereby declare as follows:

1. I provided my background, qualifications and opinions pertaining to a Petition for Inter Partes Review, Case No. IPR2023-00836, of certain claims of U.S. 9,039,580 (“the ’580 Patent,” Ex. 1001) in a Declaration that was filed on April 11, 2023. (Ex. 1003.)

2. I am making this Second Declaration (“Reply Decl.,” Ex. 1036) at the request of LifeCORE Fitness, LLC. (“LifeCORE”) in support of LifeCORE’s Reply to Patent Owner (PO) Woodway’s Response regarding certain factual issues raised in IPR2023-00836.

3. Specifically, for purposes of this Second Declaration, I have been asked to analyze the arguments made by Woodway in its Patent Owner Response (Public Redacted POR, Paper 17) along with the declaration of Woodway’s expert, Dr. Blair (“Blair Decl.,” Ex. 2018). I have also analyzed the Patent Trial and Appeal Board’s decision to institute (“DI,” IPR2023-00836, Paper 6) my deposition transcripts (Exs. 2022-2024), and Dr. Blair’s deposition transcripts (Exs. 1038-1040).

4. I have also reviewed my first declaration (Ex. 1003) and the exhibits cited in my first declaration.

5. In forming the opinions expressed below, I have considered:

- a. The documents listed above as well as additional patents and documents referenced herein;
- b. The relevant legal standards, including the standard for obviousness provided in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), and any additional documents cited in the body of this declaration; and
- c. My knowledge and experience based upon my work and study in this area as described below.

II. Woodway's Response – Disputed Claims

6. Woodway did not argue all claim limitations. For all claim limitations not analyzed in this declaration, I refer to the analysis in my First Declaration (Ex. 1003.)

III. Construction of Terms in the Challenged Claims

7. As discussed in my first declaration (Ex. 1003), I understand that the terms of the claims must first be construed before the claims can be properly evaluated. I also understand that, at the same time, absent some reason to the contrary, claim terms are typically given their ordinary and accustomed meaning as would be understood by one of ordinary skill in the art.

8. I applied alternate claim construction positions in Grounds 3 and 6 for the terms: “substantially prevent”, “safety device”, and “shaft” in my first

declaration. However, I understand that the Board did not construe any terms to reach their institution decision. (DI, 21-22.) The District Court issued its Markman Order (Ex. 1033) on November 14, 2023 and construed multiple terms. For purposes of this declaration, I am applying the following claim constructions based on the District Courts Constructions:

A. “substantially prevent[]”

9. The Court construed “*substantially prevent[]*” as “restricts rotation to allow for only one rotational direction of movement.” (Claim Construction, Ex. 1033, 16.) This construction will not affect my analysis in Grounds 1-2, and 4-5 of my first declaration.

B. “safety device”

10. The Court construed “*safety device*” as a means-plus-function claim limitation with the 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.” (Claim Construction, Ex. 1033, 22-23.) I applied the same constructions in Grounds 3 and 6 of my first declaration. If the Board adopts the same construction, I rely on my analysis of “*safety device*” for claims 1, 11, and 25 in Grounds 3 and 6 of my first declaration.

C. “shaft”

11. The Court did not construe the term “*shaft*” and instead relied on its

plain an ordinary meaning. (Claim Construction, Ex. 1033, 25-26.) If Board adopts the same construction, it will not affect my analysis in Grounds 1-2, and 4-5 of my first declaration.

D. “bearings” / “support” / “disposed . . . on”

12. Woodway/Dr. Blair do not expressly construe claim terms: “*bearings*”, “*support*”, and “*disposed . . . on*”, however, their arguments imply constructions. For example, Woodway/Dr. Blair argue that these terms require specific location and a weight-bearing relationship between the bearings and the running belt, i.e., “A POSA would therefore understand the ’580 specification to require a relative, weight-bearing relationship between the running belt and the plurality of bearings” and “the bearings 208 to be positioned below the running belt 16 . . . here.”) (POR, 17-18.)

13. During his deposition, Dr. Blair confirmed that: 1) the claims do not expressly require these additional location and weight-bearing limitations (Dr. Blair Deposition, Ex. 1038, 45:21-47:5; 58:5-19; 61:20-23); 2) Woodway/Dr. Blair is not proposing a construction to add these limitations (Dr. Blair Deposition, Ex. 1038, 47:20-23; 58:20-23; 61:24-62:1); and 3) the District Court did not provide such constructions (Dr. Blair Deposition, Ex. 1038, 48:7-9; 58:24-59:5; 62:2-5). Instead, Dr. Blair argued that a POSA would understand that the claims require these additional limitations based on disclosure in the ’580 Patent:

Q. Okay. All right. So if we go back to your paragraph 104, if this positioning and weight-bearing relationship is not expressly in the plurality of bearings Claim limitation, and the District Court did not provide a construction, and you're not providing a construction, why would a POSA understand that: "The plurality of bearings must all be positioned below and have some kind of weight-bearing relationship with the running belt"?

MS. JELENCHICK: Objection, form.

THE WITNESS: Because of the description of the specification of '580.

(Dr. Blair Deposition, Ex. 1038, 48:10-23; Dr. Blair Declaration Ex. 2018, ¶104.)

14. More specifically, Dr. Blair relies on the '580 Patent disclosure at col. 11, lines 58-60 for supporting this claim construction even though the passage does not expressly describe the position:

The running belt 16 contacts and *is supported in part by the bearings 208* of the bearing rails and bearing 208 are configured to rotate, thereby decreasing the friction experienced by the running belt 16 as the belt moves along the top profile 210.

(Dr. Blair Declaration, Ex. 2018, ¶104, quoting '580 Patent, Ex. 1001, 11:58-62 emphasis added by Woodway.)

Q. And this is the direction [sic description] that you have reproduced in paragraph 104?

A. Yes.

Q. . . . Does it reference anything in this block quote about the positioning of the bearings being below the running belt?

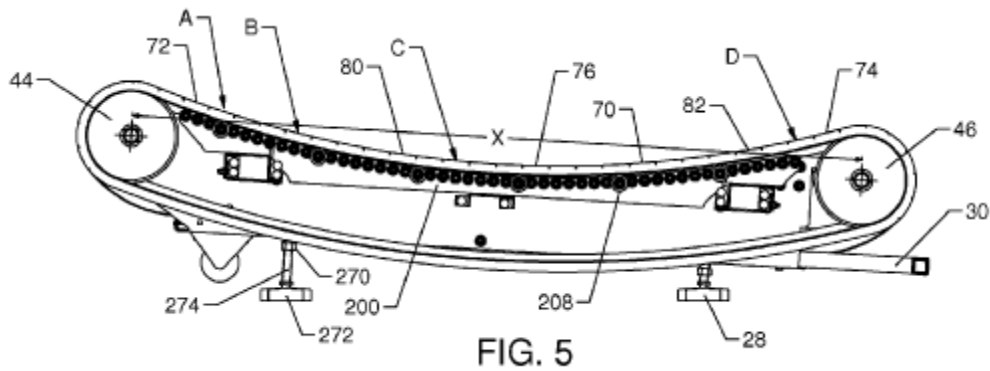
A. It doesn't explicitly say the word "below" but it does say "is supported".

