

PETITIONER LIFECORE'S DEMONSTRATIVES

*LIFECORE FITNESS, LLC D/B/A ASSAULT FITNESS V.
WOODWAY USA, INC.*

IPR2024-00083 (US 11,465,005 B2)

ORAL ARGUMENT: FEBRUARY 18, 2025

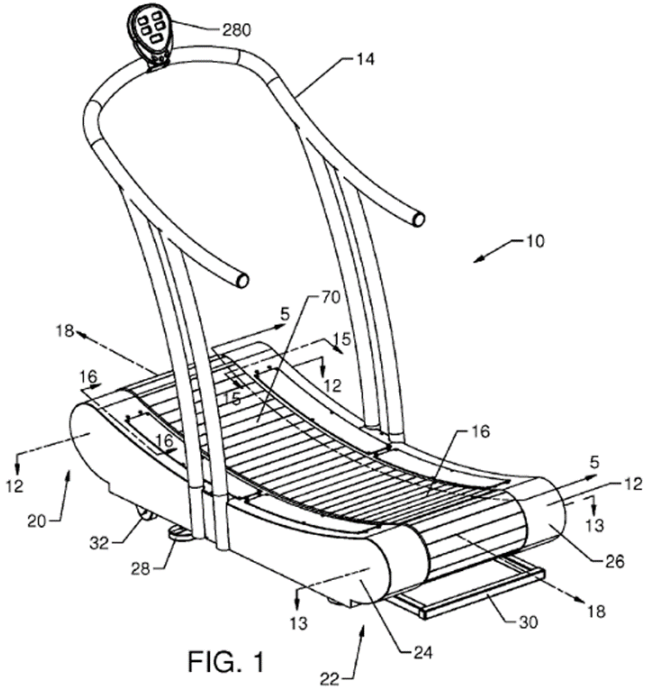
Overview

1. Background
2. Level of Ordinary Skill in the Art
3. Claim Construction
4. Socwell discloses:
 - a) a *"plurality of bearings,"* (Claims 6, 13, 16)
5. Tollkien discloses:
 - a) *"a running belt . . . wherein the running belt includes a running surface"* (Cl. 1, 9, 15)
 - b) a *"shaft"* *"coupled to the frame"* and *"adapted to support"* a *"pulley"* (Claims 2, 3)
 - c) *"a plurality of bearings coupled to the frame"* (Claims 6, 13, 16)
6. Rationale to Combine:
 - a) Socwell with Magid; and Sclater with Socwell/Magid or Tollkien
7. Motion to Exclude
8. Secondary Considerations

| Background

Woodway Patent Family

PRV	61/161,027 - 17MAR2009	
PCT	PCT/US2010/027543 - 16MAR2010 WO2010/107840 - 23SEPT2010	
CIP	CIP - Abandoned 13/235,065 - 16SEPT2011 US2012/0010053 - 12JAN2012	
	14/243,716 - 2APRIL2014 US8,986,169	14/076,912 - 11NOV2013 US9,114,276
	14/656,942 - 13MAR2015 US9,039,580 - 26MAY2015	14/832,708-21AUG2015 US10,265,566
	15/958,339 - 20APRIL2018 US10,561,884 - 18FEB2020	15/957,721-19APRIL2018 US10,561,883
	16/792,426 - 17FEB2020 US10,799,745 - 13OCT2020	16/792,444-17FEB2020 US10,850,150
		17/247,101-30NOV2020 US11,465,005-11OCT2022



Ex. 1001, Fig. 1

Pet., 6

| IPR Grounds

Primary References: Socwell & Tolkien

Ground	Basis ²	References	Claims Challenged
1	§ 103	Socwell, Magid, and Sclater	1-4, 6-7, 9-13, 15-16
2	§ 103	Tolkien and Sclater	1-4, 6-13, 15-16

Disputed Limitations

1. A manually powered treadmill, comprising:
a frame;
at least one front running belt pulley coupled to the frame;
at least one rear running belt pulley coupled to the frame
and spaced a distance from the at least one front
running belt pulley;
a running belt at least partially supported by at least one
of the at least one front running belt pulley and the at
least one rear running belt pulley, wherein the running
belt includes a running surface, at least a portion of
which is curved;

a safety device coupled to the frame and the running belt,
the safety device having a first element and a second
element, the first element substantially surrounding the
second element or the second element substantially
surrounding the first element;
wherein one of the first and second elements of the safety
device and the running belt freely rotate in a first
direction of rotation relative to the frame, however, in
a second direction of rotation, opposite the first direc-
tion of rotation, the one of the first and second elements
is substantially prevented from rotation relative to the
frame to substantially prevent or resist rotation of the
running belt relative to the frame.

Disputed Limitations

2. The manually powered treadmill of claim 1, further comprising a front shaft coupled to frame, the front shaft being adapted to support the at least one front running belt pulley.

6. The manually powered treadmill of claim 1, further comprising a plurality of bearings coupled to the frame, at least one bearing of the plurality of bearings configured to at least partially support the running belt.

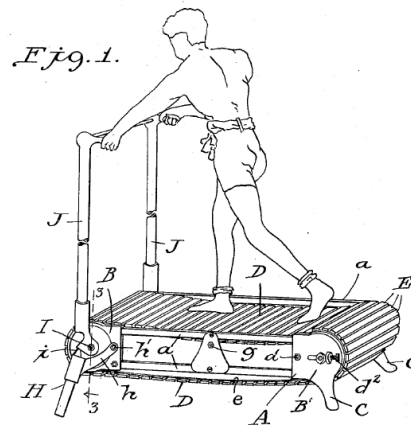
Patent Owner's manual treadmill technology was well-known

PO contends that these patents teach “revolutionary” “manual treadmills that are self-propelled and allow a runner or walker to control his/her/their speed without the use of any motor.”

PO further contends this
"treadmill was the first of its
kind when it was introduced in
2009."

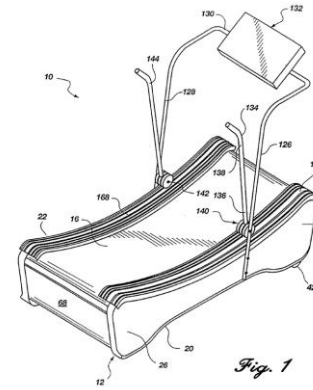
See Ex. 1005, ¶9; Ex. 1006, ¶10

Schmidt:



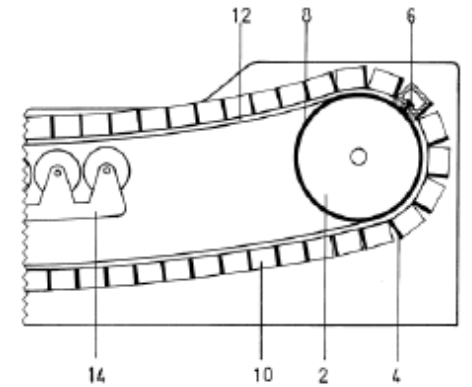
Ex. 1009, Fig. 1

Socwell:



Ex. 1011, Fig. 1

Tolkien:



Ex. 1031, Fig. 1

| Safety Concerns

Treadmill safety concerns were well known

Chickering:

A person exercising on this type of treadmill is likely to lose his balance because the frictionless surface offers no resistance to the movement of his feet, and he is therefore unable to obtain the leverage necessary for proper balance. Also, the user is likely to run off the lower end of the treadmill because the faster he runs the faster the belt accelerates and moves beneath his feet, carrying him to the rear.

Ex. 1013, 1:30-35

Socwell:

In particular, if the rollers supportably disposed in relation to the endless belt are so easily movable, the user may potentially lose his equilibrium or balance and fall from the exercise treadmill resulting in possible injuries.

Ex. 1011, 1:34-37

ISO 20957:

5.8 Side handrails/front handlebar

Treadmills shall be equipped with side handrails or front handlebar for user support and emergency dismount. Ex. 1020 at 8

treadmill

training equipment with a unidirectional moving surface on which a walking or running activity can take place, where the feet are free to leave the moving surface

Ex. 1020 at 4

| Running Surface

Running Surface

Dr. Giachetti

The running surface is the portion of the treadmill where the user is expected to place their feet while exercising.

