

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GARMIN INTERNATIONAL, INC.,
Petitioner,

v.

SARIS EQUIPMENT, LLC,
Patent Owner.

IPR2024-01294
U.S. Patent No. 10,434,394

**PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. § 312 AND 37 C.F.R. § 42.104**

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EXHIBIT LIST

Ex.1001	U.S. Patent No. 10,434,394 (“the ’394 Patent”)
Ex.1002	Prosecution History of U.S. Patent No. 10,434,394 (U.S. Patent Application Number 16/227,624)
Ex.1003	Declaration of Alan Coté
Ex.1004	U.S. Patent App. Pub. No. 2011/0136630 to Zwinkels (“Zwinkels”)
Ex.1005	WO Pub. No. 2018/027216 to Papadopoulos (“Papadopoulos”)
Ex.1006	U.S. Provisional Application No. 62/371,658, filed August 5, 2016 (“Papadopoulos Provisional”)
Ex.1007	U.S. Provisional Application No. 62/546,768, filed August 17, 2017
Ex.1008	U.S. Provisional Application No. 62/637,003, filed Mar. 1, 2018
Ex.1009	Claim Chart Mapping Papadopoulos Provisional To Claim 1 Of Papadopoulos.
Ex.1010	U.S. Patent App. Pub. No. 2013/0130798 to Nir et al. (“Nir”)
Ex.1011	U.S. Patent No. 7,604,575 to Papadopoulos (“Papadopoulos ’575”)
Ex.1012	U.S. Patent No. 6,322,480 to Lim (“Lim”)
Ex.1013	Curriculum Vitae of Alan Coté

I. INTRODUCTION

Garmin International, Inc. (“Petitioner”) respectfully requests the Board institute *Inter Partes* Review of and cancel claims 1, 12, and 25-26 (“the Challenged Claims”) of U.S. Patent No. 10,434,394 (“the ’394 Patent,” Ex.1001).

The ’394 patent relates to a movable support for an item of exercise equipment, such as a bicycle. The support provides for movement in multiple directions, including in a fore-aft/horizontal direction and an upward-downward/vertical direction, in response to forces applied by the user. The ’394 patent seeks to allow this movement to provide for a more realistic training experience in an indoor environment that better simulates an outdoor environment. However, it was already known to design bicycle trainers that provided for such simultaneous horizontal and vertical movement to better simulate outdoor riding conditions. In addition, to the extent the ’394 patent is construed to require such, it was also known to provide for tilting/side-to-side movement on bicycle trainers to further enhance the realism of the experience provided by a bicycle trainer.

Petitioner, therefore, respectfully requests that institution be granted and that the Challenged Claims be cancelled as unpatentable.

II. GROUNDS FOR STANDING

Petitioner certifies that the '394 Patent is eligible for *Inter Partes* Review (“IPR”) and that Petitioner is neither barred nor estopped from requesting IPR challenging the Challenged Claims. 37 C.F.R. § 42.104(a).

III. NOTE

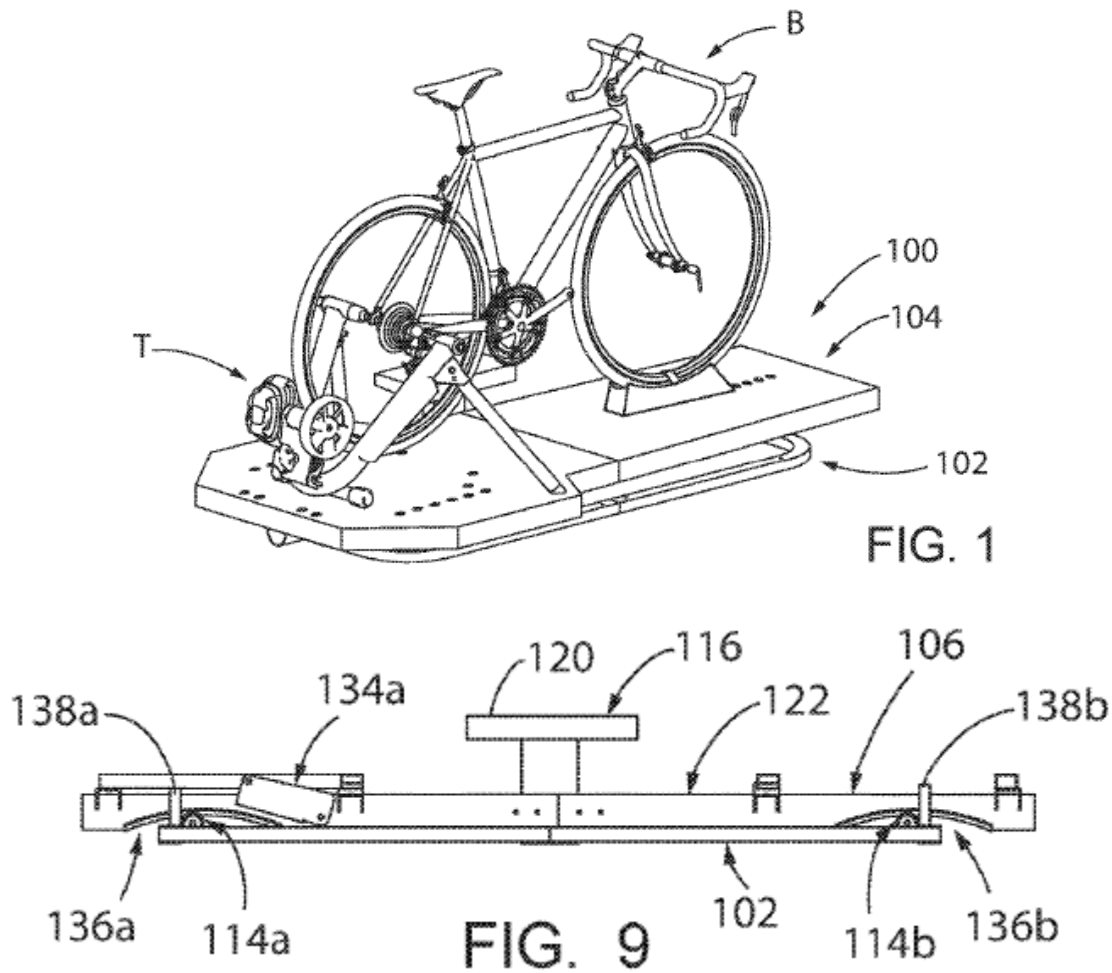
Petitioner cites to the original page numbers of the accompanying exhibits. **Emphasis** in quoted material has been added unless indicated otherwise. Claim terms are presented in *italics*.

IV. SUMMARY OF THE '394 PATENT

The '394 Patent, titled “Movable Support for Exercise Equipment,” was filed on December 20, 2018, issued on October 8, 2019, and claims priority to two provisional applications filed on August 17, 2017 and March 1, 2018, respectively. Ex.1001, codes (22), (45), (54), (60). The '394 Patent explains that indoor exercise equipment has long been used to “simulate exercise activities that are typically done in an outdoor environment.” Ex.1001 at 1:16-18. For example, treadmills allowed users to walk or run indoors as opposed to outdoors, and stationary cycles or bicycle trainers, which allow conventional bicycles to be used indoors, allowed users to experience cycling-type exercise indoors as opposed to outdoors. *Id.* at 1:20-25. By the earliest possible priority date of the '394 Patent in 2017, it was already known that indoor exercise equipment could be designed to simulate outdoor conditions

such as by the incline of a treadmill being adjusted to simulate “running or walking uphill or downhill” or by a bicycle trainer allowing a bicycle to “tilt side-to-side and to adjust an angle of inclination either upwardly or downwardly.” *Id.* at 1:31-37.

The '394 patent aims “to enable a user to more realistically experience movement that occurs in an outdoor environment when using an item of exercise equipment in an indoor environment.” *Id.* at 1:38-41. Figures 1 and 9 are illustrative and reproduced below:



Ex.1001, Figs. 1, 9.

The '394 patent describes a movable exercise equipment support 100 that, in embodiments, can generally include a platform 104 having an upwardly facing surface that can support a bicycle B and a “relatively conventional trainer” T of a type that is “commonly available,” though any other type of trainer may be employed and other types of stationary exercise equipment may be supported. *Id.* at 9:9-31. In embodiments, the platform 104 is secured to a frame 106 that is movably mounted to a base 102 and that is movable relative to the base 102 in response to input forces applied by the user to the pedals of the bicycle B during use. *Id.* at 9:31-36. In embodiments, the frame 106 can include a “longitudinal frame member 122 [that] is provided with rear and front engagement areas 136a, 136b, respectively” which “allow frame 106, and thereby platform 104 . . . to move in an axial or fore-aft direction relative to the base 102 in response to input forces applied by the user to the pedals of bicycle B.” *Id.* at 10:26-34. “The rear and front engagement areas 136a, 136b are identically constructed, and have an arcuate configuration that provides movement of the frame 106 upwardly and downwardly as the frame 106 is moved in the axial or fore-aft direction relative to the base 102.” *Id.* at 10:34-38.

The '394 patent asserts that the “axial fore-aft movement” provided by its exercise equipment support “provide[s] a realistic feel during operation of the item of exercise equipment.” *Id.* at 30:59-63. The '394 patent also asserts that, in certain embodiments, “[t]he axial exercise equipment movement can be combined with

lateral or tilting movement, to further enhance the realistic feel experienced by the user during operation.” *Id.* at 30:63-66.

As shown below, the structures and functionalities claimed by the Challenged Claims of the ’394 Patent, including bike trainers that allowed for combined fore-aft movement and upward and downward movement, were previously known in the art. Ex.1003 ¶¶34-38. In addition, while not claimed by the Challenged Claims, bike trainers that allowed for combined fore-aft movement and tilting/side-to-side movement, were also previously known in the art. Ex.1003 ¶¶36-38.

V. PROSECUTION HISTORY SUMMARY

The ’394 Patent application was filed as Application Number 16/227,624 on December 20, 2018. Ex.1001, codes (21), (22). The ’394 Patent claims priority to Provisional Application Number 62/546,748 (Ex.1007), filed on August 17, 2017, and Provisional Application Number 62/637,003 (Ex.1008), filed on March 1, 2018. Ex.1001, codes (60), (63). Because the prior art relied upon in this Petition pre-dates the ’394 Patent’s earliest possible priority date of August 17, 2017, Petitioner simply assumes this priority date applies. Petitioner takes no present position on whether the ’394 Patent is entitled to claim priority to this date and reserves the right to later challenge its entitlement to that priority date.

During prosecution of the application that matured into the ’394 Patent, the Examiner issued a Non-Final Rejection, which rejected claims 1-4, 6-14, and 16-20

as anticipated by U.S. Patent App. Pub. No. 2013/0130798 to Nir et al. (Ex.1010). Ex.1002 at 207-210. Applicant conducted an interview with the Examiner during which an amendment requiring a “movable interconnection” was discussed, and the Examiner also suggested an amendment “directed to the platform moving parallel relative to the base when moved in a fore-aft direction.” Ex.1002 at 225.

In response to the Non-Final Rejection, Applicant amended the claims to add, *inter alia*, the following underlined limitations:

- “a lower member adapted for placement on a support surface that lies in a support surface plane”;
- “an upper member interconnected with the lower member via a movable interconnection”;
- “wherein the movable interconnection of the upper member with the lower member is configured to enable the upper member to move forwardly and rearwardly in the fore-aft direction”; and
- “wherein the upper member is oriented parallel to the support surface plane during movement of the upper member relative to the lower member in the fore-aft direction”

Ex.1002 at 233-240. Applicant then made arguments to distinguish Nir from the amended claims. Ex.1002 at 241-247. Applicant argued that “the present invention enables the entirety of the exercise device to translate forwardly and rearwardly while maintaining the exercise device, and therefore the user in an upright position” Ex.1002 at 245 (emphasis in original). Specifically, Applicant argued that the claims were amended to emphasize this feature and noted that the amendment required that

“the upper member is oriented parallel to the support surface plane during movement of the upper member relative to the lower member in the fore-aft direction.” Ex.1002 at 245. Applicant argued that this feature distinguished Nir, which Applicant argued teaches a pivoting or rearward and forward tilting or tipping of the device at various non-parallel angles relative to the base (as shown in Figs. 3B (forward tipping) and Fig. 3C (rearward tipping) of Nir). Ex.1002 at 245-246; *see also* Ex.1002 at 243-244. Applicant argued this was distinct from the present invention, as claimed, “in which the device and user remain parallel to the support surface during operation.” Ex.1002 at 246.

While only certain dependent claims were amended to recite an ability “to pivot relative to the base about a longitudinal pivot axis that extends in the fore-aft direction” and the independent claims did not recite any side-to-side or tilting movement (Ex.1002 at 233-240) (claims 6, 16, and 31), Applicant nonetheless also generally argued that “[t]he equipment support of the present invention provides controlled fore-aft movement of the item of exercise equipment during use, as well as controlled side-to-side or tilting movement of the item of exercise equipment.” Ex.1002 at 241.

The Examiner then issued a Final Rejection of claims 1-4 and 11-14 under 35 U.S.C. § 102 as anticipated by U.S. Patent No. 7,604,575 to Papadopoulos (Ex. 1011) (“Papadopoulos ’575”) and of claims 6-10 and 16-20 under 35 U.S.C. § 103

as obvious over Papadopoulos '575 in view of U.S. Patent No. 6,322,480 to Lim (Ex.1012) ("Lim"). Ex.1002 at 255-262. Applicant conducted an interview with the Examiner during which the Examiner "agreed that amendments directed to the vertical movement of the platform during fore-aft movement would overcome the rejections." Ex.1002 at 270. Applicant then amended claims to add, *inter alia*, the following underlined limitations:

- "wherein the movable interconnection of the upper member with the lower member is further configured to provide upward and downward movement of the upper member relative to the support surface during movement of the upper member forwardly and rearwardly in the fore-aft direction relative to the lower member, and wherein the upper member is oriented parallel to the support surface plane during movement of the upper member relative to the lower member in the fore-aft direction and during upward and downward movement of the upper member relative to the support surface."

Ex.1002 at 283-292. Applicant then made remarks acknowledging that Papadopoulos '575 teaches a roller trainer that allows for horizontal back and forth movement during use. Ex.1002 at 279-281. Applicant argued, however, that "while Papadopoulos discloses fore-aft movement, it contains no showing whatsoever of fore-aft movement that also involves simultaneous upward and downward movement, as claimed." Ex.1002 at 281. Applicant then argued Lim does not cure this deficiency because "Lim discloses pivoting side-to-side movement" and "[c]ombining Lim with Papadopoulos simply yields a system that involves fore-aft movement as in Papadopoulos with pivoting side-to-side movement as in Lim, but

does not yield a system that involves simultaneous fore-aft and upward and downward movement, as claimed.” Ex.1002 at 281.

The Examiner then issued a Notice of Allowance with a statement of reasons for allowance that stated “the cited references do not disclose a support for an item of exercise equipment comprising an upper member movably connected to a lower member to provide upward and downward movement during forward and rearward movement of the upper member, wherein the upper member is oriented parallel to a support surface plane during fore-aft and forward rearward movement.” Ex.1002 at 300.

As discussed below, however, these limitations added via amendment: 1) requiring upward and downward movement during forward and reward movement in the fore-aft direction, and 2) requiring the upper member be oriented parallel to a support surface during this movement were already known in the art and do not render the Challenged Claims patentable, as demonstrated by the prior art discussed below that was not before the Examiner. Ex.1003 ¶¶45-48.

VI. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”) of the ’394 Patent in August of 2017 would have had a bachelor’s degree in mechanical engineering, or equivalent training, and approximately 1-2 years of experience working with

exercise equipment, such as bicycles and/or bicycle trainers. Additional education can substitute for less work experience, and vice versa. Ex.1003 ¶¶20-23.

VII. CLAIM CONSTRUCTION

Petitioner submits that for the purposes of this proceeding, the terms of the challenged claims should be given their plain and ordinary meaning, and no terms require specific construction.¹ *See Realtime Data LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“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)). Petitioner, however, reserves the right to offer an express construction should one become necessary, such as in the event Patent Owner contends any term requires construction.

VIII. RELIEF REQUESTED AND THE REASONS FOR THE REQUESTED RELIEF

Petitioner asks that the Board institute a trial for *Inter Partes* Review and cancel the Challenged Claims in view of the analysis below.

¹ Petitioner does not concede that any term in the Challenged Claims meets the statutory requirements of 35 U.S.C. § 112 or that the Challenged Claims recite patentable subject matter under 35 U.S.C. § 101.