Q. So it's your position that the term "support" means this weight-bearing relationship?

A. A person of ordinary skill in this context would assume that, yes.

(Dr. Blair Deposition, Ex. 1038, 48:25-49:14.)

15. Woodward states that “[i]n the ’580 patent, the ‘plurality of bearings’ are only described and depicted as lying below and supporting the running belt 16” and that “[t]his requires the bearings 208 to be positioned below the running belt 16.” (POR, 17, citing ’580 Patent, Ex. 1001, 11:58-60.) However, as admitted by Dr. Blair, the ’580 Patent disclosure at 11:58-60 “doesn’t explicitly say the word ‘below’.” (Dr. Blair Deposition, Ex. 1038, 49:6-10.) Further, as illustrated below in Figure 5, the bearings 208 are below an upper portion of the running belt 16 and above a lower portion of the running belt 16.



'580 Patent, Ex. 1001, Fig. 5

16. The '580 Patent discloses that the “running belt 16 contacts and is supported **in part** by the bearings 208 of the bearing rails.” ('580 Patent, Ex. 1001, 11:58-60.) This disclosure of partial support by contact does not provide specific location and weight-bearing relationship. Further, the '580 Patent describes other bearings that do not provide a weight-bearing relationship with the belt. For example, as I explained in my first declaration, the '580 Patent describe a one-way bearing assembly with reference to Figures 2 and 36. (Ex. 1003, ¶¶94.) Dr. Blair admitted that the “'580 Patent does not describe the one-way bearing assembly as providing a weight-bearing relationship with the running belt.” (Dr. Blair Deposition, Ex. 1038, 52:19-22.) Since Woodway's/Dr. Blair's implied construction conflicts with the '580 Patent the Board should reject PO's unsupported implied constructions.

IV. Level of Ordinary Skill in the Art

17. Woodway/Dr. Blair proposed a skill level that includes “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.” (POR, 3-4.)

18. It is my opinion that the Woodway/Dr. Blair proposed skill level is insufficient. For example, their proposed skill level requires education or industry experience and both are important to understand the ‘580 Patent. Further, the Woodway/Dr. Blair proposed skill level does not include any understanding of exercise biomechanics, or the proportions of people, which is important to understand the design of curved treadmills.

V. Patentability Analysis of the Challenged Claims

A. Grounds 1-3 – Chickering discloses the “curved running surface” limitations of claims [1.6], [11.6][b], [25.3]

- ... *[1.6] 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*
- ... *[11.6][b] wherein 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 intermediate the front and rear belt portions, wherein the 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; and*
- ... *[25.3] disposing a running belt on the plurality of bearings 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;*

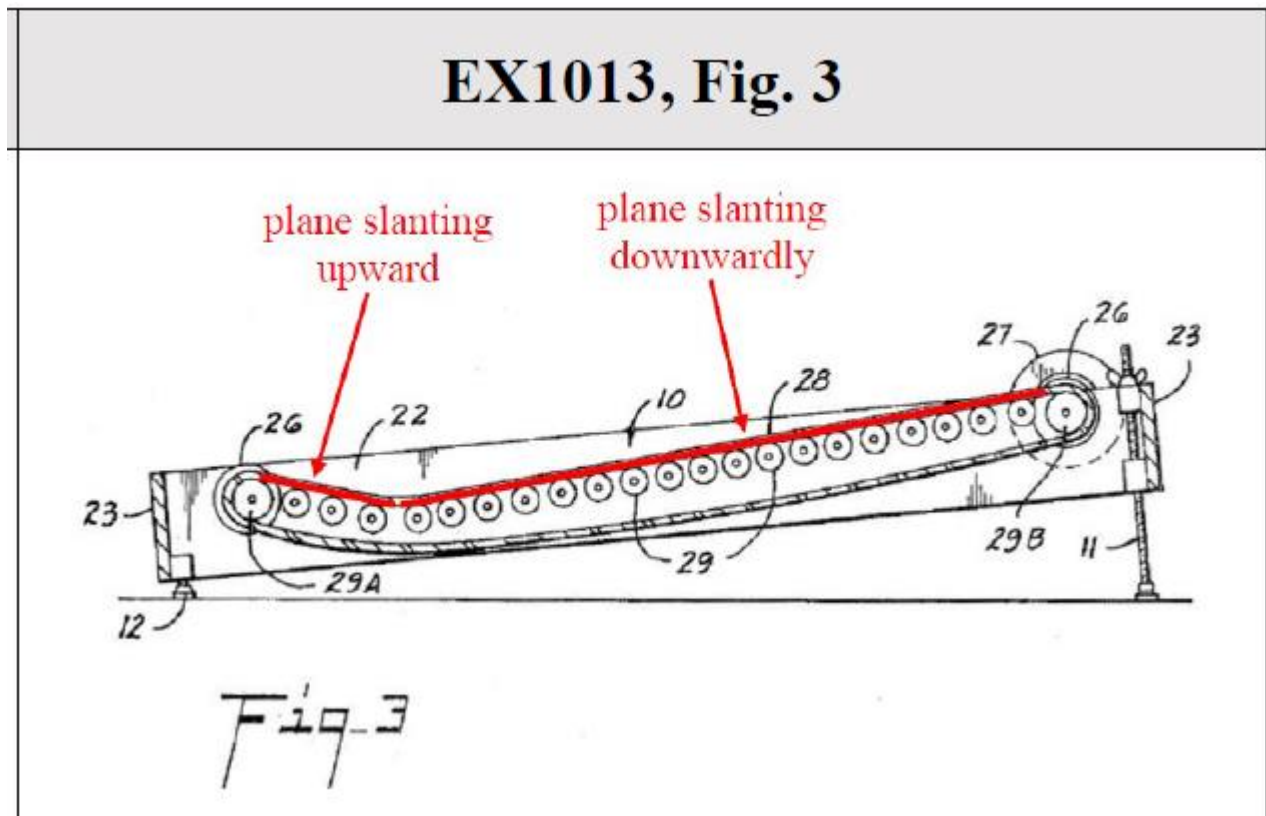
19. As I explained in my first declaration, Chickering discloses the “*curved running surface*” limitations of claims [1.6], [11.6][b], [25.3]. (Ex. 1003, ¶¶161-164, 206-207, 226-228.)