Ex. 1003, ¶58

Dr. Blair

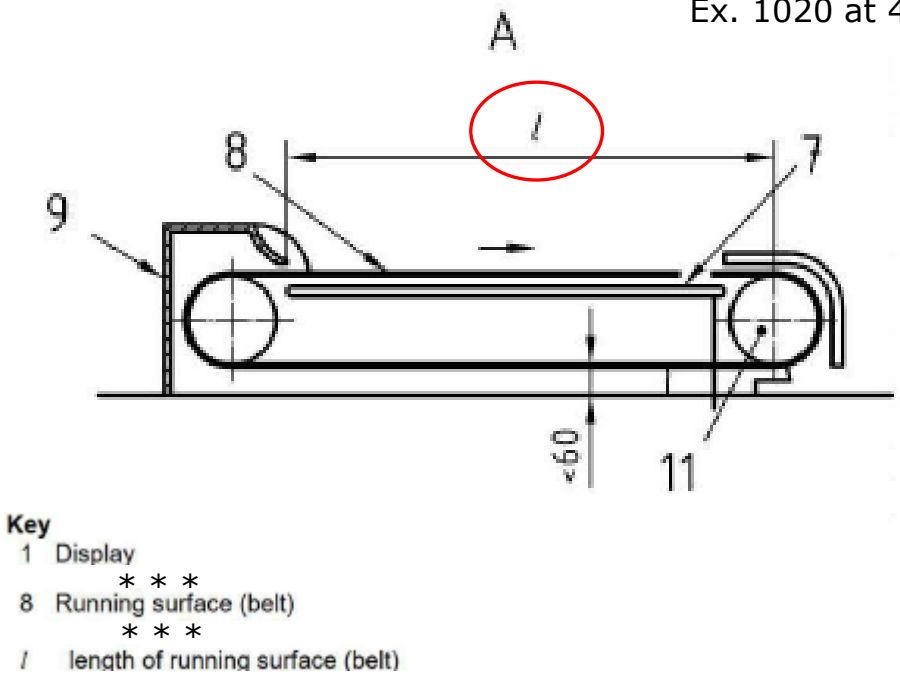
92. A POSA would understand a treadmill’s “running surface” to be a surface of the running belt on which a runner’s feet would typically make contact when the user is running on the treadmill during normal use.

Ex. 2018, ¶92

ISO 20957:

3.2
running surface
length of the usable part of the moving surface (see *l* in Figure 1)

Ex. 1020 at 4



Ex. 1020 at 5; Ex. 1040, 60:2-22

| Bearing Systems

Dr. Giachetti re Bearing Systems

65. A bearing is a general term for a mechanical element that provides a means for low friction movement between two surfaces (PT Handbook, Ex. 1016, 2-1). The motion between the elements may be rotary motion or “linear” motion (PT Handbook, Ex. 1016, 2-1). The three most common and predominant bearing systems for supporting a treadmill running surface are: rotary plain/journal bearings, rotary rolling element bearings, and linear bearings/bearing surfaces.

Ex. 1003, ¶65

66. The type of running surface that is used corresponds with the type of bearing system selected for the treadmill.

Ex. 1003, ¶66

Plain Journal Bearings

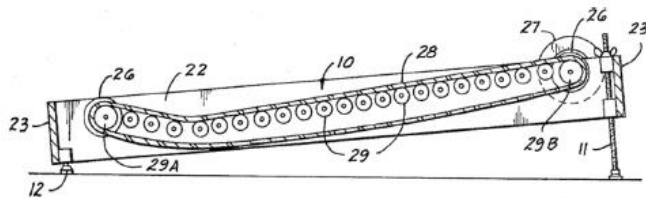


Fig. 3

Chickering, Ex. 1013, Fig. 3

Rolling Element Bearings

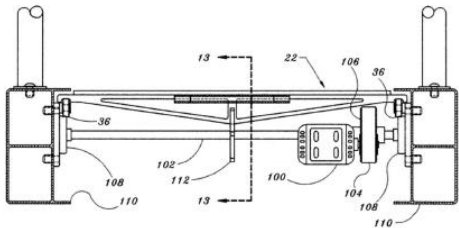


Fig. 12

Abelbeck, Ex. 1015, Fig. 12

Bearing Surface

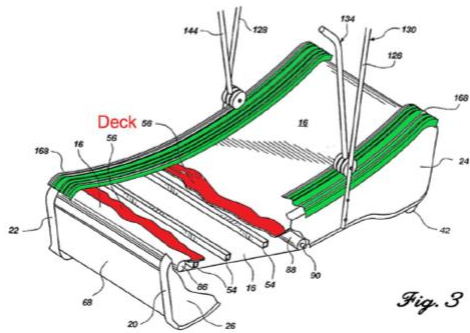


Fig. 3

Socwell, Ex. 1011, Fig. 3 (Annotated)

Ex.1015, Fig.12 (Annotated)



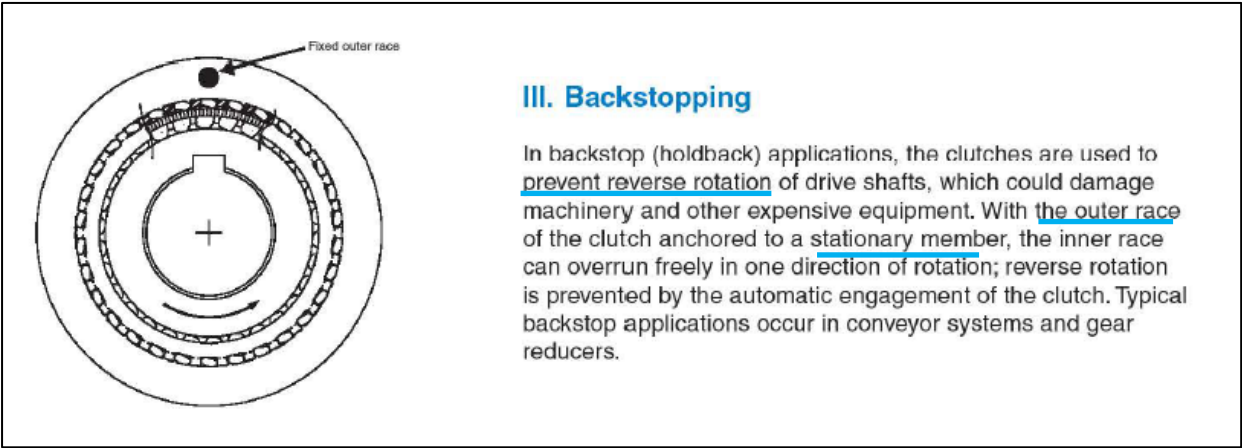
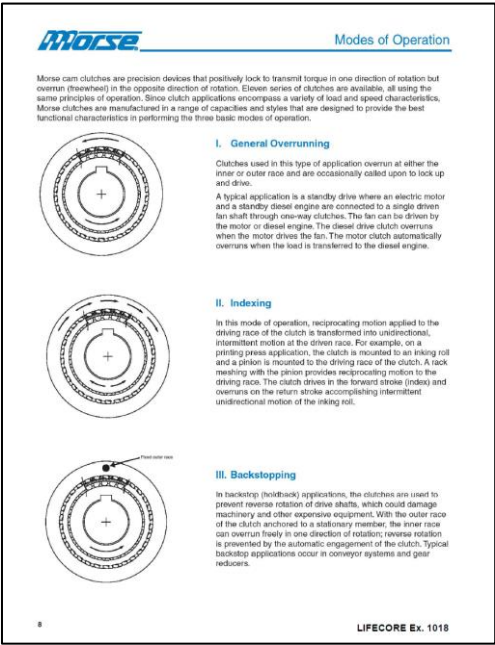
| Clutches

One-way bearings/clutches were also well known

Emerson:



Ex. 1018, cover, 8



III. Backstopping

In backstop (holdback) applications, the clutches are used to prevent reverse rotation of drive shafts, which could damage machinery and other expensive equipment. With the outer race of the clutch anchored to a stationary member, the inner race can overrun freely in one direction of rotation; reverse rotation is prevented by the automatic engagement of the clutch. Typical backstop applications occur in conveyor systems and gear reducers.

Dr. Blair:

So they may use it to educate themselves on principles of operations on how they work.

Ex. 1038, 89:12-19

“[C]ommercially available and inexpensive sprag-type clutches . . . require less design and qualification work to implement ...”

Dr. Giachetti, Ex. 1036, ¶¶98

Emerson:



NSS Series
Models NSS-8 - NSS-60



The NSS Series clutch is available in 12 sizes and is designed with the same overall dimensions as a light metric series ball bearing. The inner race offers a key seat and the outer race press fits into the housing. The clutch is furnished with protective oil and must be lubricated before operating. These clutches do not have bearings to support radial force, so additional bearing support is required. The NSS Series clutch is excellent for applications where space is restricted, and is suitable for overrunning.