IX. IDENTIFICATION OF HOW THE CLAIMS ARE UNPATENTABLE

A. Challenged Claims

Petitioner challenges claims 1, 12, and 25-26 of the '394 Patent.

B. Statutory Grounds for Challenges

Ground	Claims	Basis
1	1, 12, 25	35 U.S.C. § 102; these claims are anticipated by Zwinkels .
2	1, 12, 25	35 U.S.C. § 103; these claims are obvious over Zwinkels
3	1, 12, 25-26	35 U.S.C. § 103; these claims are obvious over Zwinkels in view of Papadopoulos .

U.S. Patent Pub. No. US 2011/0136630 to Zwinkels (“**Zwinkels**,” Ex.1004) was filed on November 4, 2010, and published June 9, 2011. Ex.1004, codes (22), (43). Zwinkels is thus prior art under at least 35 U.S.C. § 102(a)(2) at least as of its November 4, 2010 filing date.²

Published PCT Application WO 2018/027216 to Papadopoulos (“**Papadopoulos**,” Ex.1005) was filed August 7, 2017, designates the United States,

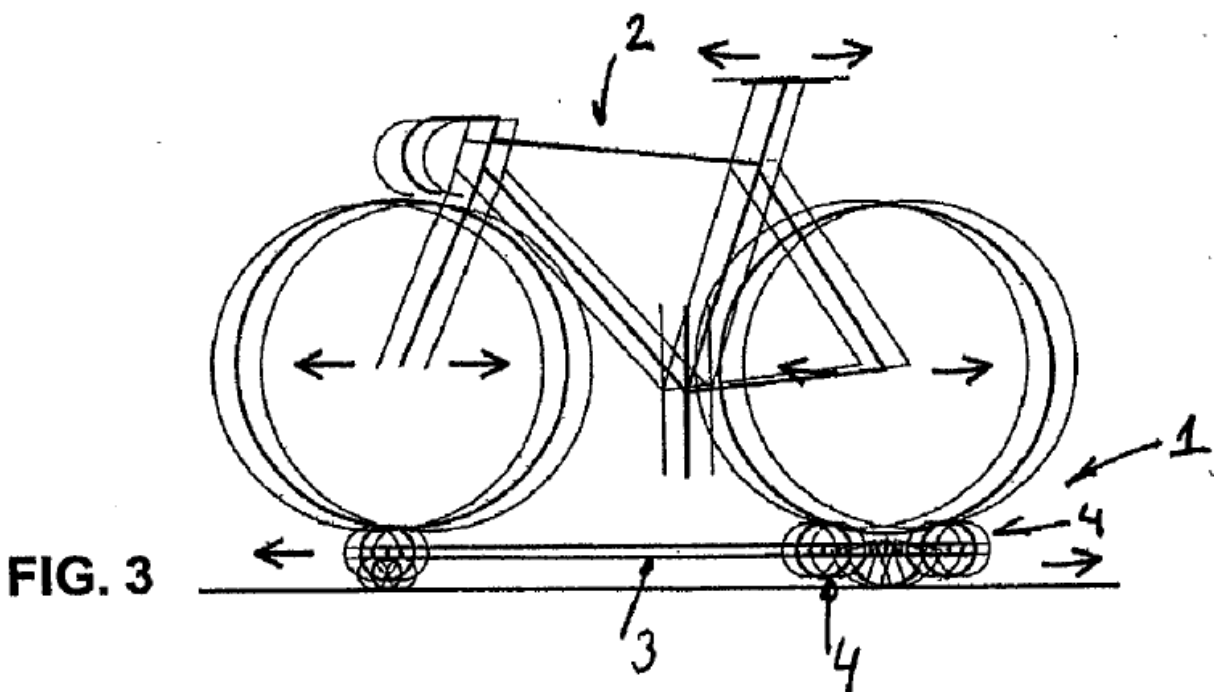
² Because the earliest application to which the '394 Patent claims priority was filed on or after March 16, 2013, the first inventor to file provisions of the AIA apply. AIA § 3(n)(1).

was published on February 8, 2018, and claims priority to U.S. Provisional Application 62/371,658 (“Papadopoulos Provisional”), which was filed on August 5, 2016. Ex.1005, codes (22), (30). Papadopoulos is thus, at a minimum, prior art under at least 35 U.S.C. § 102(a)(2) as of at least its August 7, 2017 filing date, which predates the ’394 patent’s earliest possible priority date of August 17, 2017. Further, Papadopoulos is also prior art under 35 U.S.C. §§ 102(a)(2) and 102(d)(2) as of the August 5, 2016 filing date of Papadopoulos Provisional because Papadopoulos was effectively filed as of that date. As demonstrated by Petitioner’s citations to both Papadopoulos and Papadopoulos Provisional below, Papadopoulos Provisional discloses the same subject matter as Papadopoulos that Petitioner relies on for demonstrating the unpatentability of the Challenged Claims. Further, while the Board has held that *Dynamic Drinkware* does not apply to AIA patents like the ’394 patent (*Penumbra, Inc. v. RapidPulse, Inc.*, IPR2021-01466, Paper 34, at 29-33 (PTAB March 10, 2023) (precedential)), Petitioner has nonetheless provided a claim chart demonstrating that at least 1 claim of Papadopoulos is entitled to claim priority to Papadopoulos Provisional. *See* Ex. 1009. Indeed, as shown, claim 1 of Papadopoulos Provisional largely mirrors claim 1 of Papadopoulos. *See id.*

C. **Ground 1 and Ground 2: Claims 1, 12, and 25 are anticipated under 35 U.S.C. § 102 by Zwinkels and rendered obvious under 35 U.S.C. § 103 over Zwinkels.**

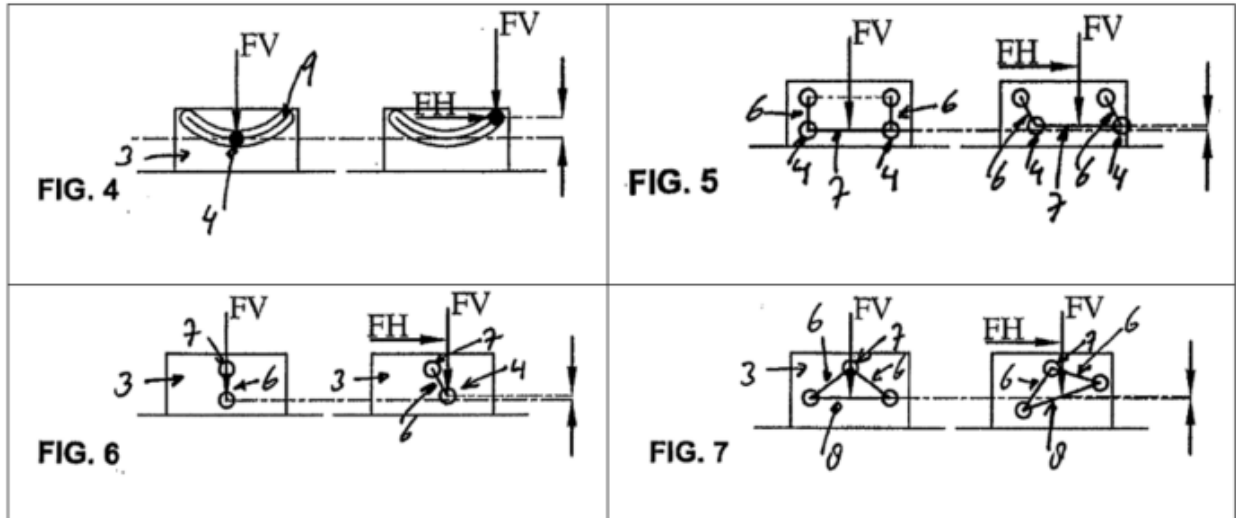
1. Summary of Zwinkels

Zwinkels relates to a training apparatus 1 for supporting a bicycle 2. Ex.1004 at Abstract, ¶[0006], ¶[0020], ¶[0031], Fig. 3.



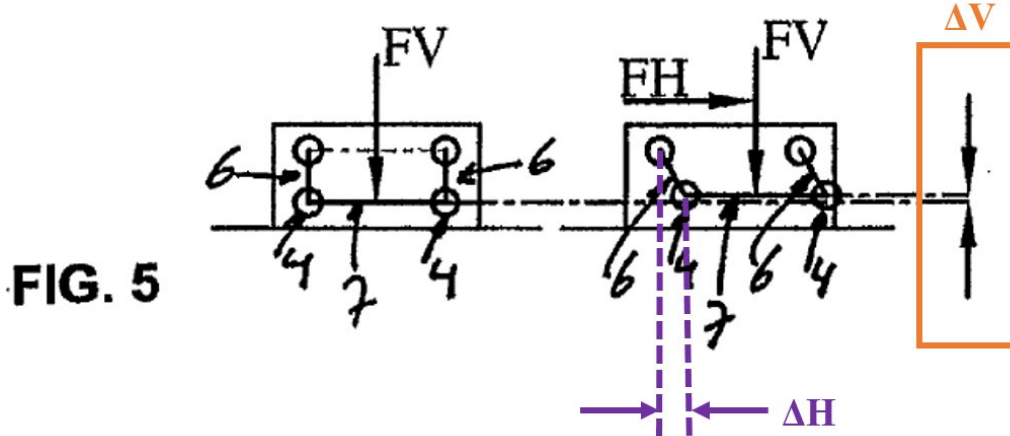
Zwinkels' training apparatus includes a roll or rollers 4 supporting the bicycle that "are movably suspended" in the frame 3 such that the suspension "convert[s] relative horizontal movements of the roll or rollers into vertical movements" Ex.1004 ¶[0020], ¶[0031]. In some embodiments, the frame is suspended above the ground (or other planar supporting surface), such as shown in Figure 1, while in others, the frame rests on the ground and supports the roll or rollers above the ground

or support surface, such as shown in Figures 4-7. Ex.1004 ¶¶[0032]-[0036], Figs. 4-7.



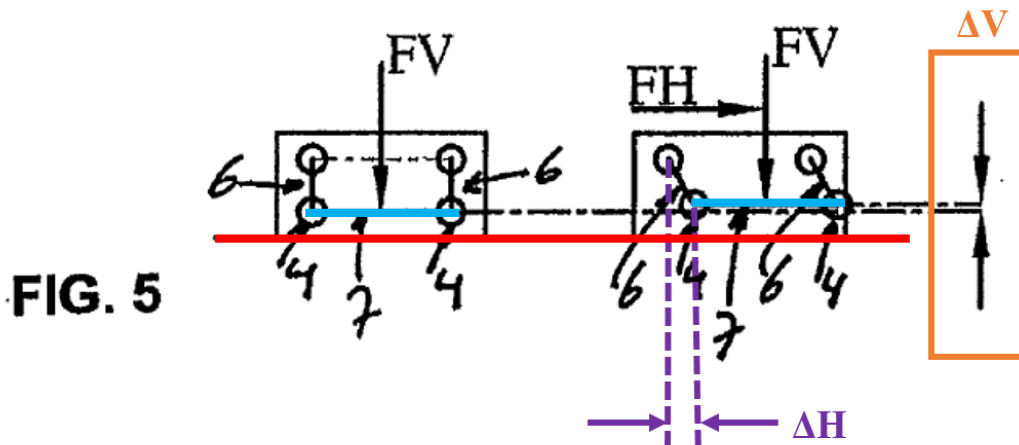
Ex.1004, Figs. 4-7.

“[T]he roll or rollers for the bicycle back wheel are at their extremities directly or indirectly supported by at least one pendulum arm [6] that has a fixed pivoting point on the frame. This provides an easy and effective solution for absorbing and attenuating horizontal movements by converting these horizontal movements to vertical movements.” Ex.1004 ¶[0024]. This horizontal movement (annotated “ ΔH ” in purple) induced by horizontal force “FH” and vertical movement (annotated “ ΔV ” in orange) induced by vertical force “FV” can be seen with respect to, *inter alia*, Figure 5:



Ex.1004 at Fig. 5 (annotated).

“FIG. 5 shows the embodiment in which there are two rollers 4 for the bicycle back wheel, and that at their extremities the rollers 4 are directly or indirectly suspended by double pendulum arms 6 arranged in the form of a parallelogram construction, wherein the said pendulum arms 6 are provided with a connecting link 7 to secure said arms 6 [to] perform a concerted swinging back and forth.” Ex.1004 ¶[0034]. The left side of Figure 5 shows the pendulum arms at a center position, while the right side of Figure 5 shows the pendulum arms after they move horizontally and vertically due to forces exerted from the cyclist’s use of the bicycle. See Ex.1004 ¶[0034], ¶[0031], ¶[0027]. On both sides of Figure 5, the plane formed by the rollers and connecting link 7 (blue) remains parallel to the ground (red) throughout horizontal movement and vertical movement, as shown in the annotated figure, below:



Ex.1004 at Fig. 5 (annotated).

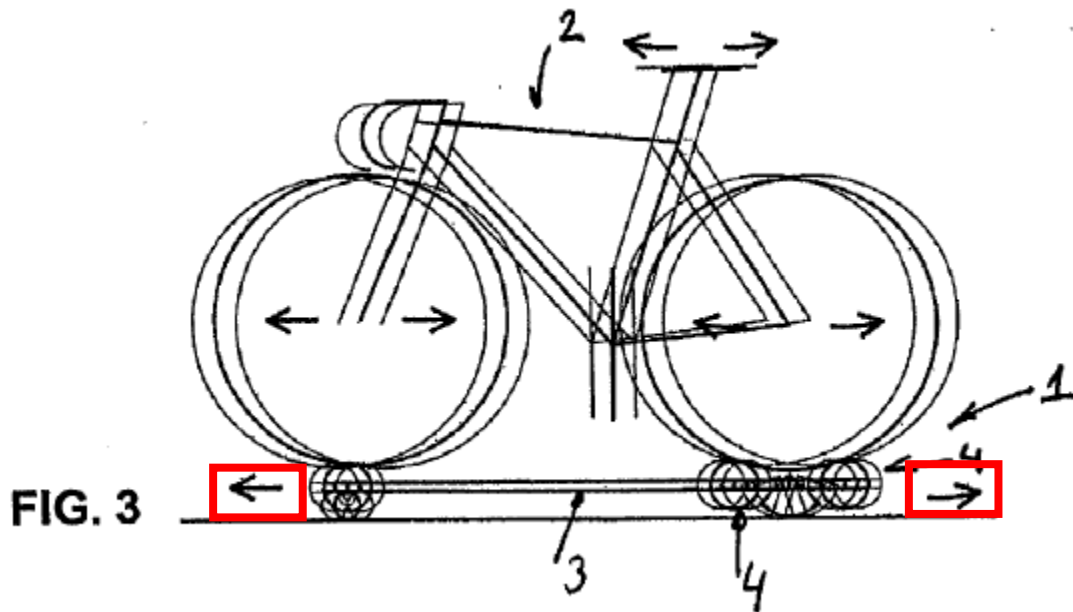
Zwinkels was not cited during prosecution of the '394 patent.

2. Claim 1

[1(pre)] A support for an item of exercise equipment that experiences forces in a fore-aft direction during use, comprising:

To the extent the preamble is limiting, Zwinkels discloses this limitation. Ex.1003, ¶62. Zwinkels teaches “a training apparatus arranged for supporting a bicycle” (*i.e., a support for an item of exercise equipment*). Ex.1004 at Abstract, ¶[0006]. Zwinkels further discloses that the training apparatus is configured “to convert relative horizontal movements of the roll or rollers into vertical movements.” Ex.1004 at Abstract, ¶[0020]. Zwinkels discloses that these referenced “horizontal movements [are] induced by the accelerations and decelerations of the training cyclist,” demonstrating that the training apparatus of Zwinkels *experiences forces in a fore-aft direction during use*. Ex.1004 at ¶¶[0027], [0031] (“the suspension of said

roll or rollers enables relative horizontal movements of said roll or rollers 4 induced by acceleration or deceleration of the bicycle 2”). A POSITA would have understood that horizontal movement induced by acceleration and deceleration of the cyclist and bicycle indicates that the training apparatus experiences forces in a horizontal/fore-aft direction during use, because horizontal/fore-aft forces are required to cause the described horizontal acceleration or deceleration. Ex.1003 ¶63. These horizontal movements induced by horizontal/fore-aft forces during use are “indicated with the arrows” in Figure 3 that are highlighted in the annotated version of Figure 3 below. Ex.1004 at ¶[0031], Fig. 3.