20. Woodway/Dr. Blair argue that “Chickering does not disclose a treadmill with a ‘curved running surface’ as required by the claims.” (POR, 8.) However, Dr. Blair admits that the running belt includes a small curve:

Q. Okay. So the planes meet at an obtuse angle. How would you describe the running belt at that obtuse angle?

A. Well, the running belt would be bending in a very, very small curve at that point to follow those trajectories, the two planes.

(Dr. Blair Deposition, Ex. 1038, 24:20-25.)



Dr. Blair Declaration, Ex. 2018, ¶90

21. Since the claims do not require a specific length of the curved running surface, I understand Dr. Blair's testimony that Chickering discloses a belt with a small curve to be an admission that Chickering discloses a "curved running surface." In that case, I agree with Dr. Blair that that Chickering discloses a "curved running surface."

22. Woodway and Dr. Blair also argue that the claims require the runner's intent, i.e., that "a runner's feet never contact the . . . 'curved surface'" of Chickering's single belt embodiment of Figure 3 because a "runner's feet are not intended to contact the area where the downwardly slanting plane of the forward rollers intersects with the upwardly slanting plane of the rear rollers." (POR, 13, Dr. Blair Declaration, Ex. 2018, ¶91.)

23. I cannot locate any reference to the intent of the runner in the '580 Patent claims, so I disagree with this additional requirement. Further, I understand that Woodway and Dr. Blair are not proposing construing the claims to require the runner's intent.

24. Woodway/Dr. Blair seem to be conflating Chickering's different embodiments. Chickering discloses, with reference to its dual belt embodiment of Figure 1, that "[n]ear the bottom of the arc the foot leaves surface 16a and may for a brief instant be out of contact with any surface." (Chickering, Ex. 1013, 2:50-58.) Such a statement describes a necessary requirement of the dual belt embodiment because the foot must transition from the front belt and move to the rear belt, crossing the gap between. However, this is not a feature present in the single belt embodiment.

25. Chickering discloses that the single belt requires heavier belting material whose properties require a more gradual curvature:

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. When such heavier belting material is used, it may also be desirable to provide larger end rollers as at 29a and 29b to give a larger turning radius for the belt.

(Chickering, Ex. 1013, 3:11-18.)

26. A POSA would have understood this disclosure in Chickering teaches that a user could contact the curved area of the running surface.

27. Intentionally left blank.

1. Grounds 1-3 – Chickering discloses the “the first and second bearing rails define a curved top profile” limitations of claim [25.2][c]

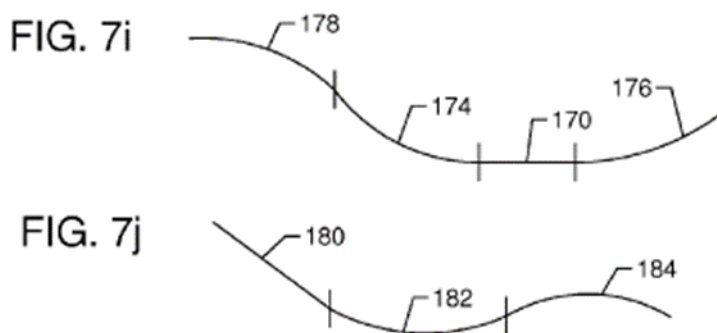
... *[25.2][a]providing a first bearing rail and a second bearing rail, the first and second bearing rails each comprising a plurality of bearings and [b] extending longitudinally on the frame, [c] wherein the first and second bearing rails define a curved top profile;*

28. As I explained in my first declaration, Chickering discloses “*the first and second bearing rails define a curved top profile*” limitations of claim [25.2][c]. (Ex. 1003, ¶¶221-225.)

29. Woodway/Dr. Blair argue that Chickering does not disclose this limitation because Chickering’s support arms 14 and 19 “do not have any curved components.” (POR, 14; *see also* Dr. Blair Declaration, Ex. 2018, ¶96.) However,

Claim 25 does not require that the bearing rails are formed in a curved shape. Instead Claim 25 requires that “*the first and second bearing rails define a curved top profile.*” Woodway/Dr. Blair did not propose construing this term. (See POR, 4-6.)

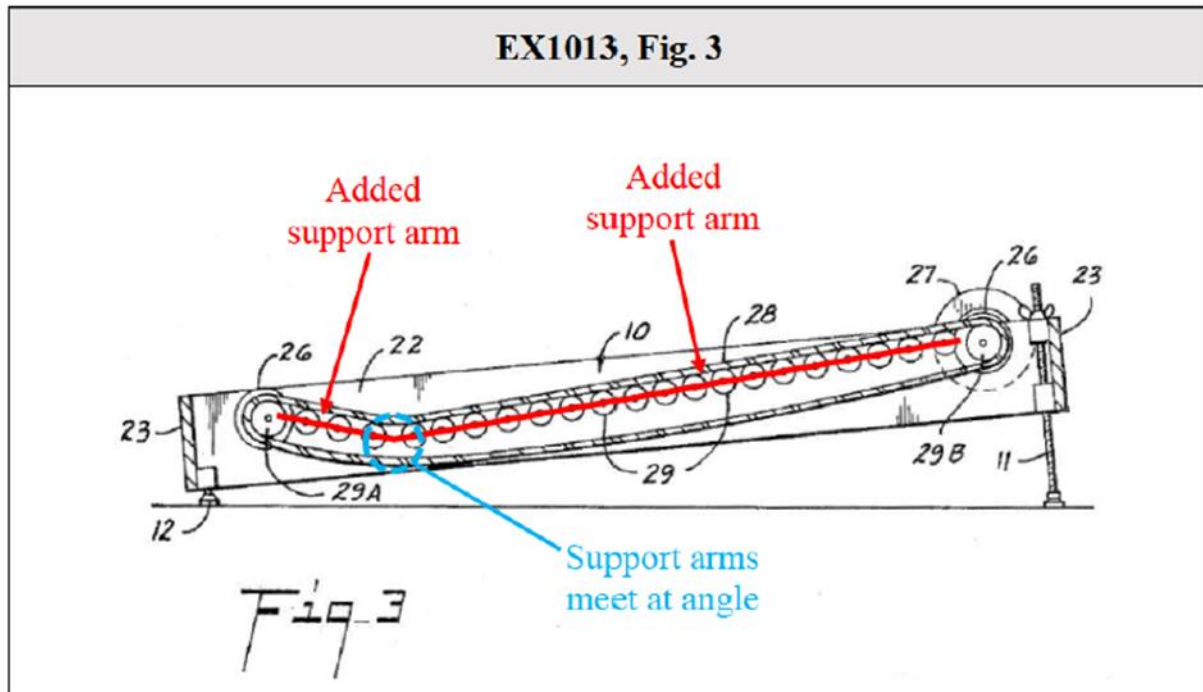
30. Further, such a construction would conflict with the '580 Patent specification. The '580 Patent discloses, with reference to Figures 7b-7j, non-planar, or curved, running surfaces that are “collectively” defined by “concave, convex, or linear” portions. ('580 Patent, Ex. 1001, 9:26-32.) “According to one exemplary embodiment, the non-planar running surface of the manual treadmill 10 is substantially curved, but that curve integrates one or more linear portions (e.g., that replace a ‘curved portion’ or the curve or that are added/inserted into the curve).” ('580 Patent, Ex. 1001, 10:17-21.) For example, “FIG. 7i illustrates the profile of a non-planar surface wherein a substantially linear portion 170 has been integrated with a concave curve having a first concave portion 174 to one side of the linear portion 170 and a second concave portion 176 to the opposite side of the linear portion 170.” ('580 Patent, Ex. 1001, 10:23-28.)