Lubrication

- Oil lubrication is recommended.
- Do not use greases or lubricants with EP additives.



NSS Series
Models NSS-8 - NSS-60



Features

- Sprag type one way clutch
- High torque and longer life than roller ramp clutches
- Full metric design
- Overturning speed is higher than roller ramp clutches

Industries Served

- Food and beverage
- Gearing
- Printing
- Textile

Field Applications

- Exercise equipment
- Food processing equipment
- Printing presses
- Roll conveyors

Model Number	Torque Capacity		Maximum Overrunning Speed		Drag Torque		Bore Size H7		Keyway		Dimensions	
	lb - ft	N-m	rpm	rpm	lb - ft	N-m	Inches	mm	Inches	mm	Inches	mm
NSS-8	4.9	6.7	6,000	3,000	0.004	0.005	0.3150	8	+0.0006 -0.000	0.08 x 0.04	2 x 1.0	0.315
NSS-10	8.9	12.0	4,500	2,300	0.005	0.007	0.3937	10	+0.0006 -0.000	0.12 x 0.06	3 x 1.4	0.354

Model Number	Torque Capacity		Maximum Overrunning Speed		Drag Torque		Bore Size H7		Keyway		Dimensions	
	lb - ft	N-m	rpm	rpm	lb - ft	N-m	Inches	mm	Inches	mm	Inches	mm
NSS-8	4.9	6.7	6,000	3,000	0.004	0.005	0.3150	8	+0.0006 -0.000	0.08 x 0.04	2 x 1.0	0.315
NSS-10	8.9	12.0	4,500	2,300	0.005	0.007	0.3937	10	+0.0006 -0.000	0.12 x 0.06	3 x 1.4	0.354

Model Number	Torque Capacity		Maximum Overrunning Speed		Drag Torque		Bore Size H7		Keyway		Dimensions	
	lb - ft	N-m	rpm	rpm	lb - ft	N-m	Inches	mm	Inches	mm	Inches	mm
NSS-8	4.9	6.7	6,000	3,000	0.004	0.005	0.3150	+0.0006 -0.000	8	+0.015 -0.000	0.08 x 0.04	2 x 1.0
NSS-10	8.9	12.0	4,500	2,300	0.005	0.007	0.3937	+0.0006 -0.000	10	+0.015 -0.000	0.12 x 0.06	3 x 1.4

Ex. 1018, 52-53

Dr. Blair:

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

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

Ex. 1038, 89:20-90:12

State of the Art: One-Way Bearing Clutch

“...[A] POSA would have considered a sprag-type one-way clutch bearing for an exercise equipment application, such as a treadmill.” Dr. Giachetti, Ex. 1036, ¶95

Emerson:

Dr. Blair:

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

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

Ex. 1038, 92:4-14

Morse

KK Series
Model KK-1K and KK-2K

KK-1K (keyed inner)

KK-2K (keyed inner and outer)

Morse KK clutches incorporate a compact cam clutch with built-in bearing support. This unique construction combines a cam clutch with a 6200 Series metric ball bearing for use in applications ranging from exercise equipment to industrial machinery. This general purpose clutch is intended for backstopping, indexing and overrunning applications and can be utilized with both oil and grease lubrication.

Industries Served

- Fitness
- Manufacturing
- Printing
- Textile

Field Applications

- Electric motor backstops
- Exercise equipment
- Household appliances
- Pump backstops

Enhancements

- New sizes
- New shaft mounting options
- Both inner and outer race keyway options

Dimensions

Model	A	B	C	D	E	F	G	H	I
KK-1K	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
KK-2K	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125

Industries Served

- Fitness
- Manufacturing
- Printing
- Textile

Field Applications

- Electric motor backstops
- Exercise equipment
- Household appliances
- Pump backstops

Morse

NSS Series
Models NSS-8 - NSS-60

Features

- Sprag type one way clutch
- High torque and longer life than roller ramp clutches
- Full metric design
- Overrunning speed is higher than roller ramp clutches

Industries Served

- Food and beverage
- Gearing
- Printing
- Textile

Field Applications

- Exercise equipment
- Food processing equipment
- Printing presses
- Roll conveyors

Dimensions

Model	A	B	C	D	E	F	G	H	I
NSS-8	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-12	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-16	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-20	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-25	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-30	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-35	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-40	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-45	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-50	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-55	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
NSS-60	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125

5. The recommended shaft tolerance is H7, and the key profile should be in accordance with the following standards:
6. NSS-8 - 12, ... DIN 6885: 1
7. NSS-15 - 40, ... DIN 6885: 3
8. Suitable surface pressure of the key should be selected according to your company design standards.

For Engineering at 1-800-426-2093 or visit www.morse.com

Ex. 1018, 48

Ex. 1018, 53

“Dr. Blair ... confirmed ... a POSA would have used the Emerson catalog to find a solution for ‘[p]reventing motion in the unintended direction’ on ‘a curved manual treadmill’[.]”

Dr. Giachetti, Ex. 1036, ¶99

Dr. Blair:

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

A The direction. Preventing motion in the unintended direction.

Ex. 1038, 105:8-12

| Prosecution History

Examination focused on the "safety device" limitations

1. (Currently Amended) A manually powered treadmill, comprising:
 - a frame;
 - at least one front running belt pulley coupled to the frame;
 - at least one rear running belt pulley coupled to the frame and spaced a distance from the at least one front running belt pulley;
 - a running belt at least partially supported by at least one of the at least one front running belt pulley and the at least one rear running belt pulley, wherein the running belt includes a running surface, at least a portion of which is curved;
 - a safety device coupled to the frame and the running belt, the safety device having a first element and a second element, the first element substantially surrounding the second element or the second element substantially surrounding the first element ~~wherein at least one of the first and second elements is adapted for rotation relative to the frame;~~
 - wherein one of the first and second elements of the safety device and the running belt freely rotate in a first direction of rotation relative to the frame, however, in a second direction of rotation, opposite the first direction of rotation, the one of the first and second elements is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame.

| Level of Skill in the Art

POSA Definitions

Petitioner	Patent Owner
A person of ordinary skill in the art (POSA) of the '005 Patent would have had a bachelor's degree in mechanical engineering and at least one year of machine design experience related to power transmission equipment and a demonstrated understanding of the biomechanics of exercise, including knowledge in the field of anthropometry (<i>i.e.</i> , the study of human proportions). (Ex.1003, ¶¶48, 44-49.)	... a person of ordinary skill in the art of the '005 Patent would be a person with a bachelor of science degree in mechanical engineering <u>or</u> at least two years of experience in the treadmill industry, including experience and knowledge of the design, construction, testing, and operation of manual treadmills. EX2018, ¶¶61-66. (Emphasis added by Petitioner)

| Claim Construction

Claim Construction

Substantially prevents:

Instead, to better align with both, the Court construes the claim term “substantially prevents” as “restricts rotation to allow for only one rotational direction of movement.”⁵

Ex. 1033, 16

Safety Device:

The Court construes the term “safety device” in the ’005 Patent as “a device that includes the elements recited and restricts rotation to allow for only one rotational direction of movement or resists rotation in one direction of rotation.”

Ex. 1033, 23

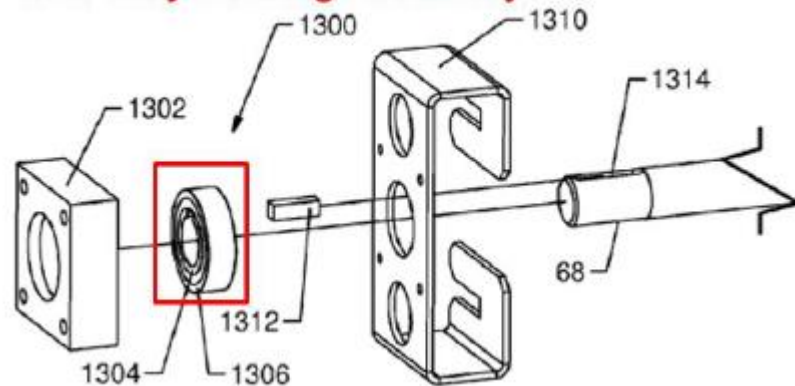
PO improperly attempts to read limitations from the specification into the claims

Thorner v. Sony Computer Entm't Am. LLC, 669 F.3d 1362, 1367 (Fed. Cir. 2012)

PO argues that “[i]n the ‘005 Patent, the ‘plurality of bearings’ is only described and depicted as lying below and supporting the running belt 16.”