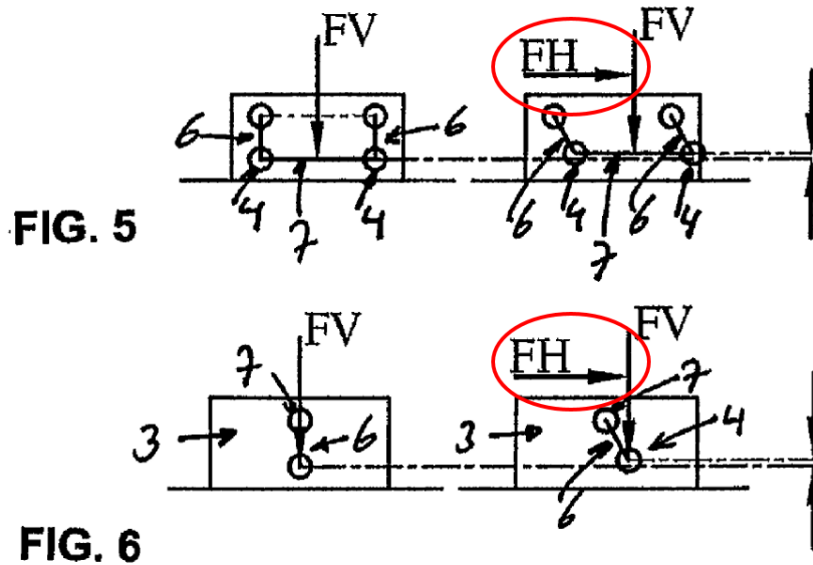


Ex.1004, Fig. 3 (annotated).

Further, Zwinkels discloses horizontal “force[s] FH” that cause the rollers (and thereby the bicycle) of its training apparatus to move horizontally in the fore-aft

direction, such as “to the right” as described and depicted in Figures 5-6 of Zwinkels.

Ex.1004 at ¶¶[0033]-[0034], Figs. 5-6 (force FH annotated below).



Ex.1004 at Figs. 5-6 (annotated).

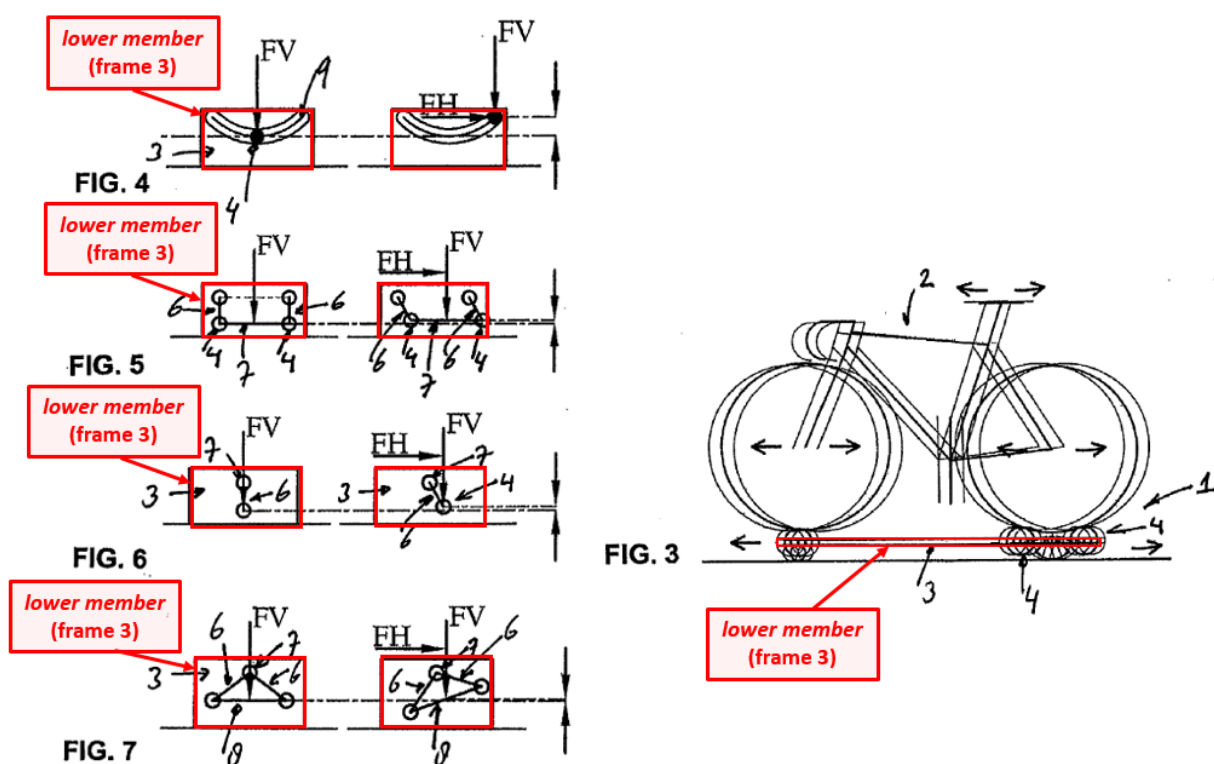
And Zwinkels describes that the rollers (and thereby the bicycle) may “swing[] back and forth.” Ex.1004 at [0034], [0025].

Zwinkels, therefore, discloses *a support for an item of exercise equipment that experiences forces in a fore-aft direction during use.* Ex.1003, ¶¶62-63.

[1(a)] a lower member adapted for placement on a support surface that lies in a support surface plane;

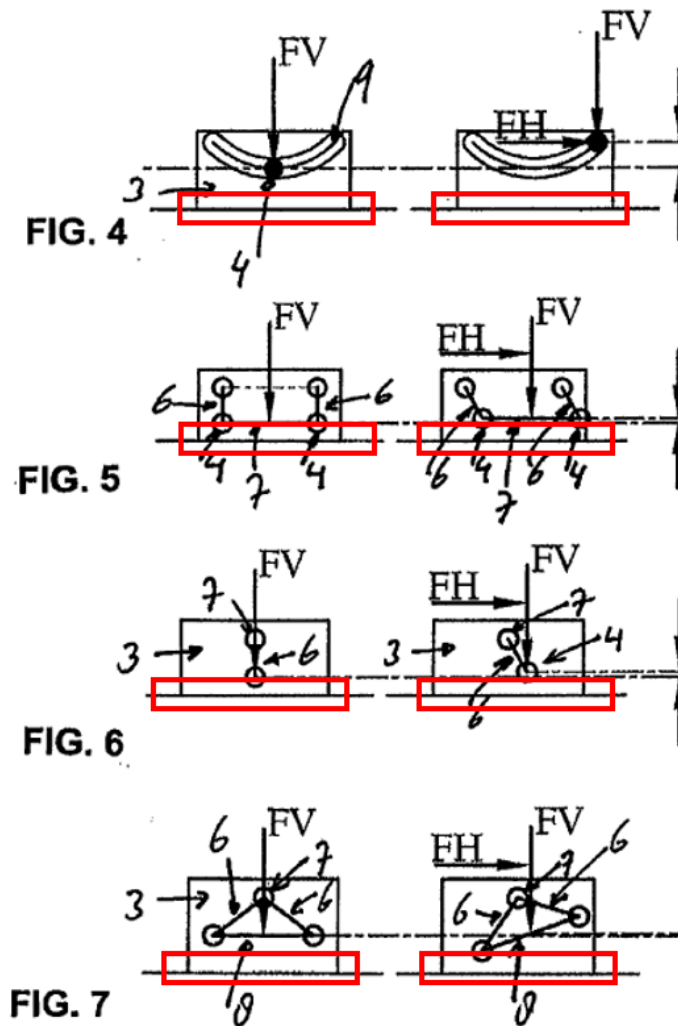
Zwinkels discloses and also renders obvious this limitation because it teaches a “frame” (*i.e., a lower member*) that is adapted for placement on the ground (*i.e., a support surface that lies in a support surface plane*). Ex.1003, ¶64.

First, Zwinkels discloses a *lower member*. Ex.1003, ¶65. Zwinkels teaches a “training apparatus 1 comprising a ground-supported or –supportable *frame 3* that is at least provided with supporting roll or rollers 4 for a bicycle back wheel 5.” Ex.1004 ¶[0028]. Zwinkels further discloses that the roll or rollers for a bicycle back wheel may be suspended by the frame. Ex.1004 ¶¶[0026], [0035]-[0036], Figs. 4-7. The annotated versions of Figures 3-7 below depict the frame of Zwinkels (i.e., a *lower member*):



Because the frame of Zwinkels rests on the ground and supports rollers above the ground, a POSITA would have understood this disclosure of a “ground-supported or –supportable frame” to constitute a *lower member*. Ex.1003 ¶¶65-66.

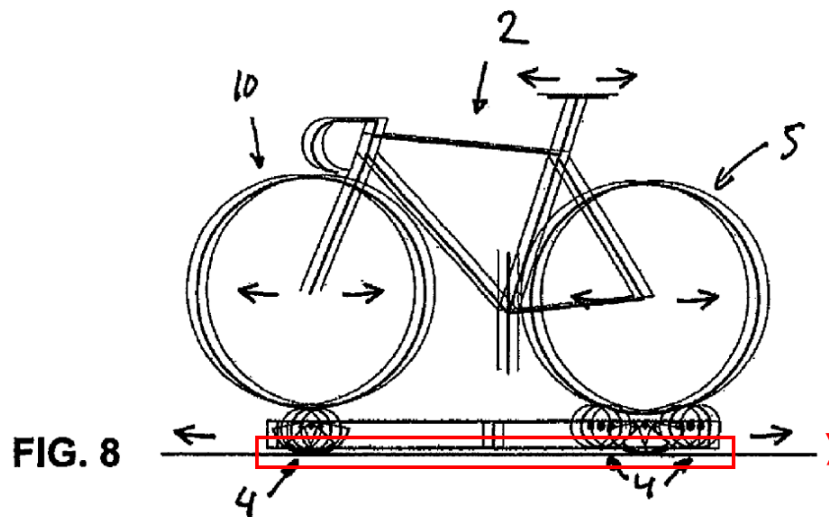
Second, Zwinkels discloses *a lower member adapted for placement on a support surface that lies in a support surface plane*. Ex.1003 ¶¶67-68. Zwinkels teaches a “ground-supported or –supportable frame 3.” Ex.1004 ¶[0028]; *see also id.* at Abstract, ¶[0006], claim 1. The ground is a *support surface*, as recognized by the '394 Patent itself, which expressly discloses that its “base 102” is “adapted to be positioned on a **supporting surface such as a floor.**” Ex.1001 at 9:26-30. Further, in Zwinkels, the ground is *a support surface that lies in a support surface plane*, because Zwinkels discloses placing its training apparatus on a flat/planar surface. *See* Ex.1004, Figs. 1-9. To the extent this limitation is interpreted to require that the *lower member* (and not just the *support surface*) must itself *lie[] in a support surface plane*, Zwinkels teaches that its frame 3 (*i.e., lower member*) can lie flush with the ground (*i.e., a support surface*) and thus can rest in the same plane as the ground (*i.e., lies in a support surface plane*), as shown by the annotated versions of Figures 4-7 below. Ex.1004 ¶[0028], Figs. 4-7.



Ex.1004, Figs. 4-7 (annotated).

Third, to the extent it is argued: i) that this limitation requires that the *lower member* (and not just the *support surface*) must itself *lie[] in a support surface plane*, and ii) that Zwinkels does not expressly disclose that its frame can lie in the same plane as the ground, such as by being flush with the ground, then it would have been obvious over Zwinkels for a POSITA to modify Zwinkels' frame to lie flush with

the ground. Ex.1003 ¶¶68-69. For example, Zwinkels depicts certain embodiments in which its frame is already nearly flush with the ground, such as shown in the below annotated version of Figure 8. Ex.1004, Fig. 8.



Ex.1004, Fig. 8 (annotated)

It would have required only a minor modification that would have been well within the level of ordinary skill to lower the frame in such embodiments to lie flush with the ground, because it would have involved only a slight lowering of the frame achieved by: i) removing any feet slightly suspending the frame above the ground, and 2) ensuring that the rollers 4 are suspended high enough relative to the bottom of the frame such that their vertical movement does not cause the rollers 4 to hit the ground during use. Ex.1003 ¶70. Thus, a POSITA would have been motivated to make such a modification because of the ease with which it could have been made. Ex.1003 ¶70. A POSITA also would have been motivated to make this minor

modification because a POSITA would have appreciated that such a design would have improved the stability of Zwinkels' training apparatus by having a larger surface area of its frame in contact with the ground. Ex.1003 ¶70. A POSITA would have further been motivated to make this modification by Figures 4-7 of Zwinkels that, at a bare minimum, would have suggested to a POSITA to place Zwinkels' frame 3 flush with the ground, to the extent those figures are not found to expressly disclose the same. Ex.1003 ¶70. Further, because this would have been a minor modification that would not have altered the functionality or operation of the remainder of Zwinkels' training apparatus (such as its rollers), a POSITA would have had a reasonable expectation of success in making such a modification. Ex.1003 ¶70. Zwinkels, therefore, also renders obvious this limitation.

Thus, Zwinkels discloses and also renders obvious this limitation. Ex.1003 ¶71.

[1(b)] an upper member interconnected with the lower member via a movable interconnection, wherein the upper member is configured to support the item of exercise equipment above the support surface, and wherein the movable interconnection of the upper member with the lower member is configured to enable the upper member to move forwardly and rearwardly in the fore-aft direction relative to the lower member in response to fore-aft forces that are transferred to the upper member from the item of exercise equipment in response to use of the item of exercise equipment;

Zwinkels discloses this limitation because Zwinkels teaches rollers connected to each other via a connecting link (*i.e.*, collectively, an *upper member*) that support

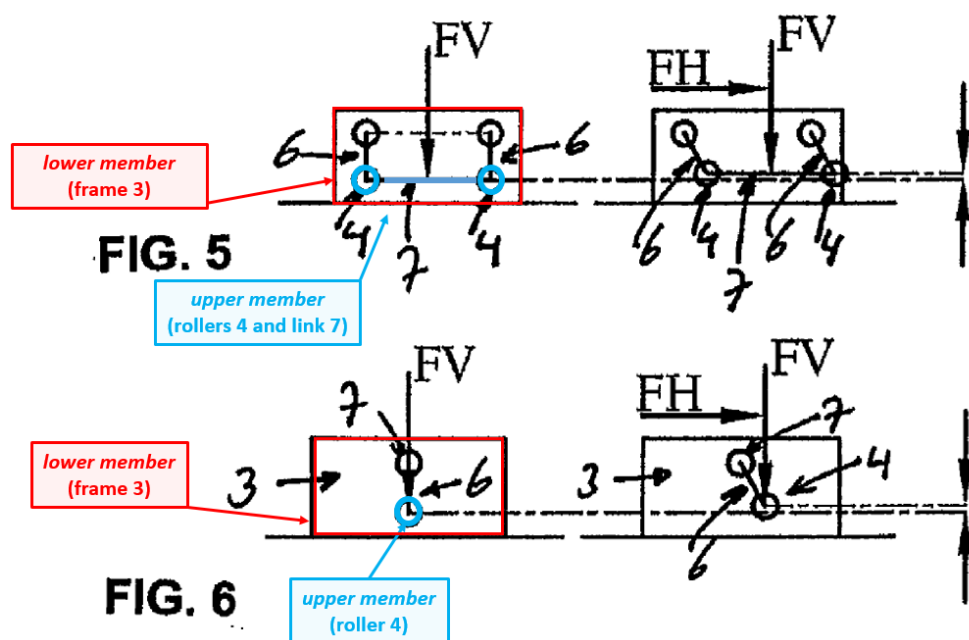
a bicycle above the ground (*support the item of exercise equipment above the support surface*) and that are connected with a frame (*i.e., lower member*) via a pendulum arm having a pivoting connection (*i.e., a movable interconnection*) that enables the rollers to move horizontally in response to forces from the cyclist/bicycle during use (*enable the upper member to move forwardly and rearwardly in the fore-aft direction relative to the lower member in response to fore-aft forces that are transferred to the upper member from the item of exercise equipment in response to use of the item of exercise equipment*). Ex.1003 ¶72.

Petitioner subdivides this limitation [1(b)] into the following sub-limitations [1(b)(i)], [1(b)(ii)], [1(b)(iii)], and [1(b)(iv)].