'580 Patent, Ex. 1001, Figures 7i, 7j

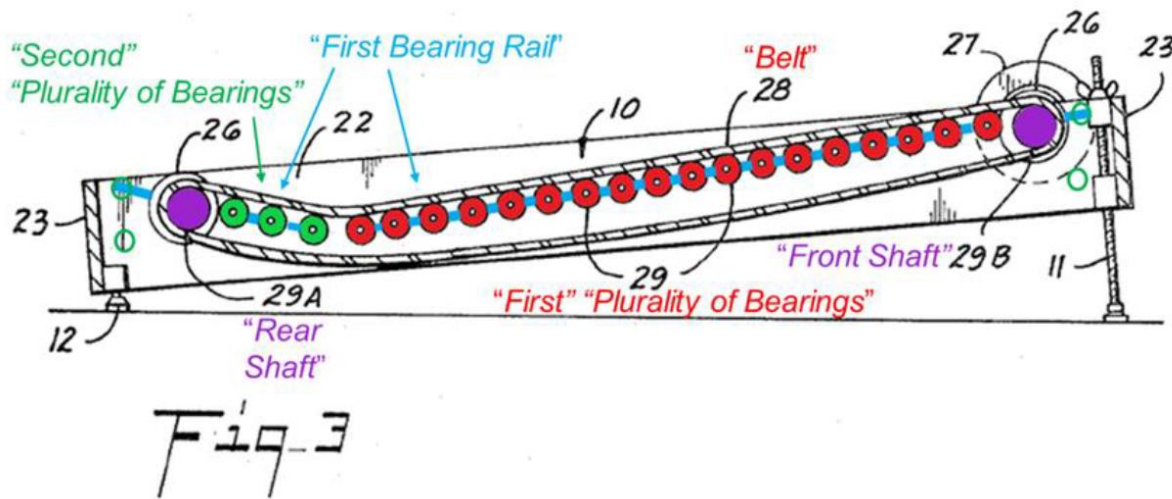
31. The '580 Patent further discloses that “multiple linear portions may be included in a profile of a non-planar surface.” ('580 Patent, Ex. 1001, 10:33-35.) Accordingly, Woodway's/Dr. Blair's argument that Chickering does not disclose a curved profile because the support arms 14 and 19 “do not have any curved components” (POR, 14, *see also* Dr. Blair Declaration, Ex. 2018, ¶96) conflicts with the '580 Patent disclosure.

32. Woodway/Dr. Blair further argue that support arms 14 and 19 are . . . “perfectly straight and, to the extent they meet at all, meet at a sharp, obtuse angle.” (POR, 14; Dr. Blair Declaration, Ex. 2018, ¶96.) To support this argument, Dr. Blair extended the support arms to contact or “meet” each other as shown in the image reproduced below.



Dr. Blair Declaration, Ex. 2018, ¶97

33. However, my proposed modification to Chickering does not include support arms that meet or contact each other because such contact would restrict the independent pivotal movement of each support arm to adjust the angle and speed of the treadmill. However, connecting the support arms would not influence the curvature of the heavy belt, whose curvature is defined by the support arms, rather it just removes some of the customization features of Chickering.



Ex. 1003, ¶224

- B. Grounds 4-6 –Socwell discloses “a plurality of bearings” (Claims 1, 11, 25)

- ... *[1.4] a first bearing rail having a plurality of bearings, the first bearing rail attached to a left side of the frame;*
- ... *[1.5] a second bearing rail having a plurality of bearings, the second bearing rail attached to a right side of the frame;*
- ... *[11.4] a first bearing rail having a plurality of bearings, the first bearing rail attached to a left side of the frame;*
- ... *[11.5] a second bearing rail having a plurality of bearings, the second bearing rail attached to a right side of the frame;*
- ... *[25.2][a]providing a first bearing rail and a second bearing rail, the first and second bearing rails each comprising a plurality of bearings and*

34. As I explained in my first declaration, Socwell discloses “a plurality of bearings” limitations of claims [1.4]/[11.4], [1.5]/[11.5], [25.2]. (Ex. 1003, ¶¶344-354.)

35. Woodway/Dr. Blair argue that “Socwell does not disclose two bearing rails, each having ‘a plurality of bearings’” because the ’580 Patent “requires the bearings 208 to be positioned below the running belt 16.” (POR, 16-17; Dr. Blair Declaration, Ex. 2018, ¶¶103-104.) Woodway/Dr. Blair further argue that “[a] POSA would therefore understand the ’580 specification to require a relative, weight-bearing relationship between the running belt and the plurality of bearings.”

(POR, 18; Dr. Blair Declaration, Ex. 2018, ¶104.) Woodway/Dr. Blair thus imply construing the term “*bearing*” as requiring a position below the running belt to provide a weight-bearing relationship.

36. As I explained in my first declaration at ¶349, Socwell’s rollers 98 and deck 56 collectively provide a “*plurality of bearings*” as required by claims 1, 11, and 25. (Ex. 1003, ¶349.)