POR, 7

One-Way Bearing Assembly



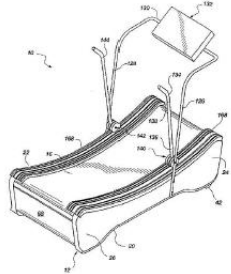
Ex. 1001, Fig. 36

Dr. Giachetti

65. A bearing is a general term for a mechanical element that provides a means for low friction movement between two surfaces (PT Handbook, Ex. 1016, 2-1). The motion between the elements may be rotary motion or “linear” motion (PT Handbook, Ex. 1016, 2-1). The three most common and predominant bearing systems for supporting a treadmill running surface are: rotary plain/journal bearings, rotary rolling element bearings, and linear bearings/bearing surfaces.

Ex. 1003, ¶65

Socwell

	
US05897461A	
United States Patent [19]	[11] Patent Number: 5,897,461
Socwell	[45] Date of Patent: *Apr. 27, 1999
[54] EXERCISE TREADMILL.	
[75] Inventor: Jeff D. Socwell, North Ogden, Utah	
[73] Assignee: Precor Incorporated, Bothell, Wash.	
[*] Notice: This patent is subject to a terminal disclaimer.	
[21] Appl. No.: 09/009,582	
[22] Filed: Jan. 20, 1998	
Related U.S. Application Data	
[63] Continuation-in-part of application No. 08/721,724, Sep. 27, 1996, Pat. No. 5,709,632.	
[51] Int. Cl. A63B 22/02	
[52] U.S. Cl. 482/54	
[58] Field of Search 422/51, 54	
[56] References Cited	
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1,211,765 1/1917 Schmidt 482/54	
2,842,865 7/1958 Kelley 482/54	
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0 144 294 6/1985 European Pat. Off. .	
OTHER PUBLICATIONS	
Document Information Copy of informational pamphlet entitled "Contour Jogger", by Battle Creek Equipment, Form CT11, re Patent No. 3,642,279 (U10-above).	
Primary Examiner —Lycene A. Reichard Attorney, Agent, or Firm —Christensen O'Connor Johnson & Kindness PLLC	
[57] ABSTRACT	
A curved deck treadmill (10) is disclosed as comprising a support frame (12) having a first side (20) and a second opposing side (22) for supporting a deck (56) therebetween. The deck comprises a forward end (58), a rear end (60), and an intermediate portion (62) disposed between the first and second ends. The intermediate portion of the deck is preferably formed in a substantially arcuate configuration such that a significant portion of the intermediate portion may be operably disposed dimensionally lower in longitudinal relation to the first and second ends of the deck. Further, a roller assembly (14) is provided preferably comprising a first roller (78) and second roller (86). The first roller may be rotatably disposed contiguous the first end of the deck between the first side and the second side of the support frame. Correspondingly, the second roller is preferably disposed contiguous the second end of the deck between the first and second sides of the support frame. In operation, an endless belt (16) may be rotatably mounted in relation to the roller assembly (14) and operatively disposed in relation to the deck (56), thereby providing a structurally supported arcuate shaped, movable surface on which a user may exercise.	
38 Claims, 10 Drawing Sheets	
	
LIFECORE Ex. 1011, p. 1	

US 5,897,461 (Ex. 1011)

Claims 6, 13, and 16

6. The manually powered treadmill of claim 1, further comprising a plurality of bearings coupled to the frame, at least one bearing of the plurality of bearings configured to at least partially support the running belt.

Socwell discloses a "*plurality of bearings*" (Claims 6, 13, 16)

"[T]he rollers 98 and the deck 56 collectively provide a '*plurality of bearings*'"

Ex. 1003, ¶196

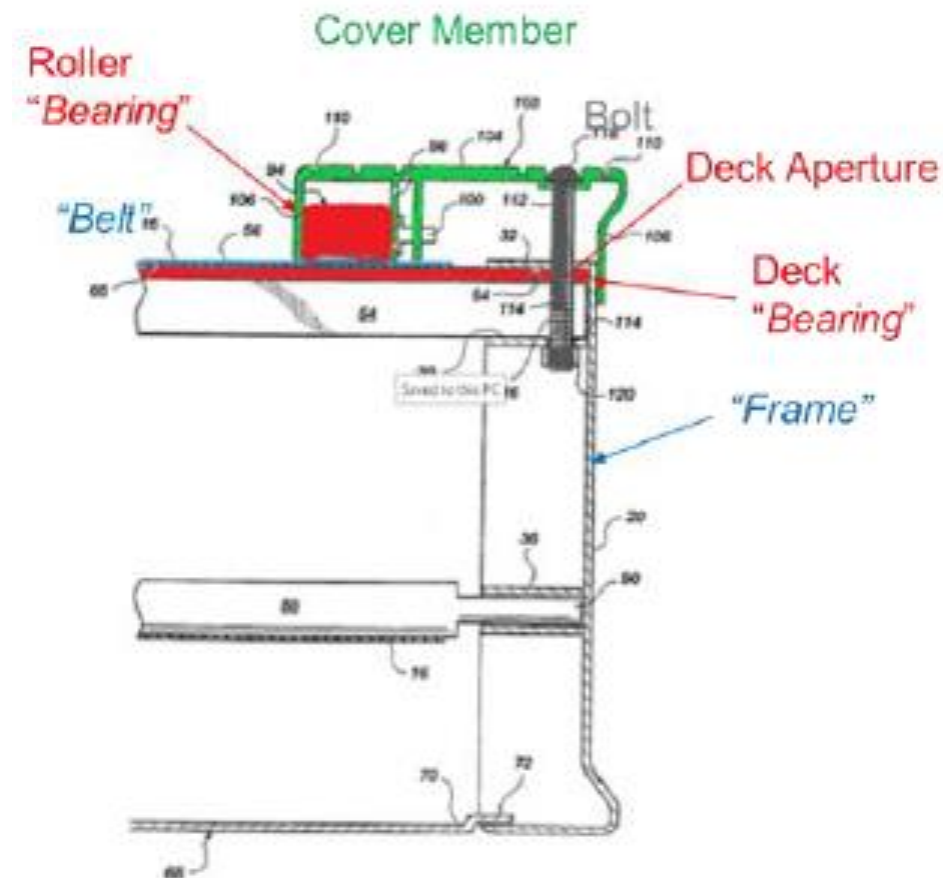
Socwell:

As shown, the curved deck treadmill 10 comprises a support frame 12 having a first side 20 and a second opposing side 22 and having a deck 56 supportably disposed therebetween.

Ex. 1011, 5:22-25

In one presently preferred embodiment of the present invention, the belt securing assembly 94 comprises a roller 98 having an axle 100 which rotatably engages a mounting bracket 96. The mounting bracket 96 is preferably disposed in relation to the roller 98 such that the roller 98 may engage the belt 16, thereby substantially retaining a side portion of the belt 16 substantially flush with the deck 56.