[1(b)(i)] an upper member

Zwinkels discloses *an upper member* in the form of rollers connected via a connecting link, such as rollers 4 connected via connecting link 7. Ex.1004 ¶¶[0025], [0034], Fig. 5; Ex.1003 ¶¶73-75. Zwinkels discloses that “[i]n an advantageous embodiment of the training apparatus of the invention, the roll or rollers for the bicycle back wheel are at their extremities directly or indirectly supported by at least one pendulum arm that has a fixed pivoting point on the frame.” Ex.1004 ¶[0024]. As discussed above at limitation [1(a)], a POSITA would have understood the frame of Zwinkels constitutes a *lower member*. Ex.1003 ¶¶64-66, 73. The frame (*i.e., lower member*) directly or indirectly supports the roller or rollers via “pendulum arms,” as

shown in the annotated versions of Figures 5-6 below, which depict the *upper member* in blue and *lower member* in red:



Ex.1004 at Figs. 5-6 (annotated). As shown in Figure 5 above, Zwinkels discloses two rollers 4 connected via a connecting link 7 (i.e., collectively, an *upper member*) that can be “directly or indirectly suspended by double pendulum arms 6” so as “to perform a concerted swinging back and forth.” Ex.1004 ¶[0034], Fig. 5, ¶[0025]. The '394 patent recognizes that an *upper member* (e.g., its “platform”) may be comprised of multiple components. See Ex.1001 at 2:34-39 (“In one embodiment, the platform may include a front platform section and a rear platform section that are secured together via a pivot connection, which enables the front and rear platform sections to be positioned in an operative use position and folded together about a transverse pivot axis to a folded storage position.”); see also *id.* at 5:10-15; 15:21-

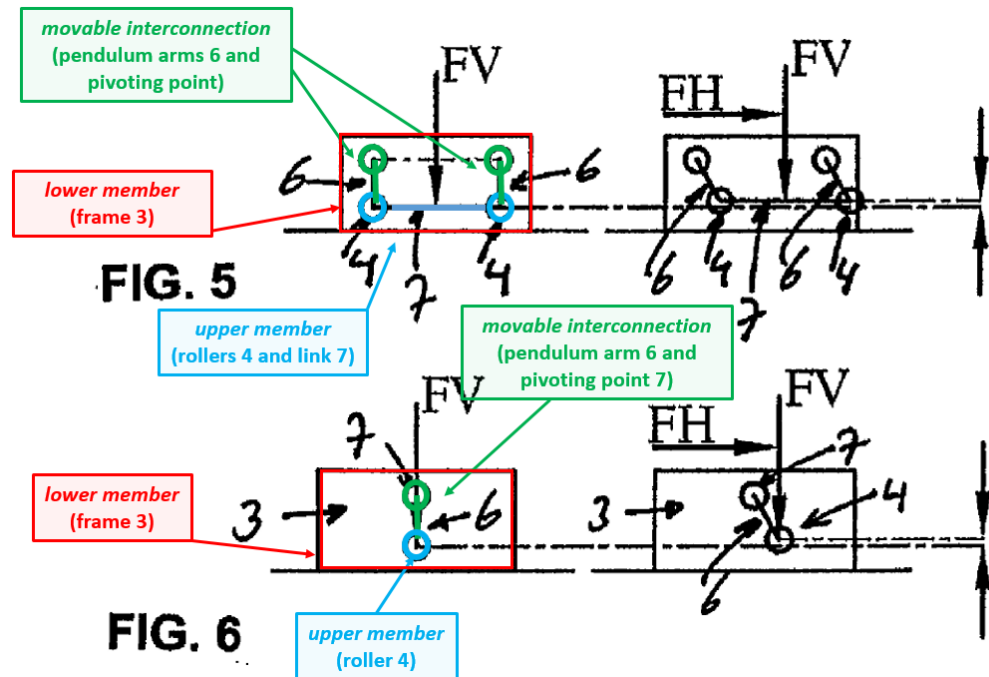
36; 16:48-17:26. Thus, like the ‘394 patent, Zwinkels discloses an *upper member* comprised of multiple components in the form of two rollers 4 connected via a connecting link 7, as depicted in Figure 5 above.

Zwinkels, therefore, discloses an *upper member*. Ex.1003 ¶¶73-75.

[1(b)(ii)] an upper member interconnected with the lower member via a movable interconnection

Zwinkels discloses an *upper member* (i.e., rollers connected via a connecting link) and a *lower member* (i.e., a frame) that are *interconnected* via one or more pendulum arms having a pivoting point (i.e., *a movable interconnection*). Ex.1003 ¶¶76-79. Specifically, Zwinkels discloses that “the roll or rollers for the bicycle back wheel are at their extremities directly or indirectly supported by **at least one pendulum arm that has a fixed pivoting point** on the frame.” Ex.1004 ¶[0024]; *see also id.* at ¶[0033], claim 2. As discussed with respect to Figure 5, the “rollers 4 are **directly or indirectly suspended by double pendulum arms 6**” (*an interconnection*) so as “to perform a concerted swinging back and forth” (*movable*). Ex.1004 ¶[0034]. Swinging back and forth constitutes motion. Ex.1003 ¶¶76-78. Accordingly, the swinging pendulum arm(s) and pivoting points of Zwinkels collectively constitute a *movable interconnection* between the rollers (i.e., *upper member*) and the frame (i.e., *lower member*) that *interconnect[s]* the rollers (i.e., *upper member*) with the frame (i.e., *lower member*). The *upper member* (blue),

lower member (red), and *movable interconnection* (green) of Zwinkels are depicted in the annotated versions of Figures 5 and 6 below:



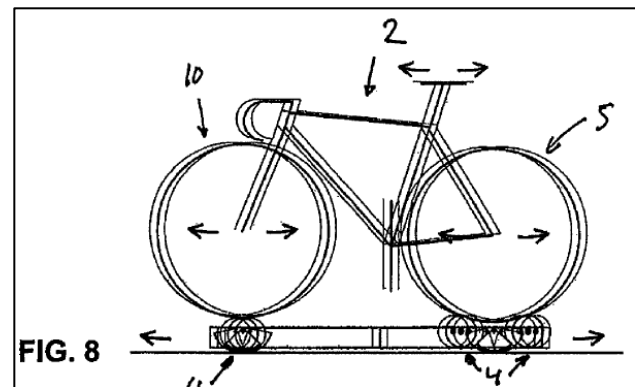
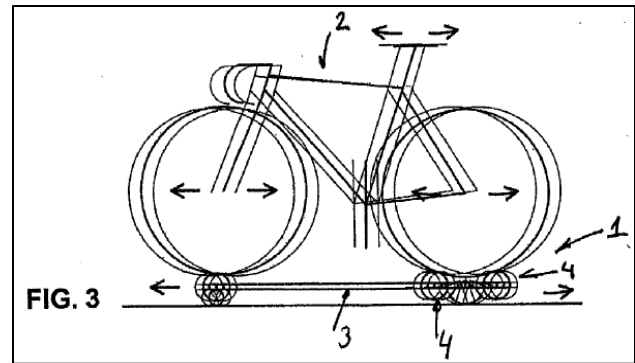
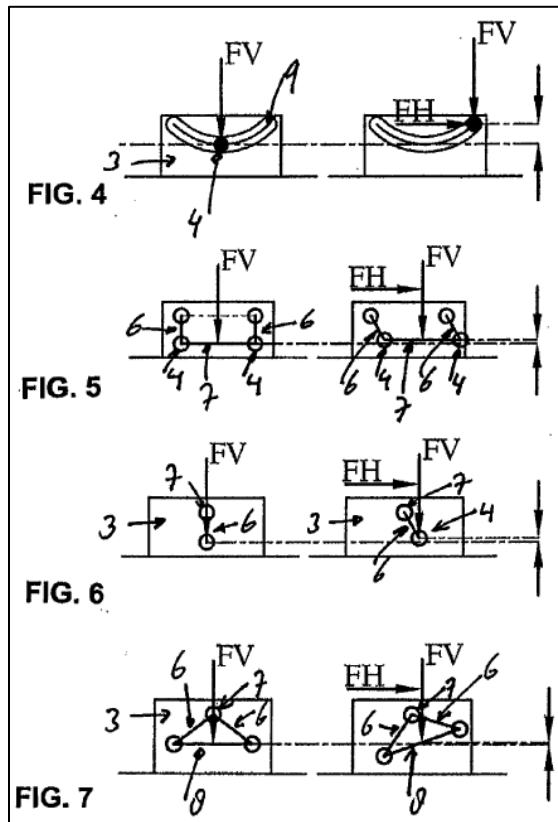
Ex.1004 at Figs. 5-6 (annotated).

Petitioner notes that the ‘394 patent states that it uses the word “connected” (such as appears within “interconnected”) in a manner that is “not limited to direct connection or attachment, but include[s] connection or attachment to other elements.” Ex.1001 at 8:57-62. Thus, the upper member need not be directly connected or attached to the lower member and the claimed “movable interconnection” similarly does not require direct connection or attachment.

Zwinkels, therefore, discloses *an upper member interconnected with the lower member via a movable interconnection*. Ex.1003 ¶79.

[1(b)(iii)] wherein the upper member is configured to support the item of exercise equipment above the support surface

Zwinkels teaches an *upper member* [] *configured to support the item of exercise equipment above the support surface*. Ex.1003 ¶80. Zwinkels teaches a “training apparatus arranged for supporting a bicycle ... that is at least provided with a supporting roll or rollers for a bicycle back wheel.” Ex.1004 at Abstract. As shown below, in every embodiment of Zwinkels, the bicycle (i.e., *item of exercise equipment*) rests atop rollers (i.e., *upper member*) that are, in turn, suspended above the ground (i.e., *above the support surface*). See, e.g., Ex.1004 at Figs. 1-9.



Ex.1004 at Figs. 3-8.

Thus, Zwinkels discloses an *upper member [1]* configured to support the item of exercise equipment above the support surface as claimed. Ex.1003 ¶¶80-82.

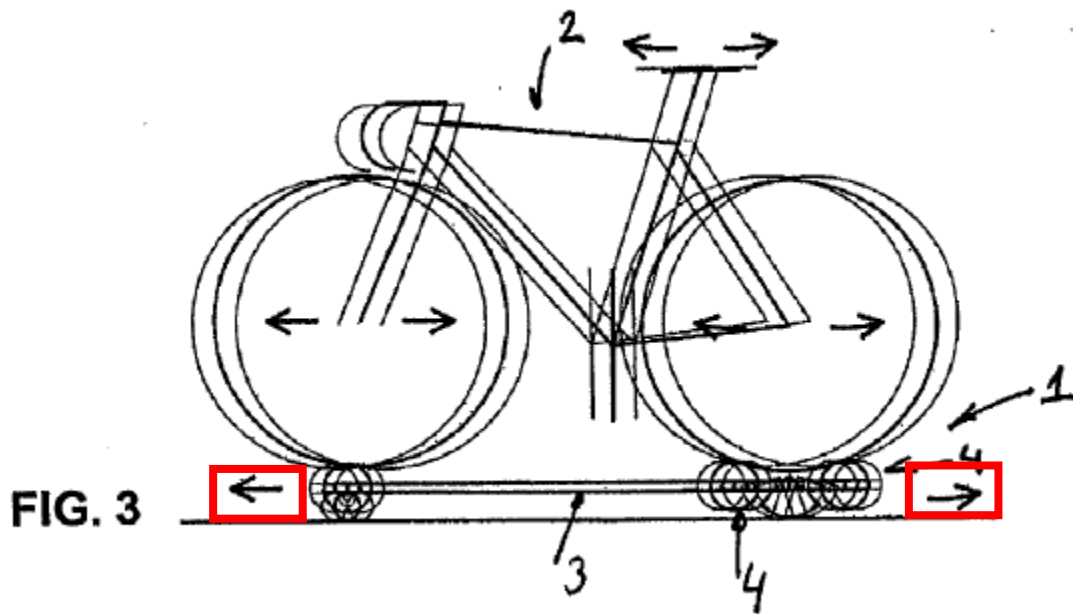
[1(b)(iv)] wherein the movable interconnection of the upper member with the lower member is configured to enable the upper member to move forwardly and rearwardly in the fore-aft direction relative to the lower member in response to fore-aft forces that are transferred to the upper member from the item of exercise equipment in response to use of the item of exercise equipment;

Zwinkels discloses this limitation because it teaches one or more pendulum arms (*movable interconnection*) interconnecting a roller or rollers (*upper member*) to a frame (*lower member*) in such a manner that the rollers (*upper member*) are

capable of *moving forwardly and rearwardly in the fore-aft direction relative to the lower member in response to fore-aft forces that are transferred to the upper member from the item of exercise equipment in response to use of the item of exercise equipment*. Ex. 1003 ¶83. For example, Zwinkels discloses that “at least the supporting **roll or rollers** for the bicycle back wheel **are movably suspended in the frame** in vertical direction [sic], wherein the suspension of said roll or rollers is arranged to convert **relative horizontal movements of the roll or rollers** into vertical movements thereby compensating and/or attenuating said horizontal movements by gravity.” Ex.1004 at ¶[0020] (emphasis added).

The various figures of Zwinkels and their accompanying description further demonstrate that Zwinkels discloses this claim limitation, because they depict the rollers (*upper member*) being movable relative to the frame (*lower member*) in a horizontal direction (*fore-aft direction*) in response to horizontal forces labeled “FH” coinciding with the accelerations and decelerations of the cyclist/bicycle during use of the bicycle (*in response to fore-aft forces that are transferred to the upper member from the item of exercise equipment in response to use of the item of exercise equipment*). Ex. 1003 ¶¶84-87. “In FIG. 3 the training apparatus 1 of the invention is shown, wherein at least the supporting **roll or rollers 4** for a bicycle back wheel **5 are movable in the frame 3** so as to allow for their movement in [a] vertical direction. The construction is arranged such that the suspension of said roll or rollers

enables relative horizontal movements of said roll or rollers 4 induced by acceleration or deceleration of the bicycle 2 (as indicated with the arrows) to convert into vertical movements, thereby compensating and/or attenuating said horizontal movements by gravity.” Ex.1004 ¶[0031]; *see also* Ex.1004 ¶[0027] (“horizontal movements induced by the accelerations and decelerations of the training cyclist”), Fig. 3 (depicting the described “arrows” showing horizontal movement with the arrows annotated).

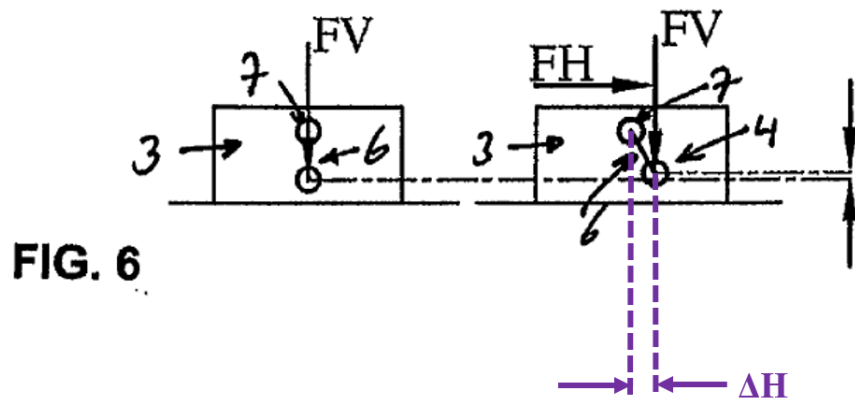


Ex.1004 at Fig. 3 (annotated).

Similarly, “The figure at the left of FIG. 6 shows the pendulum arm 6 in a resting position, whereas **the figure on the right shows the pendulum arm 6 after it has moved to the right due to a force FH**, causing that the roll 4 has moved vertically upwards. At this position the roll 4 undergoes the force of gravity FV

which counteracts **the force FH due to which the roll 4 has moved to the right.**”

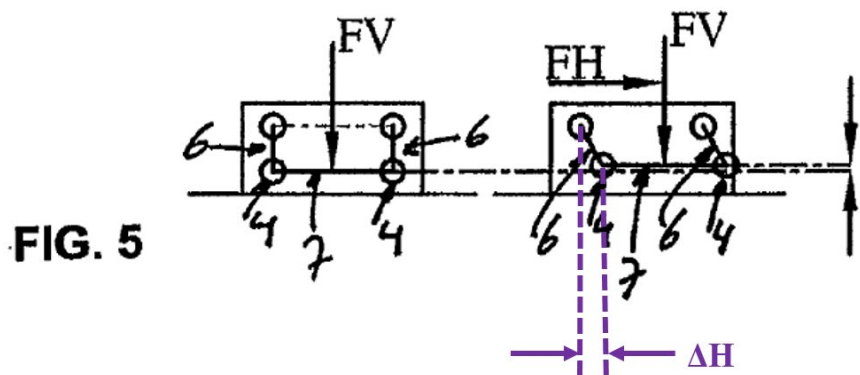
Ex.1004 ¶[0033] (emphasis added), Fig. 6 (reproduced below). This horizontal movement to the right (annotated “ ΔH ” in purple) induced by horizontal force “FH” is annotated below in Figure 6:



Ex.1004 at Fig. 6 (annotated).