C. Grounds 4-6 – Socwell discloses “*a running belt [... at least partially] supported by the first bearing rail and the second bearing rail*” (Claims 1, 11)

... *[1.6] 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*

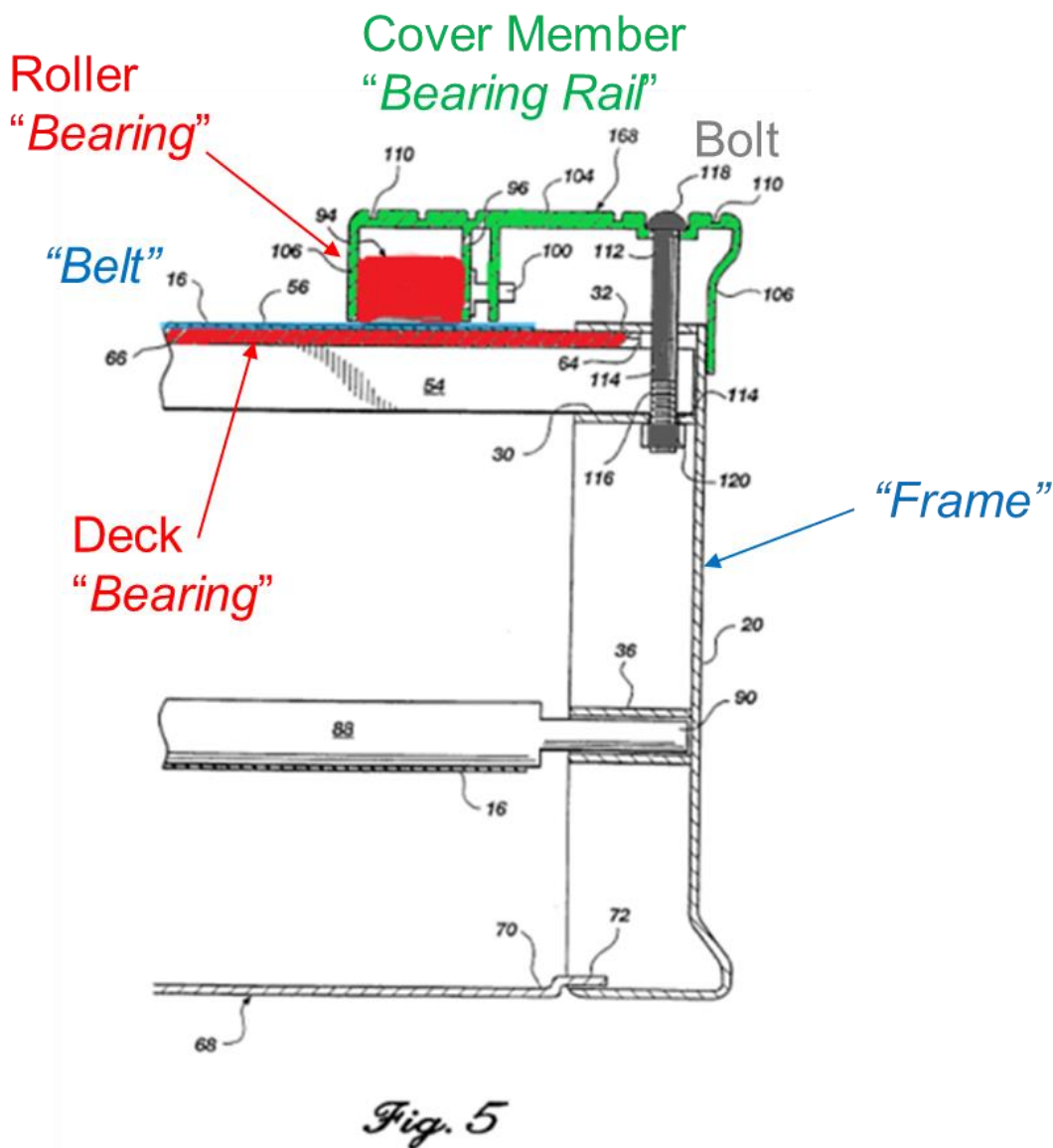
... *[11.6][a] a running belt at least partially disposed about the front shaft and the rear shaft and at least partially supported by the first bearing rail and the second bearing rail,*

37. As I explained in my first declaration, Socwell discloses the “*a running belt [... at least partially] supported by the first bearing rail and the second bearing rail*” limitations of claims [1.6], [11.6][a]. (Ex. 1003, ¶¶354-358, 393.)

38. Woodway/Dr. Blair argue that “Petitioner never actually argues in the Petition that cover member 168 ‘support[s]’ Socwell’s running belt.” (POR, 21,

citing Petition at 69-72.) However, Woodway/Dr. Blair are referencing my analysis of the “*bearing rail*” claim limitations [1.4]-[1.5], [11.4]-[11.5], [25.2][a] which do not include the “*supported*” limitation.

39. However, as explained in my first declaration, Socwell discloses that its cover members 168 (“*bearing rails*”) are mounted to the frame and support the deck 56 and rollers 98 (“*plurality of bearings*”) which in turn support the belt 16 (“*running belt*”). (Ex. 1003, ¶¶343-344, 356-358.) As further explained in paragraphs 350-354 of my first declaration, Socwell discloses (1) a cover member 168 (“*bearing rail*”) that supports the belt securing assemblies 94, including the rollers 98 (“*bearings*”), and attaches to the frame 12 using bolts 118, and (2) that bolts 118 may extend through apertures in the deck 56 (“*bearing*”) to attach the deck 56 to the frame 12. (Socwell, Ex. 1011, 11:15-29; Ex. 1003, ¶¶350-354.)



Socwell, Ex. 1011, Fig.5 (Annotated in Petition, 71.)

40. During my deposition, I further explained how Socwell's cover members 168 ("bearing rails") support the belt 16 ("running belt") by sandwiching it between the deck 56 and rollers 98 ("plurality of bearings") using the bolt 118:

Q. All right. Well, looking at that graphic on page 187, which is under that paragraph 350, can you explain to me exactly how the cover member 168 supports the deck 56?

A. Yeah. So the cover member is fastened to the frame in that fastening action as we describe here in 351. That fastener goes through the deck, and the two of those things together are the plurality of bearings.

Q. How does simply being fastened to the cover member mean that the deck is supported by the cover member?

A. Right. So it's used to attach the deck to the frame.

Q. The cover member is?

A. Yes.

Q. How so?

A. By the bolt.

Q. Wouldn't the bolts connect the deck to the frame in that case?

A. It's like a sandwich. So the bolt, which is the cover member, and it all holds everything together.

(Ex. 2022, 8:3-25, emphasis added.)