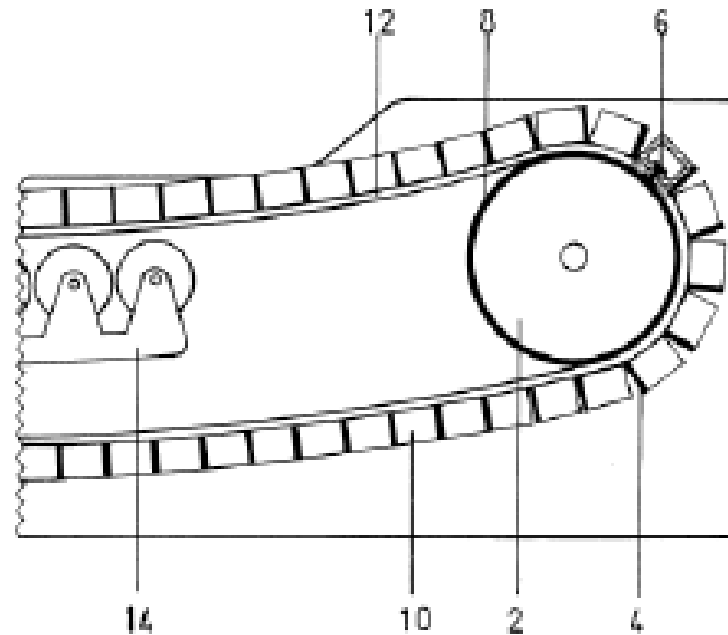
Ex. 1011, 10:17-23



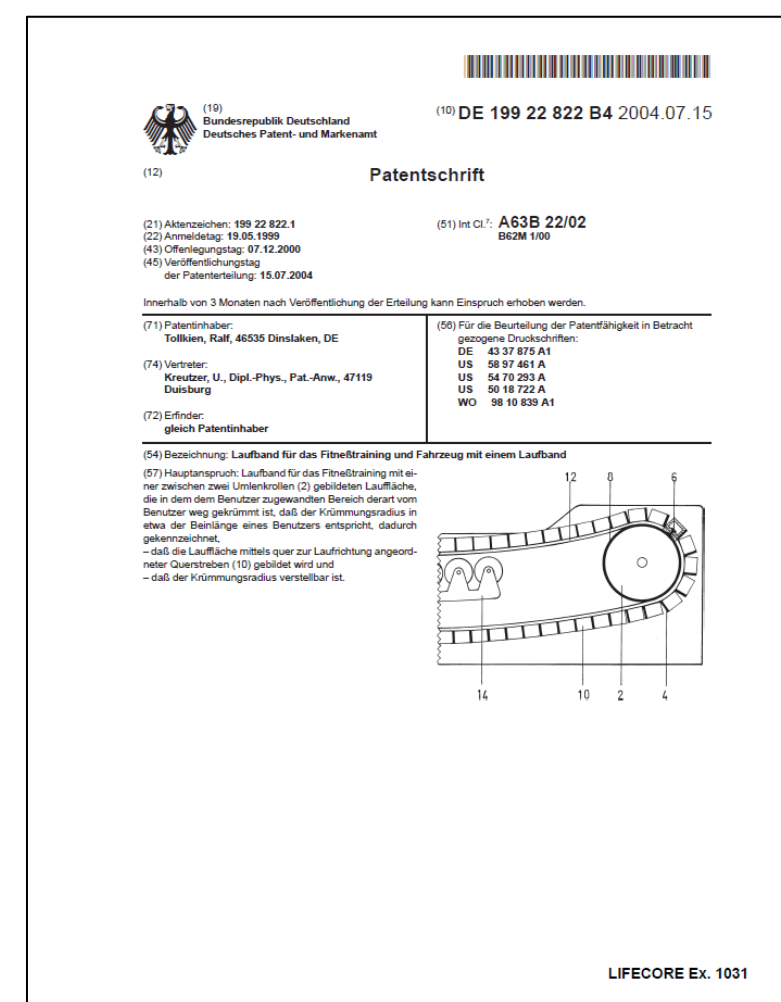
Ex. 1011, Fig. 5 (Annotated)

Fig 5

Tollkien



DE Patent No. 199 22 822 B4 (Ex. 1031)



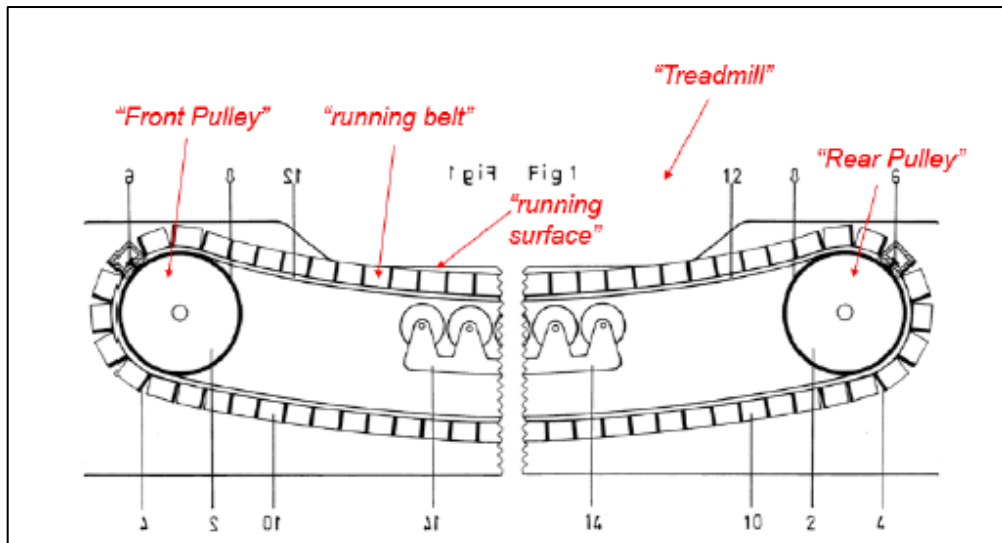
Independent Claims 1, 9, and 15

1. A manually powered treadmill, comprising:
a frame;
at least one front running belt pulley coupled to the frame;
at least one rear running belt pulley coupled to the frame
and spaced a distance from the at least one front
running belt pulley;
a running belt at least partially supported by at least one
of the at least one front running belt pulley and the at
least one rear running belt pulley, wherein the running
belt includes a running surface, at least a portion of
which is curved;

a safety device coupled to the frame and the running belt,
the safety device having a first element and a second
element, the first element substantially surrounding the
second element or the second element substantially
surrounding the first element;
wherein one of the first and second elements of the safety
device and the running belt freely rotate in a first
direction of rotation relative to the frame, however, in
a second direction of rotation, opposite the first direc-
tion of rotation, the one of the first and second elements
is substantially prevented from rotation relative to the
frame to substantially prevent or resist rotation of the
running belt relative to the frame.

Tollkien discloses "*a running belt . . . wherein the running belt includes a running surface*" (Cl. 1, 9, 15)

Tollkien:



Ex. 1031, Fig. 1 (Annotated)

The running surface is formed by cross members 10 that are transverse to the direction of movement, which are attached with rivets 6 to a continuous belt 12.

Ex. 1031, [0018]

The belt 30 is analogous to the belt 12 shown in Fig. 1, in particular comprising numerous cross members.

Ex. 1031, [0022]

Petitioner relies on Tolkien's belt assembly 12 for satisfying the "running belt" limitations

Patent Owner:

PO argues that Petitioner, "point[s] to a series of cross members that are attached to either belt 12 or belt 30" for satisfying the "running surface" limitation.

POR, 12

PO argues that "[t]he Petition did not identify the combined assembly of continuous belt 12 and cross members 10 as the claimed 'running belt.'"

Surreply, 6-7

Petition re Claims 1, 9, 15:

Tolkien discloses a continuous belt 12 ("running belt") that is wrapped around the front and rear rollers. (Ex.1031, [0020].) The belt 12 is supported at the ends by the rollers 2 and in the middle by the runners 14. (Ex.1031, [0018]–[0020].) Tolkien discloses that the belt 12 includes cross members 10 that extend outward to form a curved running surface. (Ex.1031, [0018]–[0020], Fig.1; Ex.1003, ¶¶271, 326-327, 355.)

Pet., 79

Petition re Claim 8:

Tolkien discloses that the belt 12 includes cross members 10 ("slat(s)") that form a running surface: "The running surface is formed by cross members 10 that are transverse to the direction of movement, which are attached with rivets 6 to a continuous belt 12." (Ex.1031, [0018]; Ex.1003, ¶¶317-318.)