Further, horizontal motion of the rollers in response to horizontal forces transferred to the rollers from use of the bicycle is also shown in Figure 5. Ex. 1003 ¶87. Figure 5 depicts “rollers 4 are directly or indirectly suspended by double pendulum arms 6 arranged in the form of a parallelogram construction, wherein the **said pendulum arms 6 are provided with a connecting link 7 to secure said arms 6 to perform a concerted swinging back and forth.**” Ex.1004 ¶[0034]. “Again, the figure at the left of FIG. 5 shows the pendulum arms 6 in a resting position, whereas **the figure on the right shows the pendulum arms 6 after they have [moved] due to the connection link 7 concertedly moved to the right due to a force FH,**

causing that the rollers 4 have moved vertically upwards. At this position, the rollers 4 undergo the force of gravity FV which counteracts **the force FH due to which the rollers 4 have moved to the right.** *Id.* This horizontal movement to the right (annotated “ ΔH ” in purple) induced by horizontal force “ FH ” is annotated below in Figure 5:



Ex.1004 at Fig. 5 (annotated).

Because Zwinkels repeatedly discloses one or more pendulum arms (*movable interconnection*) permitting rollers (*upper member*) to move horizontally or “swing[] back and forth” (*move forwardly and rearwardly in the fore-aft direction*) relative to the frame (*lower member*) in response to forces applied from a bicycle, Zwinkels discloses *wherein the movable interconnection of the upper member with the lower member is configured to enable the upper member to move forwardly and rearwardly in the fore-aft direction relative to the lower member in response to fore-*

aft forces that are transferred to the upper member from the item of exercise equipment in response to use of the item of exercise equipment as claimed. Ex.1003 ¶¶87-88.

Thus, Zwinkels discloses this limitation. Ex.1003 ¶¶88-89.

[1(c)] wherein the movable interconnection of the upper member with the lower member is further configured to provide upward and downward movement of the upper member relative to the support surface during movement of the upper member forwardly and rearwardly in the fore-aft direction relative to the lower member, and wherein the upper member is oriented parallel to the support surface plane during movement of the upper member relative to the lower member in the fore-aft direction and during upward and downward movement of the upper member relative to the support surface.

Zwinkels discloses this limitation because Zwinkels discloses that its swinging pendulum arms and pivoting points (*movable interconnection*) form a suspension that converts relative horizontal movements of the roller or rollers (*upper member*) into vertical movements (*provide upward and downward movement of the upper member ... during movement of the upper member forwardly and rearwardly in the fore-aft direction*) and because Zwinkels discloses that its rollers connected via a connecting link (collectively, *upper member*) remain parallel to the ground during this horizontal and vertical movement (*the upper member is oriented parallel to the support surface plane during movement of the upper member relative to the lower member in the fore-aft direction and during upward and downward movement of the upper member relative to the support surface*). Ex.1003 ¶90.

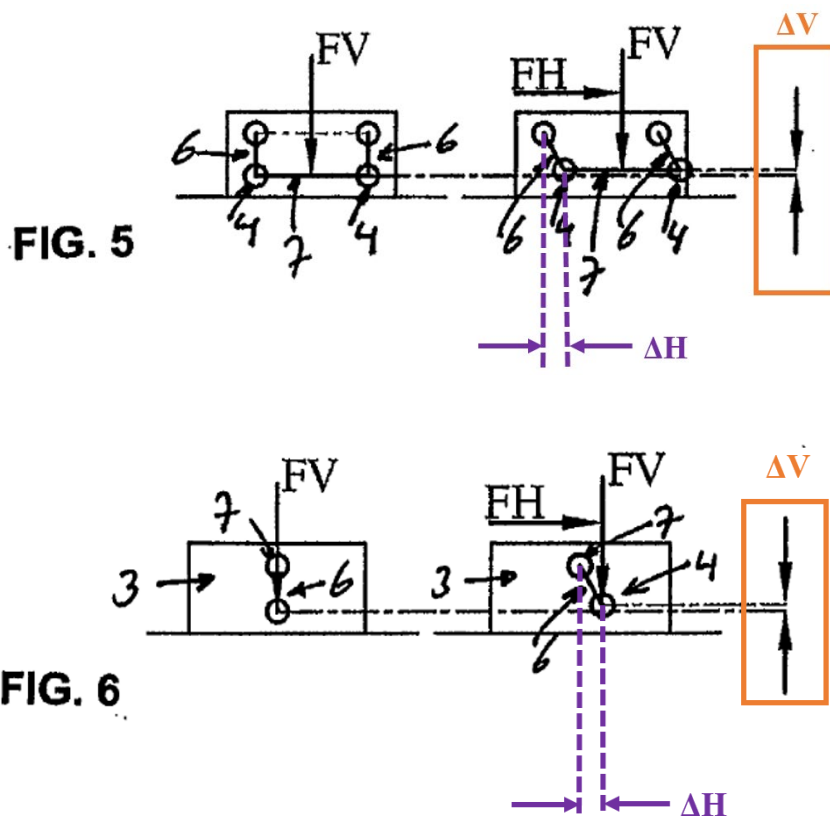
Petitioner subdivides this limitation [1(c)] into the following sub-limitations [1(c)(i)] and [1(c)(ii)].

[1(c)(i)] wherein the movable interconnection of the upper member with the lower member is further configured to provide upward and downward movement of the upper member relative to the support surface during movement of the upper member forwardly and rearwardly in the fore-aft direction relative to the lower member

Zwinkels discloses this limitation by partially converting horizontal movements of the roller or rollers (*upper member*) into vertical movements (i.e., *provid[ing] upward and downward movement of the upper member relative to the support surface during movement of the upper member forwardly and rearwardly in the fore-aft direction*). Ex.1003 ¶91. As discussed at sections [1(a)]-[1(b)], *supra*, Zwinkels describes a frame (*lower member*), a roller or rollers (*upper member*) and pendulum arms (*moveable interconnection*) interconnecting the roller or rollers to the frame. Ex.1003 ¶91.

Zwinkels further teaches that the pendulum arm(s) connecting the roller or rollers to the frame “provides an easy and effective solution for absorbing and attenuating horizontal movements by **converting these horizontal movements to vertical movements.**” Ex.1004 ¶[0024] (emphasis added). This simultaneous horizontal movement (*movement of the upper member forwardly and rearwardly in the fore-aft direction*) and vertical movement (*upward and downward movement of the upper member*) is depicted in the below annotated versions of both Figures 5 and

6, with the horizontal movement labeled “ ΔH ” in purple and the simultaneous vertical movement labeled “ ΔV ” in orange. Ex.1003 ¶¶92-93.



Ex.1004 at Figs. 5-6 (annotated).

The horizontal displacement (labeled “ ΔH ” in purple) is apparent between the left and right images in each of Figures 5 and 6. Ex.1003 ¶¶93-96. The simultaneous vertical displacement (labeled “ ΔV ” in orange) is shown by the arrows, which illustrate that as the roller(s) swing to the right in a horizontal direction, they simultaneously move upward in the vertical direction as well. The Zwinkels specification reaffirms this disclosure. With regard to Figure 5, Zwinkels states:

FIG. 5 shows the embodiment in which there are two rollers 4 for the bicycle back wheel, and that at their extremities the rollers 4 are directly or indirectly suspended by double pendulum arms 6 arranged in the form of a parallelogram construction, wherein the said pendulum arms 6 are provided with a connecting link 7 to secure said arms 6 perform a *concerted swinging back and forth*. Again the figure at the left of FIG. 5 shows the pendulum arms 6 in a resting position, whereas *the figure on the right shows the pendulum arms 6 after they have [moved] due to the connecting link 7 concertedly mov[ing] to the right due to a force FH, causing that the rollers 4 have moved vertically upwards*. At this position the rollers 4 undergo the force of gravity FV which counteracts the force FH due to which the rollers 4 have moved to the right.

Ex.1004 ¶[0034]. Similarly, for Figure 6, Zwinkels discloses:

FIG. 6 shows schematically the embodiment of the suspension of a roll or rollers 4 of the apparatus 1 of the invention in which at their extremities the roll or rollers for the bicycle back wheel 5 are directly or indirectly supported by at least one pendulum arm 6 that has a fixed pivoting point 7 on the frame 3. The figure at the left of FIG. 6 shows the pendulum arm 6 in a resting position, whereas *the figure on the right shows the pendulum arm 6 after it has moved to the right due to a force FH, causing that the roll 4 has moved vertically upwards*. At this position the roll 4 undergoes the force of gravity FV which counteracts the force FH due to which the roll 4 has moved to the right.

Ex.1004 ¶[0033] (emphasis added).

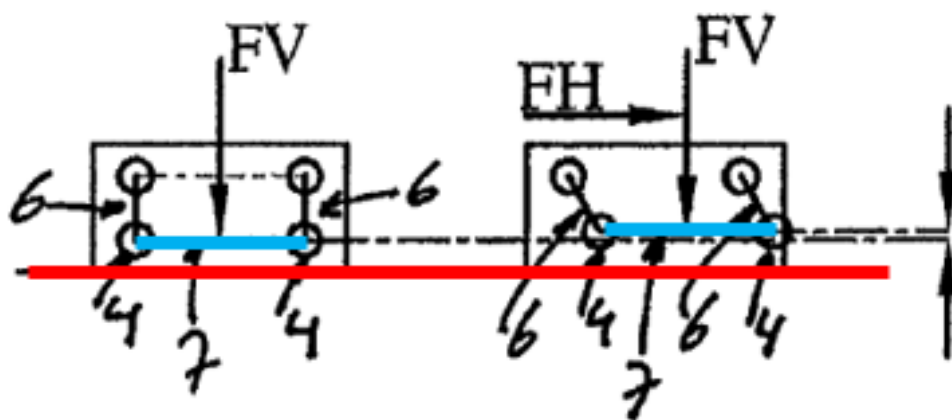
In addition to the horizontal movement to the right and the vertical movement upwards shown in Figures 5 and 6, a POSITA would have understood that the rollers would also move horizontally to the left and vertically downward as the rollers swing back to the left towards the center position, because Zwinkels discloses that the rollers and pendulum arms “swing[] back and forth.” Ex. 1004 at [0025], [0034], [0037], claim 3; Ex.1003 ¶96.

Thus, because Zwinkels discloses one or more pendulum arms with pivoting points (*movable interconnection*) that provide for the roll or rollers (*upper member*) to move vertically (*upward and downward movement of the upper member*) at the same time that they are moving horizontally (*during movement of the upper member forwardly and rearwardly in the fore-aft direction*), Zwinkels discloses this claim limitation. Ex.1003 ¶¶97-98.

[1(c)(ii)] wherein the upper member is oriented parallel to the support surface plane during movement of the upper member relative to the lower member in the fore-aft direction and during upward and downward movement of the upper member relative to the support surface.

Zwinkels discloses this limitation because it teaches two rollers connected by a connecting link (collectively, *upper member*) that is *oriented parallel* to the ground (*support surface plane*) during movement ... in the fore-aft direction and during upward and downward movement. Ex.1003 ¶99. Specifically, Zwinkels discloses that the *upper member* can be comprised of two rollers “suspended by double

pendulum arms 6 arranged in the form of a parallelogram construction” and further including “a connecting link 7” to provide for a “concerted swinging back and forth.” Ex.1004 ¶[0034]. For example, Figure 5 of Zwinkels shows that the plane formed by the two rollers 4 and connecting link 7 (collectively, *upper member*, shown in blue, below) remains parallel with the ground (*support surface*, shown in red, below) as the rollers and connecting link swing to the right and upward, i.e., during horizontal and upward movement. Ex.1003 ¶100; Ex.1004 at Fig. 5.



Ex.1004 at Fig. 5 (annotated).

Zwinkels thus discloses this limitation as claimed. Ex.1003¶¶101-102.

Accordingly, Zwinkels discloses *wherein the movable interconnection of the upper member with the lower member is further configured to provide upward and downward movement of the upper member relative to the support surface during movement of the upper member forwardly and rearwardly in the fore-aft direction relative to the lower member, and wherein the upper member is oriented parallel to*

the support surface plane during movement of the upper member relative to the lower member in the fore-aft direction and during upward and downward movement of the upper member relative to the support surface as claimed. Ex.1003 ¶103.

3. Claim 12

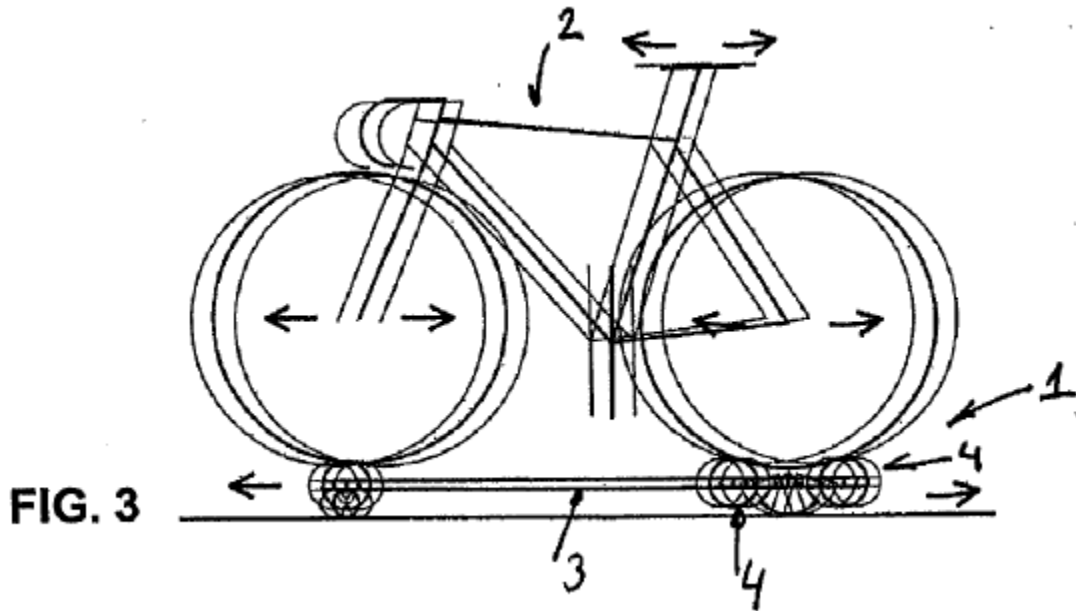
[12(pre)] An exercise arrangement, comprising:

To the extent the preamble is considered limiting, Zwinkels discloses this limitation. Ex.1003 ¶104. Zwinkels teaches a “[t]raining apparatus arranged for supporting a bicycle” Ex.1004 at Abstract. A POSITA would have understood a “training apparatus” supporting a bicycle to comprise an *exercise arrangement*. Ex.1003 ¶104. Accordingly, Zwinkels discloses this limitation. Ex.1003 ¶104.

[12(a)] a cycle device for enabling a user to apply input forces

Zwinkels discloses this limitation because it teaches a training apparatus arranged for supporting a bicycle (*cycle device*) that responds to accelerations and decelerations of a training cyclist (*enabling a user to apply input forces*). Ex.1004 ¶[0027] (“horizontal movements induced by the accelerations and decelerations of the training cyclist”), ¶[0033] (“force FH due to which the roll 4 has moved to the right”), ¶[0034] (“force FH due to which the rollers 4 have moved to the right”); Ex.1003 ¶105. Specifically, Zwinkels discloses, “[i]t is an objective of the invention to provide an alternative solution for allowing that relative horizontal movements caused by accelerations and decelerations of a training cyclist are possible.” Ex.1004

¶[0009]. Zwinkels also depicts a bicycle (*cycle device*) in use with the disclosed apparatus:



Ex.1004 at Fig. 3.

A POSITA would have understood a bicycle to constitute a *cycle device*. Ex.1003 ¶106. A POSITA would have further understood that a bicycle allows a user to *apply input forces* by pedaling and/or leaning. Ex.1003 ¶107. Thus, Zwinkels discloses a *cycle device for enabling a user to apply input forces* as claimed. Ex.1003 ¶107.

[12(b)] a support for the cycle device adapted to be positioned on a support surface that lies in a support surface plane, wherein the support comprises a lower member adapted for placement on the support surface, and an upper member interconnected with the lower member via a movable interconnection, wherein the upper member is configured to support the cycle device above the support surface, and wherein the movable interconnection of the upper member with the lower member is configured to enable the upper member to move forwardly and rearwardly in the fore-aft direction relative to the lower member in response to

fore-aft forces that are transferred to the upper member from the cycle device in response to operation of the cycle device;

Zwinkels discloses and also renders obvious this limitation for the reasons set forth above for limitations [1(pre)], [1(a)], and [1(b)]. Ex.1003 ¶108. As discussed for [1(pre)], Zwinkels' training apparatus constitutes a *support*.