41. As depicted in the graphic above, the roller bearings and the deck collectively provide the plurality of bearings. Without the roller bearings in place, the tension in the running belt of Socwell would cause the running belt to lift up and off of the deck, taking a shape that would not follow the deck below. The rollers are arranged to have the same curvature as the deck via their installation on the cover member 168 ("*bearing rail*"). When the cover member 168 ("*bearing rail*") is placed onto the treadmill and bolted down, it braces the running belt by

providing a reaction force against the running belt tension to maintain it in the shape of the deck below. The bolt that is used to fasten the bearing rail to the treadmill transmits the force from the frame through the bearing rail to the belt, so that the belt is held in place between the rollers and the deck (i.e. the “*plurality of bearings*”). Accordingly, the cover members (“bearing rails”) and the rollers and the deck (i.e. the “*plurality of bearings*”) provide support that enforces the curved shape of the running belt against the other forces that are acting upon it. This reading of the support features of Socwell is consistent with the ’580 Patent that includes a non-weight bearing support for the one way bearing stud 1520, (’580 Patent, Ex. 1001, 28:26-48). This arrangement is no different than other ’580 Patent embodiments that are used to enforce the curvature of the running belt assembly by supporting (sandwiching) it between bearings, e.g., the track system 700 described with reference to Figures 18-21. (’580 Patent, Ex. 1001, 22:15-20.)

D. Grounds 4-6 – Socwell discloses “*disposing a running belt on the plurality of bearings*”

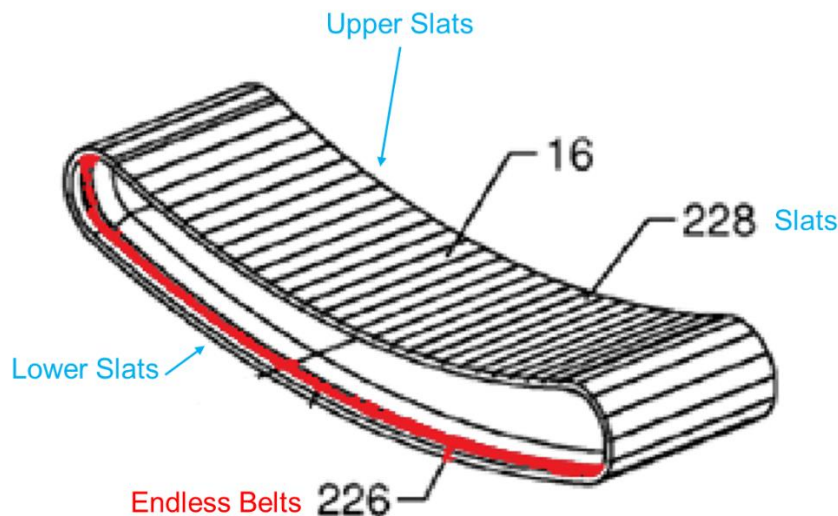
... ***[25.3] disposing a running belt on the plurality of bearings of the first bearing rail and the second bearing rail such that the running belt follows a top curved running surface corresponding to the curved top profile of the first and second bearing rails;***

42. As I explained in my first declaration, Socwell discloses the “*disposing a running belt on the plurality of bearings*” limitation of claim [25.3].

(Ex. 1003, ¶¶421-423, 354-358.)

43. Woodway/Dr. Blair argue that “Socwell does not disclose ‘disposing a running belt on the plurality of bearings’” because “[a] POSA would not understand a running belt to be ‘disposed on’ something positioned physically above the running belt.” (POR, 26-27; Dr. Blair Declaration, Ex. 2018, ¶139.) Woodway/Dr. Blair further argue that “in order for the running belt to be ‘disposed on’ a structure, the structure must be positioned below the running belt such that the structure supports and/or bears at least some of the weight of the running belt (and ultimately, the user).” (*Id.*) Woodway/Dr. Blair are again implying a construction that requires a specific position of the running belt relative to the bearings to provide a weight-bearing relationship.

44. The Woodway/Dr. Blair construction conflicts with the ’580 Patent disclosure. The ’580 Patent uses the phrase “disposed on” to refer to numerous arrangements, including arrangements that are not physically above. For example, the ’580 Patent uses the term “disposed on” to refer to an interior and lateral arrangement of the endless belts 226 relative to the slats 228 of the running belt 16: “The endless belts 226 are shown disposed on opposite sides of the running belt 16, generally interior to the outer, lateral edge of the slats 228.” (’580 Patent, Ex. 1001, 14:6-9, emphasis added.)



'580 Patent, Ex. 1001, Fig. 6 Excerpt (Annotated)

45. As illustrated in the above figure, the left endless belt 226 is disposed “interior” to the slats 228, and not on top of the running belt, i.e., above the lower slats and below the upper slats. This disclosure in the '580 Patent contradicts Woodway's position that disposed on means positioned above and in a weight-bearing relationship.

E. A POSA would have been motivated to combine Magid with Chickering or Socwell

46. As I explained in my first declaration, it would have been obvious to a POSA to combine the manual treadmill topology with a curved running surface disclosed in Chickering or Socwell with the known technique of a one-way clutch to prevent treadmill belt motion in a forward direction as disclosed in Magid. (Ex. 1003, ¶¶230, 425.)

47. As I explained in my first declaration, Chickering, Socwell and Magid

are from the same field – Exercise Equipment, more specifically treadmills for home exercise use. (Ex. 1003, ¶¶ 231, 426; Chickering, Ex. 1013, 1:1-7; Socwell, Ex. 1011, 1:10-12; Magid, Ex. 1012, 1:53-56; 3:23-27.)

48. Woodway/Dr. Blair argue that Magid is limited to therapeutic use and Chickering and Socwell are limited to non-therapeutic exercise: “Magid is focused on a two-belt therapeutic walker device” whereas “Both Socwell and Chickering are also directed to a non-therapeutic ‘exercising treadmill’ or ‘exercise device’ for purely recreational purposes.” (POR, 29-30; Dr. Blair Declaration, Ex. 2018, ¶¶ 143, 147-148; 152-153.)

49. However, Magid describes its walker apparatus being used for exercise and that its disclosure should be interpreted broadly:

Another objective of the present invention is to provide a walker apparatus which may be used with the functional supporting frame of an exercise walker, the latter having an adjustable hand bar for use by small children, physically handicapped people, old people and by those who feel more confident holding onto something while exercising.

(Magid, Ex. 1012, 1:53-59, emphasis added.)

Any one of the different embodiments of the walker apparatus of the present invention may further comprise the functional supporting frame of an exercise walker, a baby chair or a baby stroller. When used as an exercise walker, the walker apparatus is an ideal way of

losing weight and keeping fit. When used as a baby chair or baby stroller, the walker apparatus provides a safe and effective way for exercising a baby and for teaching the baby to stand and walk.

(Magid, Ex. 1012, 3:23-31, emphasis added.)

While the present invention has been described in connection with what is considered the most practical and preferred embodiments, it is understood that this invention is not limited to the disclosed embodiments but is intended to cover various arrangements included within the spirit and scope of the broadest interpretation so as to encompass all such modifications and equivalent arrangements.

(Magid, Ex. 1012, 7:61-67, emphasis added.)