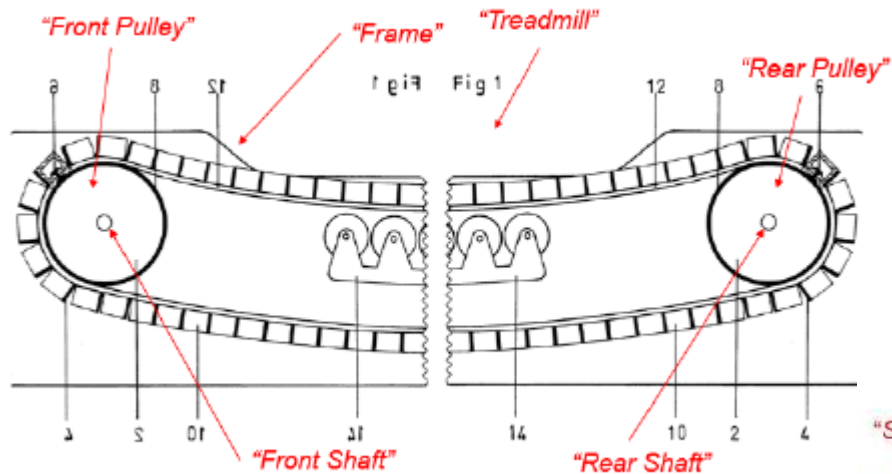
Pet., 96

Claims 2 and 3

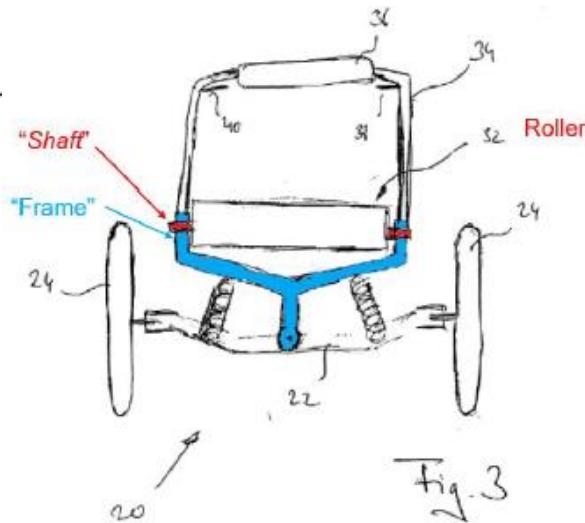
2. The manually powered treadmill of claim 1, further comprising a front shaft coupled to frame, the front shaft being adapted to support the at least one front running belt pulley.

Tollkien discloses a "shaft" "coupled to [the] frame" and "adapted to support" a "pulley" (Claims 2, 3)

Tollkien:



Ex. 1031, Fig. 1 (Annotated)



Ex. 1031, Fig. 3 (Annotated)

Dr. Giachetti:

300. Tollkien discloses a shaft ("front shaft") extending through the center of the front roller 2 ("front pulley") and a shaft ("rear shaft") extending through the center of the rear roller 2 ("rear pulley"). (Tollkien, Ex. 1031, Fig. 1.) Tollkien illustrates an example coupling in Fig. 3, wherein the frame defines holes and the front shaft is receive through the holes.

Ex. 1003, ¶300

Tolkien's disclosure includes its drawings

Patent Owner:

PO argues, "Petitioner provides no support for the proposition that Tolkien expressly discloses a front or rear shaft that supports the identified front or rear pulley."

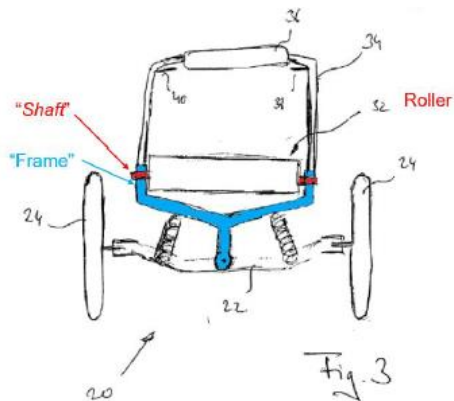
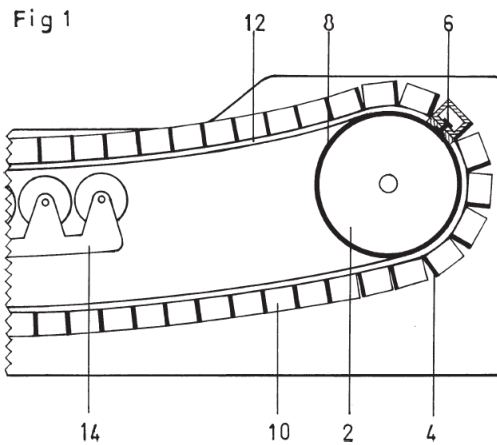
POR, 14

Dr. Giachetti:

A. I did rely on the English translation but my reading of it is as through the lens of a person of ordinary skill in the art and the whole disclosure, not the disclosure but the teachings of Tolkien are not just the words. They are the pictures also. So I relied on all of that and I know you are just asking me about the words.

Ex. 2082, 66:9-16

Dr. Blair: "a POSA would have no indication of what the circle in Figure 1 is intended to represent." Ex.2018, ¶101



Dr. Blair re Tolkien Fig. 1:

Q. . . **Could that circle be a shaft?**

A. **It could be.**

Ex. 1050, 59:11-13

Dr. Blair re Tolkien Fig. 3:

Q. Figure 3 shows a Y-shaped component; do you see that?

A. Yeah, I think I understand what you're talking about.

Q. Would you agree that that's the frame?

A. I don't know that explicitly they ever name it, but **it could be called a frame.**

Q. Despite the lack of description, **would you agree that the Y-shaped component supports the roller 32?**

A. As best you can tell from the hand sketch, **yes**, in Figure 3.

Ex. 1050, 60:18-64:4

Claims 6, 13, 16

6. The manually powered treadmill of claim 1, further comprising a plurality of bearings coupled to the frame, at least one bearing of the plurality of bearings configured to at least partially support the running belt.

Tollkien discloses "*a plurality of bearings coupled to the frame*" (Claims 6, 13, 16)

Tollkien:

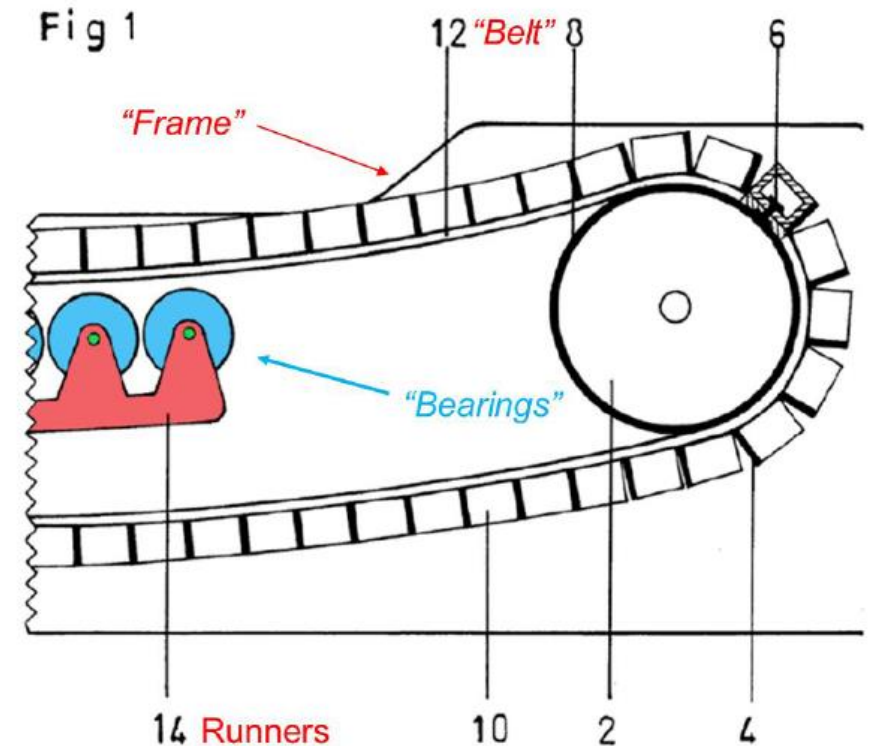
"The runners 14 placed underneath the running surface prevent the belt from bouncing when in use."

Ex. 1031, [0020]

Dr. Giachetti:

308. A POSA would have understood that the runners 14 are mounted and fixed to the frame and the bearings are mounted for rotation about the axels and relative to the frame to provide rolling engagement with the continuous belt 12.