Petitioner subdivides this limitation [12(b)] into the following sub-limitations [12(b)(i)], [12(b)(ii)], [12(b)(iii)], and [12(b)(iv)].

[12(b)(i)] a support for the cycle device adapted to be positioned on a support surface that lies in a support surface plane, wherein the support comprises a lower member adapted for placement on the support surface

Zwinkels discloses and also renders obvious this limitation for the reasons set forth above for limitations [1(pre)] and [1(a)]. Ex.1003 ¶109. Because Zwinkels discloses and also renders obvious that the frame (*lower member*) of Zwinkel's training apparatus (*support*) can lie flush with the floor (*support surface*), as explained for [1(a)], to the extent this is required, Zwinkels also discloses and renders obvious that Zwinkels' training apparatus (*support*), of which the frame is a part, can *lie in a support surface plane* for the same reasons. See [1(a)], *supra*.

[12(b)(ii)] an upper member interconnected with the lower member via a movable interconnection,

Zwinkels discloses this limitation for the reasons set forth above for limitations [1(b)(i)]-[1(b)(ii)]. Ex.1003 ¶110.

[12(b)(iii)] wherein the upper member is configured to support the cycle device above the support surface

Zwinkels discloses this limitation for the reasons set forth above for limitation

[1(b)(iii)]. Ex.1003 ¶111.

[12(b)(iv)] wherein the movable interconnection of the upper member with the lower member is configured to enable the upper member to move forwardly and rearwardly in the fore-aft direction relative to the lower member in response to fore-aft forces that are transferred to the upper member from the cycle device in response to operation of the cycle device

Zwinkels discloses this limitation for the reasons set forth above for limitation

[1(b)(iv)]. Ex.1003 ¶112.

[12(c)] wherein the movable interconnection of the upper member with the lower member is further configured to provide upward and downward movement of the upper member relative to the support surface during movement of the upper member forwardly and rearwardly in the fore-aft direction relative to the lower member, and wherein the upper member is oriented parallel to the support surface plane during movement of the upper member relative to the lower member in the fore-aft direction and during upward and downward movement of the upper member relative to the support surface.

Zwinkels discloses this limitation for the reasons set forth above for limitation

[1(c)]. Ex.1003 ¶113.

Petitioner subdivides this limitation [12(c)] into the following sub-limitations

[12(c)(i)] and [12(c)(ii)].

[12(c)(i)] wherein the movable interconnection of the upper member with the lower member is further configured to provide upward and downward movement of the upper member relative to the support surface during movement of the upper member forwardly and rearwardly in the fore-aft direction relative to the lower member

Zwinkels discloses this limitation for the reasons set forth above for limitation [1(c)(i)]. Ex.1003 ¶114.

[12(c)(ii)] wherein the upper member is oriented parallel to the support surface plane during movement of the upper member relative to the lower member in the fore-aft direction and during upward and downward movement of the upper member relative to the support surface.

Zwinkels discloses this limitation for the reasons set forth above for limitation [1(c)(ii)]. Ex.1003 ¶115.

4. Claim 25

[25(pre)] A support for an item of exercise equipment that experiences forces in a fore-aft direction during use, comprising:

Zwinkels discloses this limitation for the reasons set forth above for limitation [1(pre)]. Ex.1003 ¶116.

[25(a)] a lower member adapted for placement on a support surface;

Zwinkels discloses this limitation for the reasons set forth above for limitation [1(a)]. Ex.1003 ¶117.

[25(b)] an upper member interconnected with the lower member, wherein the upper member is configured to support the item of exercise equipment above the support surface, and wherein the interconnection of the upper member with the lower member is configured to enable the upper member to move forwardly and rearwardly in the fore-aft direction relative to the lower member between a forward position and a rearward position, in response to fore-aft forces that are transferred to the upper member from the item of exercise equipment in response to use of the item of exercise equipment;

Zwinkels discloses this limitation for the reasons set forth above for limitation [1(b)] (including the reasons set forth above for sub-limitations [1(b)(i)], [1(b)(ii)], [1(b)(iii)], and [1(b)(iv)]). Ex.1003 ¶ 118.

[25(c)] wherein the movable interconnection of the upper member with the lower member is further configured to provide upward and downward movement of the upper member relative to the support surface during movement of the upper member forwardly and rearwardly in the fore-aft direction relative to the lower member, and wherein the forward and rearward positions of the upper member relative to the lower member are offset from each other in the fore-aft direction.

Zwinkels discloses this limitation for the reasons set forth above for limitation [1(c)(i)] and for the reasons set forth below for [25(c)(ii)]. Ex.1003 ¶ 119.

Petitioner subdivides this limitation [25(c)] into sub-limitations [25(c)(i)] and [25(c)(ii)].

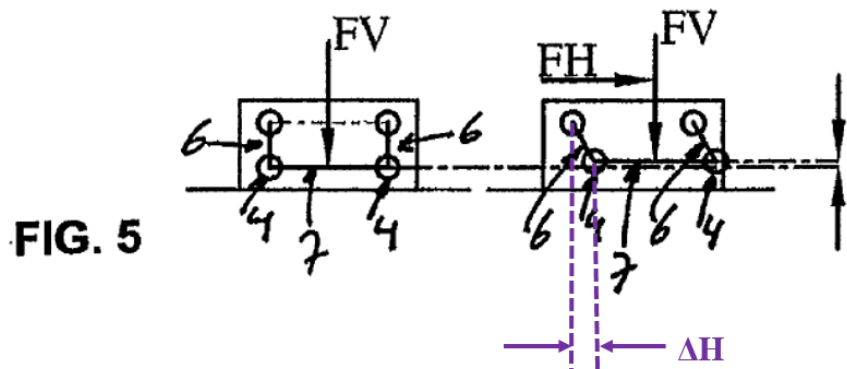
[25(c)(i)] wherein the movable interconnection of the upper member with the lower member is further configured to provide upward and downward movement of the upper member relative to the support surface during movement of the upper member forwardly and rearwardly in the fore-aft direction relative to the lower member

Zwinkels discloses this limitation for the reasons set forth above for limitation [1(c)(i)]. Ex.1003 ¶120

[25(c)(ii)] wherein the forward and rearward positions of the upper member relative to the lower member are offset from each other in the fore-aft direction.

Zwinkels discloses this limitation because it teaches a roller or rollers that moves horizontally by swinging back and forth. Ex.1003 ¶121. For example, “the

figure at the left of FIG. 5 shows the pendulum arms 6 in a resting position, whereas the figure on the right shows the pendulum arms 6 after they have [moved] due to the connecting link 7 concertedly moved to the right due to a force FH” Ex.1004 ¶[0034].



Ex.1004 at Fig. 5 (annotated).

A POSITA would have understood that Figure 5 depicts a *forward position of the upper member* on the right, where the rollers (*upper member*) have swung forward. Ex.1003 ¶¶122-123. Further, a POSITA would have understood that Zwinkels discloses at least two *rearward positions of the upper member* relative to this forward position. Ex.1003 ¶124.

First, a POSITA would have understood that Figure 5 discloses a *rearward position of the upper member* relative to the forward position, on the left side of Figure 5, where the rollers have swung back to the center. Ex.1003 ¶¶124-125. The *forward position* shown on the right side of Figure 5 and the *rearward position*

shown on the left side of Figure 5 are offset horizontally (by a distance annotated “ ΔH ” in purple above) from each other (*offset from each other in the fore-aft direction*). Ex.1003 ¶¶124-125.

Second, Zwinkels discloses that the pendulum arms shown in Figure 5 are capable of allowing the rollers 4 and connecting link 7 to “*swing[] back and forth.*” Ex.1004 ¶[0034] (emphasis added). Thus, a POSITA would have understood that the rollers (*upper member*) of Zwinkels are also capable of swinging “back” to a further rearward position to the left of the center position (like a pendulum) from forces applied by the training cyclist, such as if the cyclist were to accelerate, even though Figure 5 does not expressly depict such a further rearward position to the left of the center position. Ex.1003 ¶¶124-125. In this way, this further rearward position to the left of center constitutes an additional *rearward position* disclosed by Zwinkels, in addition to the first *rearward position* discussed above. Ex.1003 ¶¶124-125. This further rearward position to the left of center would be understood to be horizontally offset from Zwinkels’ forward position because it is the result of swinging “back” from the forward position (*offset from each other in the fore-aft direction*). Ex.1003 ¶¶124-125.

Thus, Zwinkels discloses this limitation as claimed. Ex.1003 ¶126.

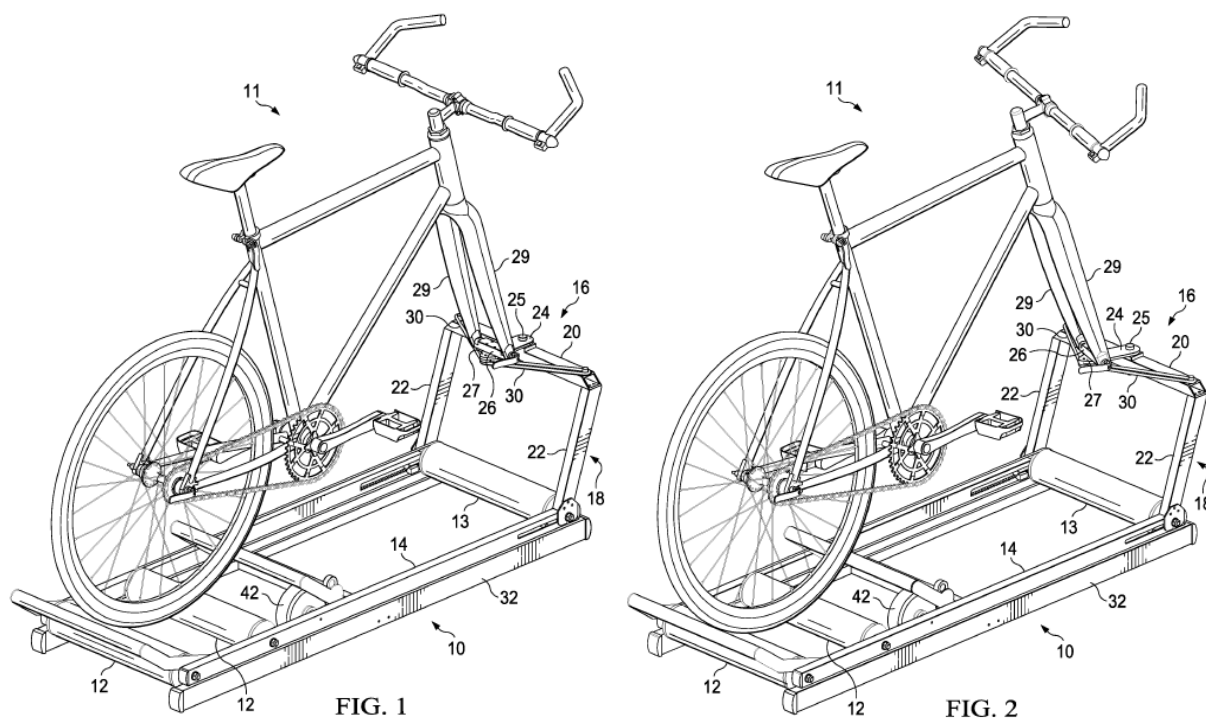
D. Ground 3: Claims 1, 12, and 25-26 are obvious under 35 U.S.C. § 103 over Zwinkels in view of Papadopoulos.

1. Summary of Zwinkels

See Sec. X.C.1; Ex.1003 ¶¶44-48.

2. Summary of Papadopoulos

Papadopoulos also relates to “the field of bicycle trainers that accept a bicycle.” Ex.1005 at 1:4-5; Ex.1006 at 1:4-14. Papadopoulos is entitled “Bicycle Trainer Permitting Steering and Tilting Motion” (Ex.1005 at Code (54)) and teaches an apparatus capable of generating an off-vertical tilt from side to side as a cyclist applies forces such as from steering or pedaling to more realistically simulate the natural motion of a bicycle: “As fork support 26 and the attached fork [of the bicycle] rotate off of center, the rotated bicycle fork generates an off-vertical tilt to the bicycle frame. Inversely, pedaling forces create a tilt to the bike frame that will result in a steering action. Thus, the rider is able to modulate tilt by controlling the steering. Additionally, the resistance of rubber bands 30 to the rotation of fork support 26 play a role in stabilizing the bicycle on assembly 10 and preventing excessive tilt, while also, to some degree, mimicking the resistance to steering encountered by friction between the bicycle wheel and the road surface.” Ex.1005 at 3:19-25, Figs. 1-3; Ex.1006 at 2:17-21.



Ex.1005 at Figs. 1-2; *see also* Ex. 1006 at Fig. 1. For example, Figure 3 of Papadopoulos depicts the bicycle tilting to the left side as the cyclist turns the handlebars to the right, rotating the bicycle fork 29 and attached fork support 26 to the right:

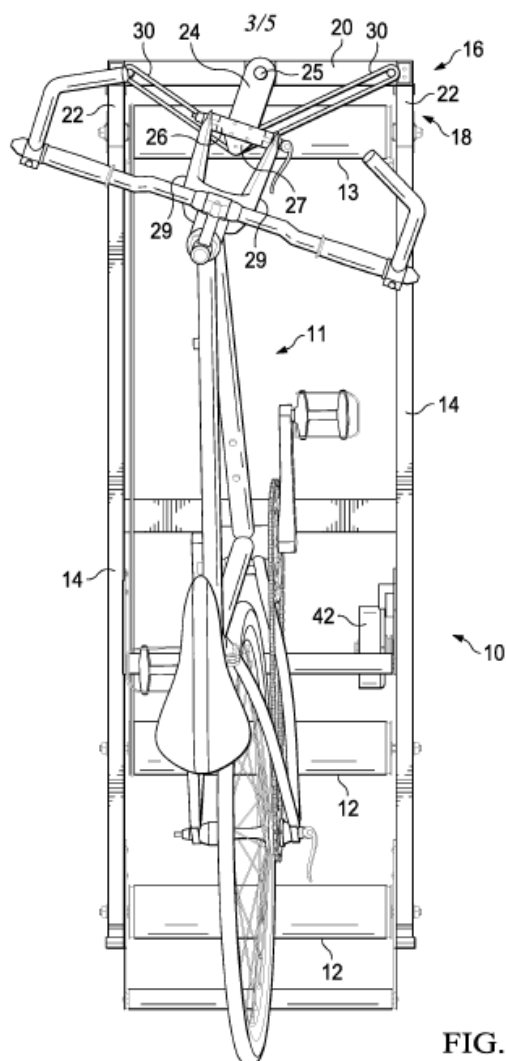
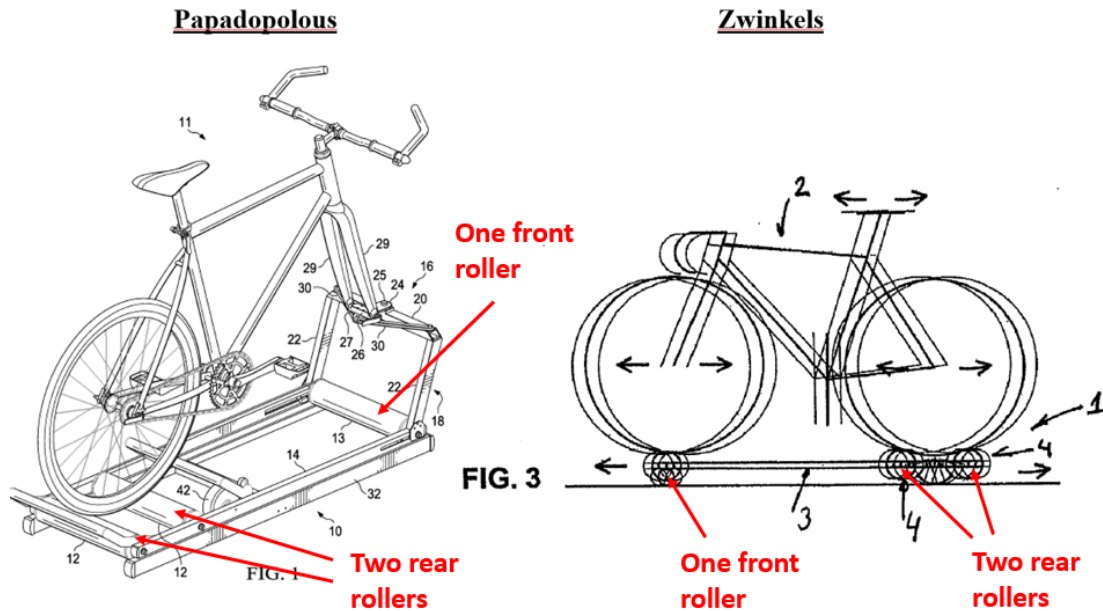


FIG. 3

Ex.1005 at Fig. 3.