50. Chickering discloses that its treadmill can be used for walking, which a POSA would have understood relates to therapeutic use:

This invention relates to a new type of treadmill exercising device, and more particularly to an exercising device on which the user can simulate the acts of walking, jogging and running ...

(Chickering, Ex. 1013, 1:1-5.)

51. Socwell describes its treadmill as having “rehabilitative functionality” and being used for “rehabilitative exercises” which a POSA would have understood relates to therapeutic use:

Another meaningful disadvantage of prior art exercise treadmills is their general inability to reduce the physical impact to the joints and muscles of a user conducting general exercise routines in relation

thereto. In this regard, an exercise treadmill which is capable of reducing the physical impact on the knees and back of a user will resolve several barriers left unsolved by known prior art devices, especially in light of providing an operative role in **rehabilitative exercises**.

(Socwell, Ex. 1011, 3:1-9, emphasis added.)

Moreover, it is an object of the present invention to provide a curved deck treadmill which is capable of reducing the physical impact to the joints and muscles (e.g., the knees and back) of a user, thus providing an operative device having **rehabilitative functionality**.

(Socwell, Ex. 1011, 3:52-57, emphasis added.)

Similarly, the novel configuration of the present invention is capable of reducing the physical impact to the joints and muscles (e.g., the knees and back) of a user, thus providing an operative device having **rehabilitative functionality**. Moreover, the present invention provides a continuous, smooth **exercising** motion capable of providing meaningful exercise comfort, thereby facilitating an upper surface which supportably provides for a longer stride with more flexibility.

(Socwell, Ex. 1011, 13:38-47.)

52. I explained **how** a POSA would have combined Chickering and Magid and Socwell and Magid (Ex. 1003, ¶¶240-243; 434-437) in my first declaration. In summary, a POSA would have been motivated to modify Chickering and Socwell to include Magid's control means mounted to the front

roller or the rear roller. (*Id.*)

53. I also explained why a POSA would have been motivated to combine Chickering and Magid and Socwell with Magid in my first declaration. (Ex. 1003 ¶¶234-240, 433-434.) It would have been obvious to a POSA to combine Chickering's treadmill with Magid's control means and Socwell's treadmill with Magid's control means to permit only unidirectional movement of the running belt to reduce the risk of a user stepping onto the running belt of the treadmill and losing their balance when the belt moves in the forward direction. (*Id.*)

54. Dr. Blair identified the same problem of unintended motion with Socwell and Chickering:

The treadmill belt of Socwell is free to move in both a forward direction and a rearward direction. When a user steps onto the rear of the treadmill having a curved running surface, the user's weight may cause the treadmill belt to move in the unintended rotational direction, particularly if the user inadvertently mounts the device from or towards the rear.

(Dr. Blair Declaration, Ex. 2018, ¶166.)

The same is true of Chickering, which discloses two embodiments with a dual-planar running surface – one plane angling downward toward the rear of the device for acceleration and one plane angled upward toward the rear of the device for deceleration. Again, if a user were to mount the device from or towards the rear and step only on

the upward angled plane, the user's weight may cause the treadmill belt to move in the unintended rotational direction.

(Dr. Blair Declaration, Ex. 2018, ¶167.)

55. Several professional organizations have produced standards to provide guidance to manufacturers regarding both exercise equipment safety in general and other standards specifically for treadmill safety. *See* ASTM Standard, Ex. 1019; ISO Standard, Ex. 1020; and ACCC Product Safety Supplier Guide, Ex. 1007. These standards establish requirements for foot rails and handrails on treadmills to address user stability. (ASTM Standard, Ex. 1019, 3-4; ISO Standard, Ex. 1020, 8.)

56. As I explained during my deposition for a related proceeding, the ISO standard defines a treadmill as “training equipment with a unidirectional moving surface on which a walking or running activity can take place, where the feet are free to leave the moving surface.” (ISO Standard, Ex. 1020, 4; Ex. 2024, 61:20-25.) Dr. Blair explained that a POSA would understand from this definition “that the [treadmill] is designed to be only walked on or run on in one direction.” (Dr. Blair Deposition, Ex. 1040, 58:18-20.) In view of this definition, a POSA would have further motivated to modify Chickering and Socwell with Magid's unidirectional control means to limit their moving surfaces to one direction.

1. Magid does not teach away from its combination with Chickering or Socwell

57. Woodway/Dr. Blair argue that Magid teaches away from its

combination with Chickering or Socwell because “Magid is focused on a two-belt therapeutic walker device” and that “[i]f a single belt were utilized, the key 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.” (POR, 29; Dr. Blair Declaration, Ex. 2018, ¶144.) Woodway/Dr. Blair argue that “[d]esign and engineering requirements would urge a POSA to avoid combining the teachings of Socwell, Chickering, or other non-planar or multi-planar treadmills with Magid[‘s]” “narrow-use walker device with a flat or uniplanar surface.” (POR, 33 citing Dr. Blair Declaration, Ex. 2018, ¶¶165-170.)

58. My proposed combination of Chickering and Magid is not relying on Magid’s two-belts or flat or uniplanar surface for satisfying any claim limitations. Therefore Magid’s disclosure regarding these features are not relevant to the proposed combinations.

59. Woodway/Dr. Blair further argue that Chickering’s disclosure of its treadmill not needing a handle, railings, or belts “criticizes the features emphasized in Magid.” (POR, 33 citing Chickering, Ex. 1013, 1:40-47.) However, Chickering discloses its treadmill may be provided with “handles, railings and the like.” (Chickering, Ex. 1013, 3:38-41.) Further, standards require such features. (ASTM Standard, Ex. 1019; ISO Standard, Ex. 1020.)

F. A POSA would have been motivated to substitute Sclater for Magid

60. As I explained in my first declaration, A POSA would have been motivated to substitute Sclater's one-way sprag-type bearing assembly for Magid's ratchet-and-pawl one-way mechanism. (Ex. 1003, ¶¶271-278, 465-472.)

61. Intentionally left blank.

62. I explained in my first declaration **how** a POSA would have replaced Magid's control means with Sclater's one-way bearing assembly that was commercially available. (Ex. 1003, ¶¶276-278, 470-472.)

1. My obviousness arguments do not rely on hindsight

63. I explained in my first declaration **why** a POSA would have replaced Magid's control means with Sclater's one-way bearing assembly to obtain predictable results, e.g., reduced noise and improved durability. (Ex. 1003, ¶¶271-275, 465-469.)