Papadopoulos further discloses that its configuration may be applied to retrofit an existing bicycle roller assembly. *See* Ex.1005 at 3:26-28 (“This configuration may be originated by retrofitting an existing bicycle rollers assembly, by providing a front bicycle fork supporting assembly 16 that bolts onto the frame 14 at the location of the front roller 13.”); Ex.1006 at 2:22-24 (same). As shown by the side-by-side comparison below, Papadopoulos depicts its apparatus being retrofit onto a

double-rear-roller bicycle roller assembly, similar to Zwinkels' double-rear-roller bicycle roller assembly:



Ex.1005 at Fig. 1 (annotated); Ex.1004 at Fig. 3 (annotated); *see also* Ex.1006 at Fig. 1. While Zwinkels depicts a bicycle front wheel supported by a roller, Zwinkels teaches that “this is not essential.” Ex.1004, ¶[0021]. Papadopoulos discloses that its assembly can be retrofitted to an existing bicycle roller assembly having a front roller (like Zwinkels) by removing the bicycle’s front wheel and attaching Papadopoulos’s assembly “directly above the front roller” of the existing bicycle roller assembly. Ex.1005 at 2:1-9.

Papadopoulos discloses that its rollers are mounted to a supporting frame 14 that lies flush with the ground. Ex.1005 at 3:9-12, Fig. 1 (depicting frame 14 flush

with the ground); Ex.1006 at Fig. 1 (same). Like Zwinkels, Papadopoulos allows for horizontal movement during use of the trainer. Specifically, Papadopoulos discloses that the frame 14 can be “an inner frame, which is set into an outer or bottom frame 32 in a manner that permits resisted movement between frame 14 and frame 32, to more effectively mimic the feel of actual bicycling.” Ex.1005 at 3:29-4:2; Ex.1006 at 2:24-26. The assembly “can be set into an outer frame, so that it can move slightly forward and backward.” Ex.1005 at 4:22-24, claim 3; Ex. 1006 at claim 2. Papadopoulos discloses that this horizontal movement forward and backward can be achieved by the frames 14 and 32 being “separated by wheels or rollers to permit movement of top frame 14.” Ex.1005 at 4:5-7, claim 4; Ex.1006 at 3:7-8, claim 3.

Papadopoulos describes that the “natural side-to-side motion” permitted by its assembly as a user pedals provides “a more realistic feel to the rider” (Ex.1005 at 4:17-18) as compared to prior devices that had a “lack of sideways motion” and that “provide[d] an unsatisfactory feel for the rider” because the rider did “not move in the same way” as “on an actual bicycle ride.” Ex.1005 at 1:14-17; *see also* Ex.1006 at 1:11-14, 3:5-7.

Papadopoulos was not cited during prosecution of the '394 patent. Papadopoulos is a different reference that does not have any family relationship to the Papadopoulos '575 reference that was cited and substantively applied by the

Examiner in rejections during prosecution of the challenged '394 patent. *Compare* Ex.1005 *with* Ex.1011. Notably, Papadopoulos '575 only teaches horizontal/fore-aft movement and not any side-to-side movement of its bike trainer like Papadopoulos does. *See* Ex.1011 at 2:17-36, 3:42-47; *see generally* Ex.1011.

3. Zwinkels and Papadopoulos are Analogous Art

Both Zwinkels and Papadopoulos, like the '394 patent, relate to movable supports for an item of exercise equipment, specifically a bicycle, and each of the three relate to bicycle trainers. Ex.1004 at Abstract (“Training apparatus arranged for supporting a bicycle”); *id.* at [0006], [0020], [0031]; Ex.1005 at 1:4-5 (“The present invention is in the field of bicycle trainers that accept a bicycle and wherein a user rides the bicycle on the bicycle trainer and can move the handlebars.”); Ex.1001 at 9:7-11 (“In this embodiment, the movable exercise equipment support 100 is separate from but adapted to support, an item of exercise equipment. In the illustrated embodiment, the item of exercise equipment is in the form of a bicycle B engaged with a bicycle trainer T.”). Thus, each of Zwinkels and Papadopoulos is from the same field of endeavor as the '394 patent. Ex.1003 ¶53.

Further, Zwinkels and Papadopoulos are both directed to providing more realistic movement that mimics an outdoor environment when using an item of exercise equipment in an indoor environment, like the '394 patent. Ex.1004 at [0008] (“With this construction it is possible that a training cyclist is encouraged to

execute a natural movement during his training exercises, and to adopt a comfortable ride which better duplicates the natural feel of outdoor cycling.”); Ex.1005 at 4:17-18 (“Assemblies 10 and 110, each has a more realistic feel to the rider, as the natural side-to-side motion of the handlebars, imparted by peddling, is resisted by the rider.”); Ex.1001 at 1:38-41 (“It is an object of the present invention to enable a user to more realistically experience movement that occurs in an outdoor environment when using an item of exercise equipment in an indoor environment.”). Thus, Zwinkels and Papadopoulos are also each reasonably pertinent to the problem faced by the inventors of the ’394 patent. Therefore, Zwinkels and Papadopoulos are analogous art to the ’394 patent. Ex.1003 ¶53.

4. Claims 1, 12, and 25

To the extent a disclaimer occurred during prosecution of the ’394 patent requiring side-to-side or tilting movement, Zwinkels in view of Papadopoulos renders such a requirement obvious.

As disclosed above for Ground 1 and Ground 2, claims 1, 12, and 25 are anticipated by Zwinkels and also rendered obvious by Zwinkels. Petitioner incorporates by reference that analysis above in this Ground. *See* Sec. IX.C, *supra*. Further, to the extent a disclaimer occurred during prosecution of the ’394 patent requiring side-to-side or tilting movement, then Zwinkels in view of Papadopoulos renders such a requirement obvious. Ex.1003 ¶¶127-131.

Specifically, as discussed above in Section V, during prosecution of the '394 patent, Applicant stated, “[t]he equipment support of the present invention provides controlled fore-aft movement of the item of exercise equipment during use, *as well as controlled side-to-side or tilting movement of the item of exercise equipment.*” Ex.1002 at 241. Claims 1, 12, and 25 do not expressly recite any limitation requiring side-to-side or tilting movement. Further, as discussed above, after these claims were amended to recite “upward and downward movement,” Applicant distinguished the Lim reference because it only taught side-to-side movement, not upward and downward movement. *See* Sec. V (citing Ex.1002 at 281), *supra*. Thus these claims’ recitation of “upward and downward movement” does not require side-to-side movement. As also discussed above, at the time Applicant made the argument suggesting “[t]he equipment support of the present invention provides . . . controlled side-to-side or tilting movement of the item of exercise equipment,” (Ex.1002 at 241) only certain dependent claims had been amended to recite limitations pertaining to “pivot[ng] relative to the base about a longitudinal axis that extends in the fore-aft direction” (i.e., side-to-side movement). *See* Sec. V (citing Ex. 1002 at 233-240) (claims 6, 16, and 31). Further, in her statement of reasons for allowance, the examiner did not appear to accept that the independent claims required side-to-side movement and instead only referenced these claims’ recited upward-downward movement during forward-rearward movement. Ex.1002 at 300-302.

Because only certain dependent claims, and not independent claims 1, 12, or 25, were amended to recite side-to-side movement, because Applicant distinguished Lim’s side-to-side movement, and because the examiner did not accept any alleged side-to-side movement in her reasons for allowance, Applicant’s statement regarding side-to-side movement is not a clear and unmistakable statement that all independent claims require side-to-side movement and is, instead, amenable to the reasonable alternative interpretation that it applies to only those claims that were amended to recite side-to-side movement. Thus, no prosecution disclaimer should be found to have occurred. *See, e.g., Massachusetts Inst. of Tech. v. Shire Pharms., Inc.*, 839 F.3d 1111, 1119 (Fed. Cir. 2016) (“[I]n order for prosecution disclaimer to attach, the disavowal must be both clear and unmistakable. . . . Where the alleged disavowal is ambiguous, or even amenable to multiple reasonable interpretations, we have declined to find prosecution disclaimer.”) (internal citations omitted).

Nonetheless, to the extent this statement is found to constitute a disclaimer of claim scope so as to require the claims to include the limitation of side-to-side or tilting movement, then claims 1, 12, and 25 would have been obvious over Zwinkels in view of Papadopoulos. Ex.1003 ¶¶127-131.

Papadopoulos teaches that, “[a]s fork support 26 and the attached fork rotate off of center, the rotated bicycle fork *generates an off-vertical tilt to the bicycle frame*. Inversely, pedaling force *creates a tilt to the bike frame* that will result in a

steering action. Thus, the rider is *able to modulate tilt* by controlling the steering. Additionally, the resistance of rubber bands 30 to the rotation of fork support 26 play a role in stabilizing the bicycle on assembly 10 and *preventing excessive tilt*, while also, to some degree, mimicking the resistance to steering encountered by friction between the bicycle wheel and the road surface.” Ex.1005 at 3:19-25, Fig. 3 (depicting tilting to the left), Code (54) (“Title: Bicycle Trainer Permitting Steering *and Tilting Motion*”), 4:17-18 (“Assemblies 10 and 110, each has a more realistic feel to the rider, as the *natural side-to-side motion* of the handlebars, imparted by peddling, is resisted by the rider.”); Ex.1006 at 2:17-21, 3:5-7. Thus, Papadopoulos discloses an exercise equipment support that provides *controlled side-to-side or tilting movement of the item of exercise equipment*. Ex.1003 ¶¶129-131.

Reasons to combine Zwinkels with Papadopoulos

A POSITA would have been motivated to combine Papadopoulos’s apparatus for imparting side-to-side/tilting movement for a roller bike trainer with Zwinkels’ roller bike trainer for several reasons. Ex.1003 ¶¶53-61.

First, Papadopoulos contemplates that its apparatus may be retrofitted to an existing bicycle roller assembly by simply removing the front wheel of the bicycle and connecting the bicycle fork to a bicycle fork supporting assembly that attaches to the bicycle roller assembly at the location of the front roller: “This configuration may be originated by retrofitting an existing bicycle rollers assembly, by providing

a front bicycle fork supporting assembly 16 that bolts onto the frame 14 at the location of the front roller 13. Ex.1005 at 3:26-28, 2:1-9; Ex.1006 at 2:22-24. As discussed and shown above, Zwinkels discloses a bicycle trainer having a front roller and two rear rollers, just like the roller bicycle trainer depicted in Papadopoulos that Papadopoulos's apparatus for allowing tilting/side-to-side movement is retrofitted onto. *See* Sec. IX.D.2, *supra*. Thus, Papadopoulos is specifically designed to be combined with a roller bike trainer just like Zwinkels having two rear rollers and one front roller. Ex.1003 ¶¶54-61. This would have motivated a POSITA to combine Papadopoulos's apparatus for imparting side-to-side/tilting movement to a roller bike trainer with Zwinkels' roller bike trainer. Ex.1003 ¶¶54-55.

Second, like Zwinkels, Papadopoulos also provides for horizontal/forward-backward movement, making it fully compatible with Zwinkels. Ex.1003 ¶56. Papadopoulos teaches that "In one preferred embodiment, frame 14 is an inner frame, which is set into an outer or bottom frame 32 in a manner that permits resisted movement between frame 14 and frame 32, to more effectively mimic the feel of actual bicycling." Ex.1005 at 3:29-4:2, 4:5-7, 4:22-24 (describing that its assembly "can be set into an outer frame, so that it can move slightly forward and backward"); Ex.1006 at 2:24-26, 3:7-8; *see also* Ex.1005 at claim 3 ("said top assembly is supported by a fore and aft movement permitting bottom assembly"), claim 4 ("a set of base rollers that permits said top assembly to move back and forth on said bottom

frame”); Ex.1006 at Claims 2-3 (same). Thus, given that Papadopoulos already teaches that a tilting/side-to-side motion capability can already be combined with a forward-backward motion capability in a bike trainer, a POSITA would have understood that Papadopoulos’s apparatus would have been compatible with Zwinkels’ trainer and would have been motivated to combine Papadopoulos’s tilting/side-to-side motion capability with Zwinkels’ existing forward-backward motion capability. Ex.1003 ¶¶54-61.

Third, Zwinkels has a stated design goal of creating trainers to provide “natural movement” and “a comfortable ride which better duplicates the natural feel of outdoor cycling.” *See* Ex.1004 ¶[0008]. Papadopoulos is similarly directed towards providing “a more realistic feel to the rider” by providing a “natural side-to-side motion” and seeks to overcome the problem of prior devices that “provide an unsatisfactory feel for the rider” that is, in part, based on “the lack of sideways motion permitted by these devices, so that the rider does not move in the same way as he does on an actual bicycle ride.” Ex.1005 at 4:17-21, 1:14-17; Ex.1006 at 3:5-7, 1:11-14. Thus, because Papadopoulos is directed to the same goal as Zwinkels of providing natural movement of the bicycle that better replicates an actual outdoor bicycle ride, a POSITA would have appreciated that combining Papadopoulos’s apparatus for imparting side-to-side movement to a roller bicycle trainer with Zwinkels’s roller bicycle trainer that provides for forward-backward and upward-

downward movement would have furthered this goal of Zwinkels and enhanced Zwinkels' ability to provide a more realistic feel to the rider. Ex.1003 ¶57. Thus, a POSITA would have been motivated to make this combination to further enhance the realistic feel of Zwinkels's trainer to make it better simulate outdoor cycling. Ex.1003 ¶57.

Fourth, Zwinkels acknowledges that bike trainers having side-to-side movement were already known in the art, but criticizes one such bike trainer for its lack of horizontal/forward-backward motion such as that taught by Zwinkels. Ex.1004 ¶[0023]. But Zwinkels does not disparage including side-to-side or tilting movement in a trainer. Ex.1003 ¶58. Thus, Zwinkels contemplates trainers having side-to-side movement so long as they also include horizontal/forward-backward, which the combined Zwinkels-Papadopoulos trainer would have. Ex.1003 ¶58.

Fifth, a POSITA would have appreciated that retrofitting Papadopoulos's apparatus for imparting side-to-side movement for a roller bike trainer onto Zwinkels' roller bike trainer could be accomplished in a manner that would not negatively impact the simultaneous horizontal and vertical movement of Zwinkels. Ex.1003 ¶59. Papadopoulos teaches that its "retrofit assembly" can be "attached to the bicycle rollers assembly, directly above the front roller" (Ex.1005 at 2:8-9, 7:15-16 (claim 12)), which would have motivated a POSITA to attach Papadopoulos's fork supporting assembly 16 to a location on the existing bicycle roller assembly of

Zwinkels such that the fork supporting assembly would be above Zwinkels' front roller. Ex.1003 ¶59. When considering the combined teachings of Zwinkels and Papadopoulos, a POSITA would have been motivated to achieve this positioning above Zwinkels' front roller by attaching the side supports 22 of Papadopoulos's fork supporting assembly 16 to Zwinkels' pendulum arms 6 at the location where those arms connect to the sides of Zwinkels's front roller (i.e., with one of each of the side supports 22 attached on each side of the front roller). Ex.1003 ¶59. A POSITA would have been motivated by Zwinkels and Papadopoulos to connect Papadopoulos's assembly 16 to Zwinkels' trainer in this manner because a POSITA would have appreciated that doing so would have allowed the assembly 16 to be supported by Zwinkels' frame (as desired by Papadopoulos) by being attached to pendulum arms suspended from the frame, while at the same time allowing the front of the bicycle and assembly 16 to move forward and backward and upward and downward with Zwinkels's front roller (as desired by Zwinkels), thereby preserving the combined forward-backward and upward-downward motion taught by Zwinkels. Ex.1003 ¶59. A POSITA would have appreciated that such movement would be preserved because Zwinkels teaches that its front roller may be designed to provide the same forward-backward and upward-downward motion as that described for its back wheel rollers using the same suspension design as that used for the back wheel rollers. Ex.1004 at ¶[0037] ("The suspension of the roll 4 that supports the

frontwheel 10 is accordingly implemented in the manner as explained with reference to FIGS. 4-7.”), Fig. 8; Ex. 1003 ¶ 59. Thus, a POSITA would have appreciated that this combination would not have negatively affected Zwinkels’ simultaneous horizontal and vertical movement. Ex.1003 ¶59.

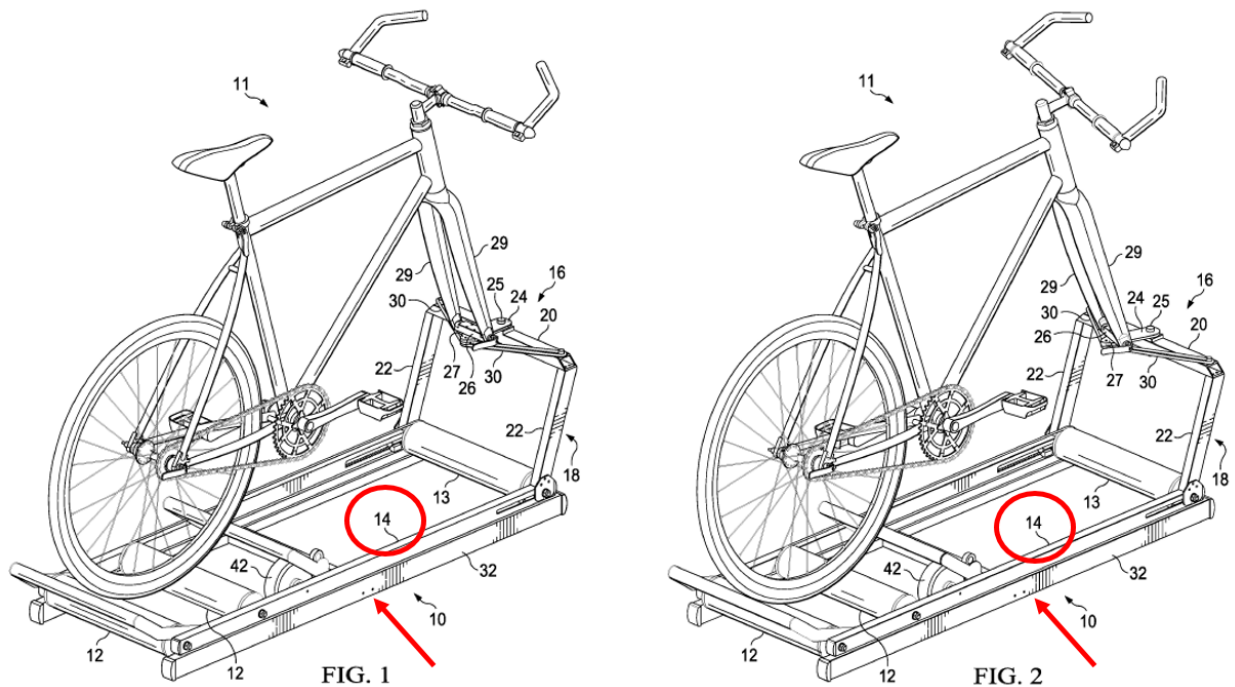
Finally, a POSITA would have had a reasonable expectation of success in combining Papadopoulos’s apparatus with Zwinkels’s trainer because, as discussed, Papadopoulos’s apparatus is specifically designed to retrofit onto a roller-based trainer just like Zwinkels and such a combination would have been a minor modification given that it would have only required the removal of the front wheel of the bicycle, the attachment of the bicycle fork to Papadopoulos’s fork supporting assembly 16, and the attachment of Papadopoulos’s fork supporting assembly 16 onto Zwinkels’s trainer such that it is positioned directly above Zwinkels’ front roller, as specifically taught by Papadopoulos. Ex.1003 ¶60; Ex.1005 at 2:1-9, 3:26-29; Ex.1006 at 2:22-24.

Accordingly, to the extent Applicant’s statement during prosecution constitutes a disclaimer of claim scope such that a limitation must be read into the independent claims requiring *controlled side-to-side or tilting movement of the item of exercise equipment*, claims 1, 12, and 25 of the ’394 patent are rendered obvious over Zwinkels in view of Papadopoulos. Ex.1003 ¶¶54-61, 127-131.

To the extent the limitation of “a lower member adapted for placement on a support surface that lies in a support surface plane” of claim 1 or the limitation of “a support for the cycle device adapted to be positioned on a support surface that lies in a support surface plane” of claim 12 requires the lower member to lie in a support surface plane, Zwinkels in view of Papadopoulos renders such a requirement obvious.

As discussed above, Zwinkels both discloses and renders obvious any requirement of claims 1 and 12 that the lower member must “lie[] in a support surface plane.” *See* Sec. IX.C.2 at [1(a)]; Sec. IX.C.2 at [12(b)(i)]. In addition, to the extent claims 1 and 12 include such a requirement, Zwinkels in view of Papadopoulos also renders obvious such a requirement. Ex.1003 ¶133.

Papadopoulos discloses that its rollers are mounted to a supporting frame 14 (Ex.1005 at 3:9-12, Ex.1006 at 2:9-12) and Papadopoulos discloses that this frame 14 lies flush with the ground as shown by the annotated versions of Figures 1 and 2 below. Ex.1005 at Figs. 1-2; Ex.1006 at Fig. 1.



Ex.1005 at Figs. 1-2 (annotated); *see also* Ex.1006 at Fig. 1.

To the extent Zwinkels is found to not expressly disclose that its frame 3 (*lower member*) can lie flush with the ground, a POSITA would have been motivated to combine Papadopoulos's teaching of a bottom frame lying flush with the ground with Zwinkels so as to remove any feet or other supports from Zwinkels' frame 3 such that it lies flush with the ground. Ex.1003 ¶135. Zwinkels' discloses its frame lying nearly flush with the ground in certain embodiments. *See, e.g.*, Ex.1004 at Fig. 8. It would have required only a minor modification that would have been well within the level of ordinary skill to lower Zwinkels' frame in such embodiments to lie flush with the ground, because it would have involved only a slight lowering of the frame achieved by: i) removing any feet slightly suspending the frame above the

ground, and 2) ensuring that Zwinkels' rollers 4 are suspended high enough relative to the bottom of the frame such that their vertical movement does not cause the rollers 4 to hit the ground during use. Ex.1003 ¶136. Thus, a POSITA would have been motivated to make such a modification because of the ease with which it could have been made. Ex.1003 ¶136. A POSITA also would have been motivated to make this minor modification because a POSITA would have appreciated that such a design would have improved the stability of Zwinkels' training apparatus by having a larger surface area of its frame in contact with the ground. Ex.1003 ¶136. A POSITA would have further been motivated to make this modification by Figures 4-7 of Zwinkels that, at a bare minimum, would have suggested to a POSITA to place Zwinkels' frame 3 flush with the ground, to the extent those figures are not found to expressly disclose the same. Ex.1003 ¶136. Further, because this would have been a minor modification that would not have altered the functionality or operation of the remainder of Zwinkels' training apparatus (such as its rollers), a POSITA would have had a reasonable expectation of success in making such a modification. Ex.1003 ¶¶136-137. Zwinkels in view of Papadopoulos, therefore, also renders obvious any requirement of claims 1 and 12 requiring the lower member to lie flush with the ground. Ex.1003 ¶138.

5. Claim 26

[26] The support of claim 25, wherein the movable interconnection of the upper member comprises a roller and track arrangement interposed between the upper member and the lower member.

Zwinkels in combination with Papadopoulos renders obvious this limitation.

Ex.1003 ¶¶139-149.

First, Zwinkels discloses *[t]he support of claim 25* for the reasons set forth above at limitations [25(pre)]-[25(c)]. Ex.1003 ¶139.

Second, Papadopoulos discloses and/or renders obvious *wherein the movable interconnection of the upper member comprises a roller and track arrangement interposed between the upper member and the lower member*. Ex.1003 ¶140. For example, Papadopoulos discloses that it may use an inner/top frame that is separated from a bottom frame by “wheels or rollers” to permit fore-aft movement of the top frame 14 relative to the bottom frame: “In one preferred embodiment, ***frame 14 is an inner frame which is set into an outer or bottom frame 32 in a manner that permits resisted movement between frame 14 and frame 32, to more effectively mimic the feel of actually bicycling*** Frames 14 and 32 are made of aluminum and ***separated by wheels or rollers to permit movement of top frame 14***. The motion is gently resisted by a bungee or other form of spring (not shown).” Ex.1005 at 3:29-4:7 (emphasis added), 4:22-24 (describing that the assembly “can be set into an outer

frame, so that it can move slightly forward and backward”), claims 3-4; Ex.1006 at 2:24-26, 3:7-9, claims 2-3.

Moreover, Papadopoulos discloses in its claims “[t]he bicycle rollers assembly of claim 1, wherein said rear pair of rollers and said front bicycle fork support element are joined together in spaced relationship to form a top assembly, and *wherein said top assembly is supported by a fore and aft movement permitting bottom assembly*” and “[t]he bicycle rollers assembly of claim 1, wherein said fore and aft movement permitting bottom assembly includes *a bottom frame, which supports a set of base rollers that permits said top assembly to move back and forth on said bottom frame.*” Ex.1005 at Claims 3-4 (emphasis added); Ex.1006 at Claims 2-3 (emphasis added).

A POSITA would have been motivated to combine Zwinkels’ rollers connected via the connecting link (*upper member*) and pendulum arms having a pivoting point (*movable interconnection*) by attaching them to Papadopoulos’s top frame 14 that can move relative to its bottom frame 32 via “wheels or rollers” separating the two to arrive at a *movable interconnection of the upper member compris[ing] a roller and track arrangement interposed between the upper member and lower member*. Ex.1003 ¶¶141-142. A POSITA would have understood or at least found obvious that Papadopoulos’s wheels or rollers separating the top frame and bottom frame and allowing for fore-aft movement would have been set in a *track*

arrangement to prevent the wheels or rollers from becoming misaligned during movement. Ex.1003 ¶¶141-143. Indeed, without such a track arrangement, the frames would have had the potential to slide off of each other and out of alignment, inhibiting smooth fore-aft movement and potentially creating an unsafe condition for the rider. Ex.1003 ¶143. As such, a POSITA would have found it obvious to use a *track arrangement* for Papadopoulos's wheels or rollers in the Zwinkels-Papadopoulos combination, as to ensure proper operation and safety. Ex.1003 ¶143.

A POSITA would have been motivated to make this combination of Papadopoulos with Zwinkels to further enhance Zwinkels's ability to provide horizontal fore-aft motion and thereby further enhance the realism of the training experience provided by Zwinkels' trainer. Ex.1003 ¶¶141-143. Further, the fact that Zwinkels already expresses a desire to provide horizontal fore-aft movement would have motivated a POSITA to look to other known ways to enhance such movement, such as Papadopoulos's top frame that moves in the fore-aft direction relative to a bottom frame using wheels or rollers interposed between the frames. Ex.1003 ¶143. A POSITA also would have been motivated to make this combination based on Papadopoulos's teachings that its apparatus can be combined with an existing bicycle roller assembly similar to that of Zwinkels, as discussed above at Section IX.D.3, which would have prompted a POSITA to combine features of the trainer assembly depicted in Papadopoulos, such as its top frame 14 and bottom frame 32,

with any trainer with which Papadoplous's apparatus is used, including the trainer of Zwinkels. Ex.1003 ¶143. And, like discussed above, a POSITA would have been motivated to use a *track arrangement* for Papadopoulos's wheels or rollers in the Zwinkels-Papadopoulos combination so as to ensure proper operation for movement in the fore-aft direction and so as to ensure safety. Ex.1003 ¶143. Finally, a POSITA would have had a reasonable expectation of success of making this combination, because it would have involved a minor modification involving simply substituting Papadopoulos's combined top frame 14 and bottom frame 32 in place of Zwinkels' frame 3. Ex.1003 ¶144.

Petitioner notes that claim 26 recites that it is the "movable interconnection of the upper member" that comprises "a roller and track arrangement" that is "interposed between the upper member and the lower member," but claim 26 does not further specify a placement of a roller and track in any particular configuration, such as a roller being associated with the upper member and a track being associated with the lower member, or vice versa. Thus, claim 26's plain claim language encompasses either such arrangement, and, for example, encompasses a roller being associated with either the upper member or the lower member. Further, U.S. Provisional Application No. 62/546,768, filed August 17, 2017, to which the '394 patent claims priority and which the '394 patent incorporates by reference in its entirety (Ex.1001 at 1:7-12), discloses that the rollers of such a roller and track

arrangement may be positioned in the upper member with the track positioned in the lower member, or the rollers may be positioned in the lower member with the track positioned in the upper member. Ex.1007 at 17 (native pg. 8) (“While the previously-disclosed embodiments show the rollers associated with the trainer support, and the track/slot to be associated with the frame, the track and the rollers could be inverted. Stated differently, the track could be associated with the trainer support, and the rollers could be associated with the platform or platforms.”); *see also id.* at 18-20 (native pgs. 9-11). Thus, while Papadopoulos’s disclosures with regard to its roller arrangement between the top frame 14 and bottom frame 32 is broad enough to encompass either configuration, Papadopoulos’s specific disclosure of an embodiment having “a bottom frame, which supports a set of base rollers that permits said top assembly to move back and forth on said bottom frame” (Ex.1005 at claim 4; Ex.1006 at claim 3) discloses and renders obvious claim 26, because including the rollers in the bottom frame (and the track in the top frame) is within the scope of the claim, as demonstrated by the intrinsic evidence of the ’394 patent. Further, even to the extent it were argued that attaching the rollers to the top frame (and placing the track in the bottom frame) is required by claim 26, the same would have been obvious to a POSITA over Papadopoulos, because a POSITA would have appreciated that the disclosed horizontal movement of Papadopoulos would have

been attainable under either arrangement interchangeably without negatively impacting this horizontal movement. Ex.1003 ¶¶146-148.

Accordingly, Zwinkels in view of Papadopoulos renders obvious *the support of claim 25, wherein the movable interconnection of the upper member comprises a roller and track arrangement interposed between the upper member and the lower member* as claimed. Ex.1003 ¶149.

X. CONCLUSION

Petitioner respectfully requests that the Challenged Claims be cancelled.

Respectfully submitted,

Dated: August 26, 2024
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XI. MANDATORY NOTICES

A. Real Party-in-Interest

Pursuant to 37 C.F.R. § 42.8(b)(1), Petitioner certifies that the real parties-in-interest are Garmin International, Inc., Garmin USA, Inc., Garmin Corporation, and Garmin Ltd.

B. Related Matters

Pursuant to 37 C.F.R. § 42.8(b)(2), to the best knowledge of Petitioner, the '394 patent has not been involved in any lawsuits.

C. Lead and Back-up Counsel and Service Information

<u>Lead Counsel</u> Jason R. Mudd USPTO Reg. No. 57,700 jmudd@shb.com <u>Postal and Hand-delivery address</u> Shook, Hardy & Bacon 2555 Grand Blvd. Kansas City, MO 64108 Phone: (816) 474-6550 Fax: (816) 421-5547	<u>Back-up Counsel</u> Ryan Schletzbaum USPTO Reg. No. 70,850 rschletzbaum@shb.com Evan Weidner USPTO Reg. No. 78,455 eweidner@shb.com <u>Postal and Hand-delivery address</u> Shook, Hardy & Bacon 2555 Grand Blvd. Kansas City, MO 64108 Phone: (816) 474-6550 Fax: (816) 421-5547
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Please address all correspondence in this proceeding to lead and back-up counsel. Petitioner consents to service in this proceeding by email at the email addresses listed above.

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioner hereby certifies, in accordance with and reliance on the word count provided by the word-processing system used to prepare this Petition, that the number of words in this paper is 13,700. Pursuant to 37 C.F.R. § 42.24(d), this word count excludes the table of contents, table of authorities, mandatory notices under § 42.8, certificate of service, certificate of word count, appendix of exhibits, and any claim listing.

Dated: August 26, 2024

/Jason R. Mudd/
Jason R. Mudd
Lead Counsel for Petitioner
Reg. No. 57,700

CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e) and 37 C.F.R. § 42.105, service is being made on Patent Owner as detailed below:

<i>Date of service</i>	August 27, 2024
<i>Manner of service</i>	FEDERAL EXPRESS
<i>Documents served</i>	Petition for <i>Inter Partes</i> Review Under 35 U.S.C. § 312 and 37 C.F.R. § 42.104 of U.S. 10,434,394; Petitioner's Exhibit List; and Exhibits 1001-1013.
<i>Persons served</i>	76808 - Leason Ellis LLP One Barker Avenue Fifth Floor White Plains, NY 10601-1526 UNITED STATES

With a courtesy copy of the Petition sent on August 26, 2024 via e-mail to:

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