64. Woodway/Dr. Blair argue that "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." (POR, 35.)

65. As I explained in my first declaration, a POSA would have been specifically motivated to select the sprag-type clutch disclosed in Sclater based on Sclater's description of the sprag-type clutch for back stopping a conveyor belt, and based on the description of such sprag-type clutches as a commercially

available option for exercise equipment in the Emerson bearing catalog from 2001. (Ex. 1003, ¶¶89, 91, 273-278, 437, 467-472.)

66. Sclater further discloses that roller clutches are better suited for high speed freewheeling than pawl-and-ratchet clutches. This is 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. Additionally, because there are multiple sprags, they distribute the load over a larger surface area:

Fig. 9 Cam and Roller Clutch: This over-running clutch is better suited for higher-speed free-wheeling than a pawl-and-ratchet clutch.

The 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.

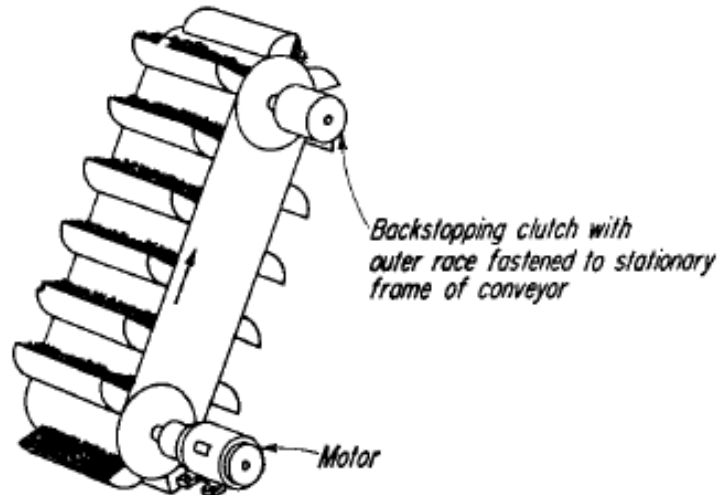
(Sclater, Ex. 1017, 303, emphasis added.)

Overrunning sprag clutches transmit torque in one direction and reduce speed, rest, hold, or free-wheel in the reverse direction. Applications include overrunning, back stopping and indexing. Their selection – similar to other mechanical devices – requires a review of

the torque to be transmitted, overrunning speed, type of lubrication, mounting characteristics, environmental conditions, and shock conditions that might be encountered.

(Sclater, Ex. 1017, 320, emphasis added.)

67. Sclater illustrates a back stopping mode of operation for a conveyor belt using a “sprag-type clutch[]” in which the “outer race is fastened to [the] stationary frame of [the] conveyor”:



Sclater, Ex. 1017, 320

Fig. 2 Backstopping permits rotation in one direction only. The clutch serves as a counter-rotation holding device. An example is a clutch mounted on the headshaft of a conveyor. The outer race is restrained by torque-arming the stationary frame of the conveyor.

(Sclater, Ex. 1017, 320.)

68. A POSA would have understood that conveyers and treadmills operate the same. Accordingly, a POSA would have considered a sprag-type one-

way clutch bearing for an exercise equipment application, such as a treadmill. For example, Emerson is a bearing catalog from 2001 that specifically describes its NSS Series sprag-type one-way clutch as an option for multiple “Field Applications,” including “Exercise equipment,” “Food processing equipment,” “Printing presses,” and “Roll conveyors.” (Emerson, Ex. 1018, 52-53; Ex. 1003, ¶¶91, 275, 469.)

69. Commercially available and inexpensive sprag-type clutches would be attractive since they require less design and qualification work to implement as well. For example, as explained by Dr. Blair a user could identify a problem and a potential solution in a catalog, e.g., the Emerson catalog (Emerson, Ex. 1018) and then call the tech support line to confirm their clutch selection.:

Q. All right. So how would a person of ordinary skill in the art use a catalog like this?

A. Well, it depends on where they are in their process. Like, for example, on page 8, there's some general description about how these systems work. So they may use it to educate themselves on principles of operations on how they work. If they've identified a particular problem they're trying to solve, they would go into the more detailed sections, like in -- starting on pages 34 that has the specifications.

And use their calculations or their understanding of the problem they're trying to solve. And use this as a collection tool to go through and pick up potential -- pick out potential products in this catalog that might serve their purpose.

Oftentimes, in reality, what they do, they get that far and then they call up the tech support line at the company and have a detailed conversation with somebody on the company side that can really help them dial in their needs.

Q. Help them pick out the specific clutch or bearing for their application?

A. Yes.

(Dr. Blair Deposition, Ex. 1038, 89:12-90:12.)

Q. So based on the description on page 48 that this is serving the fitness industry and exercise equipment field applications, would a person of ordinary skill in the art have considered these one-way bearings for treadmills?

A. If they -- if the person of ordinary skill in the art had already identified the need that a one-way bearing fulfills, then they would potentially -- they'd be drawn to -- they would certainly be drawn to this -- or this particular product because it calls it out as an application for it.

(Dr. Blair Deposition, Ex. 1038, 92:4-14.)

70. Dr. Blair further confirmed that a POSA would have used the Emerson catalog to find a solution for “Preventing motion in the unintended direction” on “a curved manual treadmill”:

Q. In a different application, then, how the Morse KK clutch would be utilized in a curved manual treadmill?

A. It's the same physical principle, but it's a different application. You need different reasons you're putting it there.

* * *

Q. What's the reason for including the Morris KK clutch or something like the Morse KK clutch in a curved manual treadmill?

A. The direction. Preventing motion in the unintended direction.

(Dr. Blair Deposition, Ex. 1038, 104:21, 105:8-12).

71. Woodway argues that Petitioner's argument does not apply to ratchet gears that do not include teeth. (POR, 38.) However, as admitted by Dr. Blair, Magid does not describe any ratchet gears that do not have teeth. (Dr. Blair Deposition, Ex. 1038, 85:16-19.) Woodway's no teeth argument is not relevant to Petitioner's proposed substitution of Magid's toothed ratchet gear with Sclater's one-way bearing.

VI. Objective Indicia Does Not Support Patentability

72. Intentionally left blank

VII. Conclusion

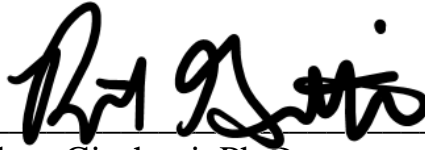
73. In my opinion, all the elements of the Challenged Claims are disclosed by the references discussed above and in my first declaration and that the claims are unpatentable in view of these prior art references.

74. I reserve the right to supplement my opinions to address any information obtained, or positions taken, based on any new information that comes

to light throughout this proceeding.

I declare under penalty of perjury that the foregoing is true and accurate to the best of my ability.

Executed on: April 24, 2024



Robert Giachetti, Ph.D.