Ex. 1003, ¶308



Ex.1031, Fig.1 (Annotated)

Dr. Giachetti further explained how Tolkien's runners 14 are "*coupled to the frame.*"

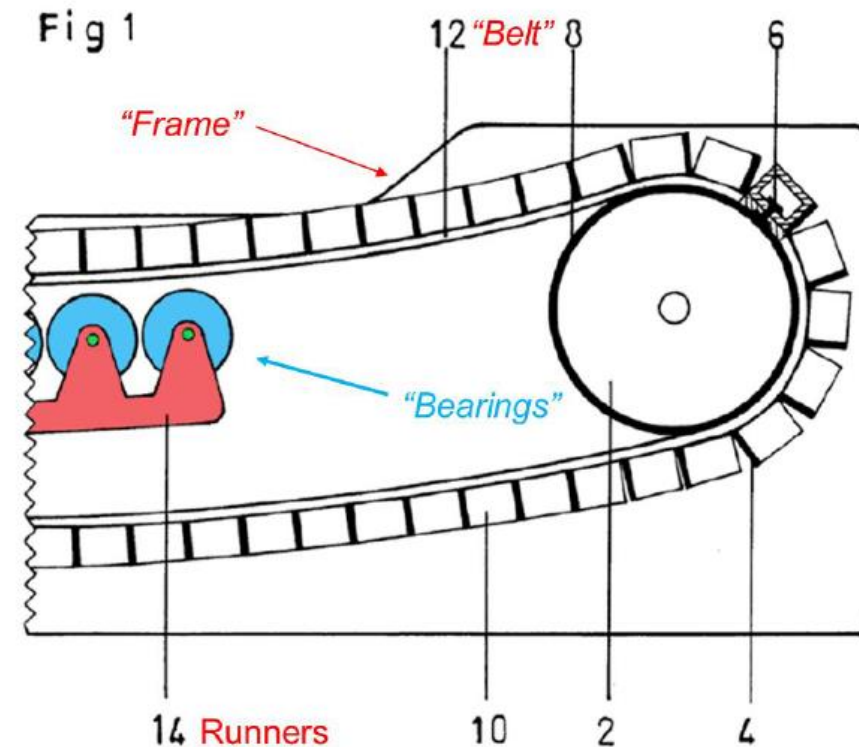
Dr. Giachetti:

A. So it says, you know, in Paragraph 20 that the runners 14 are placed underneath the running surface to prevent the belt from bouncing while in use. So that means that the runners are attached to the treadmill underneath the running surface and that they provide an upward force to that running surface while the person is on it. That's all contained in that one sentence.

* * *

A. Well, it must be coupled to the frame in some way, otherwise, it wouldn't provide the upward force for what Tolkien is talking about in terms of the bouncing.

Ex. 2082, 72:1-8, 72:20-23



Ex.1031, Fig.1 (Annotated)

Dr. Blair's hypothetical attachments of Tolkien's runners/bearings to structure other than the frame would not have been reasonable to a POSA.

Dr. Blair Declaration:

"[T]he runners 14 could be attached to the belt itself or attached to and suspended between the front and rear pulleys."

Ex. 2018, ¶114

Dr. Blair Deposition:

Q. Tolkien describes the runners 14 as preventing the belt from bouncing. Based on that description, does that mean that the runners 14 have to be fixed to something other than the belt?

A. Yes, but -- yes.

Ex. 1050, 88:11-15

Dr. Blair Deposition:

Q. In paragraph 114, you opined that runners 14 could be suspended between the front and rear pulleys. Could you please elaborate on how that would work?

A. Well, that would be the case I was describing a little bit ago, right? You could actually have them mounted outside and not connected to the frame. They could be suspended from above --

Q. By what?

A. -- or supported from below.

Q. You're referring to a design where the runners are attached to the floor as opposed to the frame?

A. That could be an example, yes.

Ex. 1050, 88:16-89:2

| Rationale to Combine

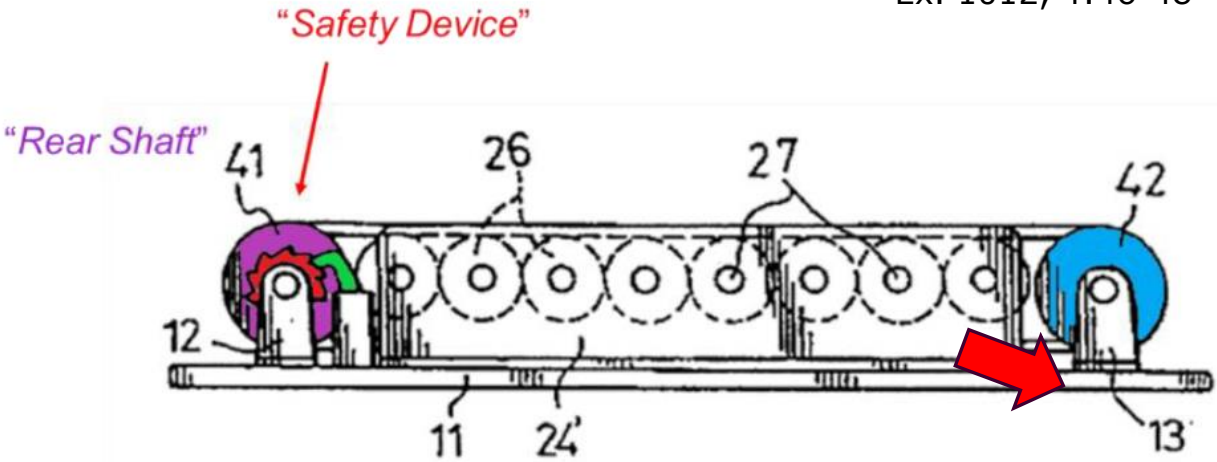
“It would have been obvious to a POSA to combine the manual treadmill topology with a curved running surface disclosed in Socwell with the known technique of a one-way clutch to prevent treadmill belt motion in a forward direction as disclosed in Magid.”

Dr. Giachetti, Ex. 1003, ¶129

Magid:

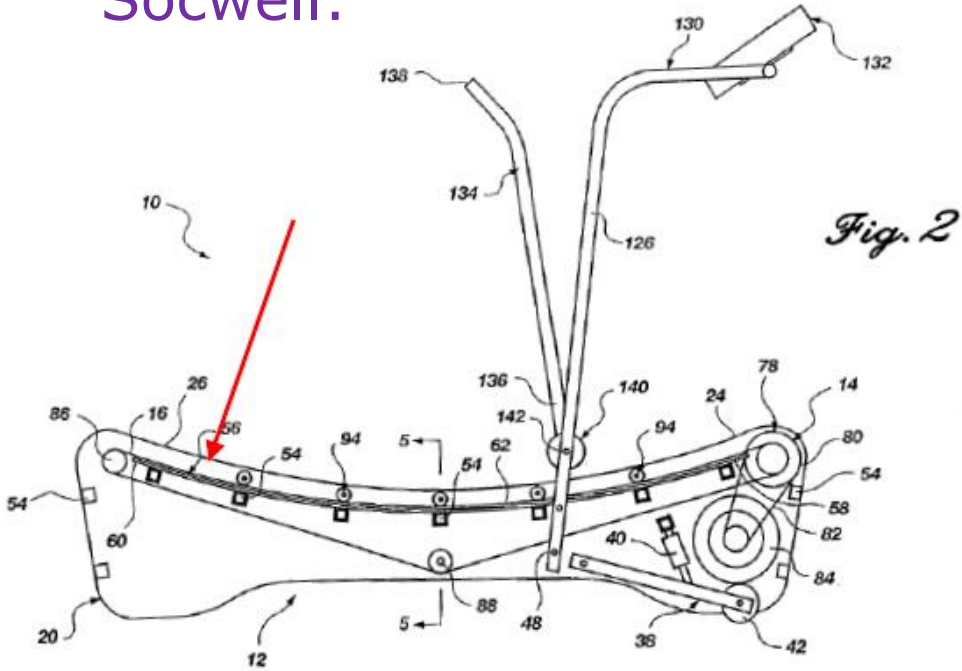
A unidirectional control means 6, 6' is installed to permit only unidirectional movement of the left and right foot belts 4, 4'. In this embodiment, the control means 6, 6' includes a

Ex. 1012, 4:46-48



Ex. 1012, Fig. 9 (Annotated)

Socwell:



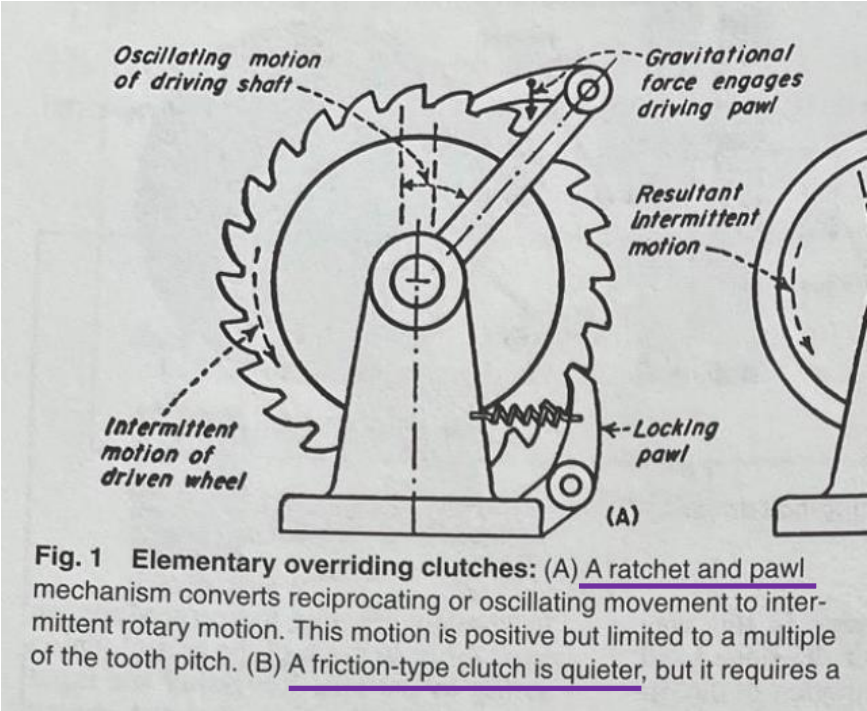
Socwell, Ex. 1011, Fig. 2. (Annotated)

Rationale to combine Sclater with Socwell/Magid, or Tolkien

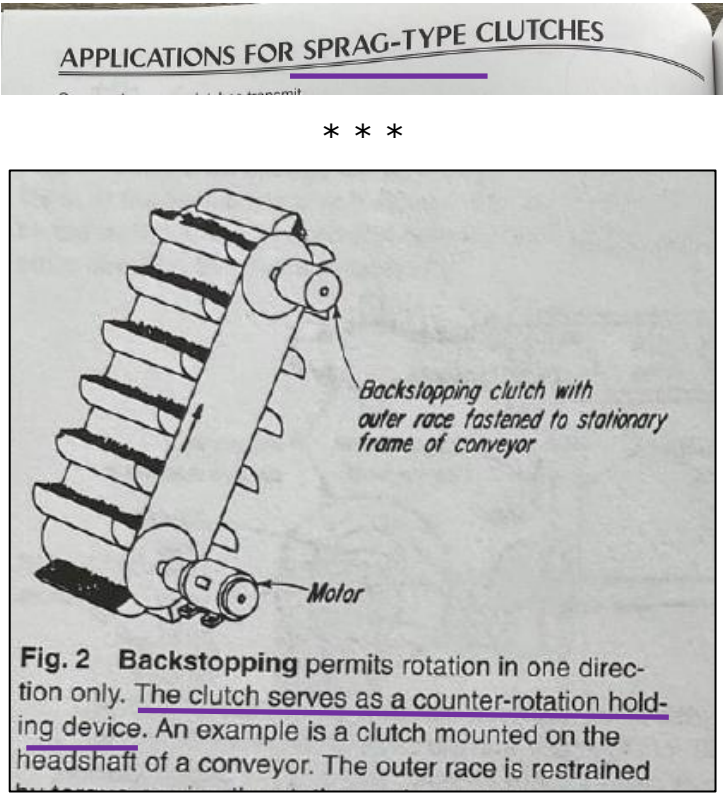
“A POSA would have been further motivated to substitute **Sclater’s** one-way sprag-type bearing assembly for Magid’s ratchet-and-pawl one-way clutch mechanism to obtain predictable results, e.g., reduced noise and improved durability[.]”

Dr. Giachetti, Ex. 1003, ¶141

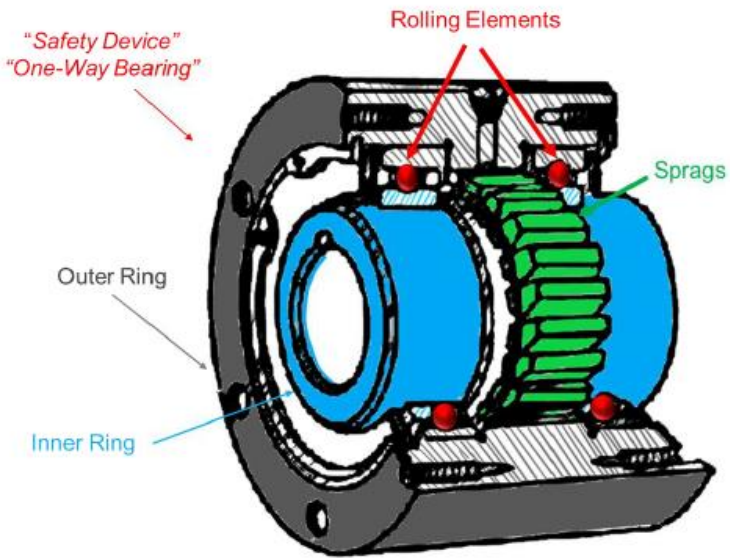
Sclater:



Ex. 1017 at 316



Ex. 1017 at 320



Ex. 1017 at 318 (Annotated)

| Motion to Exclude

Patent Owner's Motion to Exclude

Ex. 1036: Dr. Giachetti's Reply Declaration

Dr. Giachetti's opinions provided in Ex. 1036 are based upon: (1) his qualifications and professional experience and (2) the documents he cited and considered.

Dr. Giachetti is a testifying expert pursuant to the Federal Rules of Evidence 703 and he may therefore rely on logic, judgment, and common sense as well as facts or data he has been made aware of or personally observed to render an opinion.

Fed. R. Evid. 703 (Bases of an Expert).

Patent Owner's Motion to Exclude

Ex. 1041-1044, 1046: Woodway Webpage and Documents

- Authentic under Fed. R. Evid. 901 (b)
- Self-authenticating under Fed. R. Evid. 902(6)-(7)

Opp., 10-11

WOODWAY®
For The Long Run®

4FRONT - Owners Manual



4FRONT / 4FRONT PRO / 4FRONT PRO XL

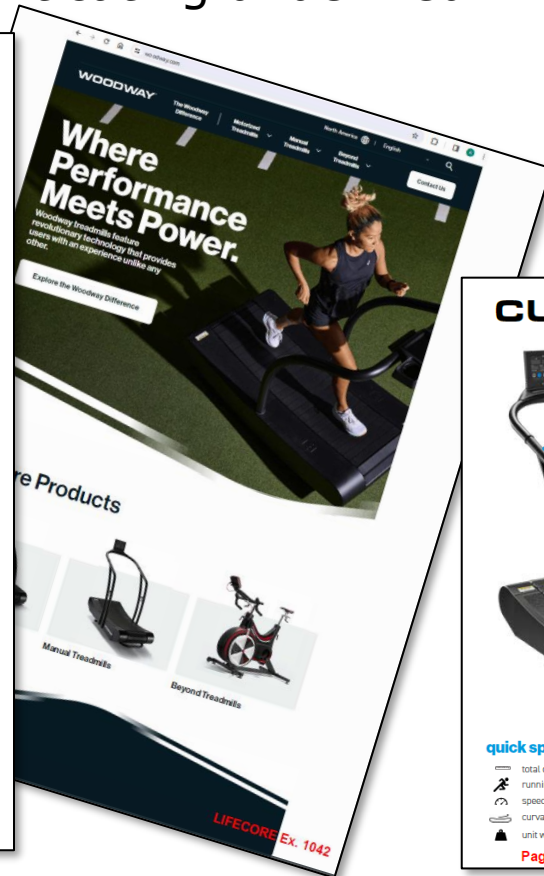
Personal Trainer and
Quick Set Models

Owners Manual
10.24.23 OM-EN-V2



woodway.com

LIFECORE Ex. 1041



CURVE

spec sheet



heads up training

WOODWAY believes in sound biomechanics. Our products are designed to reinforce proper running form while still providing you with the information needed for your workout.

true HIIT

The CURVE allows runners to get up to max effort speed quickly and efficiently. The user can then slow down to a walk or jog for a period of recovery. Working out with multiple people? No problem, plateau on and off the treadmill without needing to touch or reset anything. Move it outside, sure - it's mobile.

game changer

We created the CURVE treadmill from customer feedback and it spawned an entirely new market segment of "curve" treadmills. Our treadmill is patented, smoother, faster, more responsive and quieter. Our slat-belt and our CURVE design changed the game, period.

quick specs

- total dimensions: 67" L x 33" W x 66.5" H
- running surface: 67" L x 17" W
- speed: unlimited
- curvature: ~ 5%
- unit weight: 355 lbs.

Page 1 of 2



human powered



30% more
calories burnt



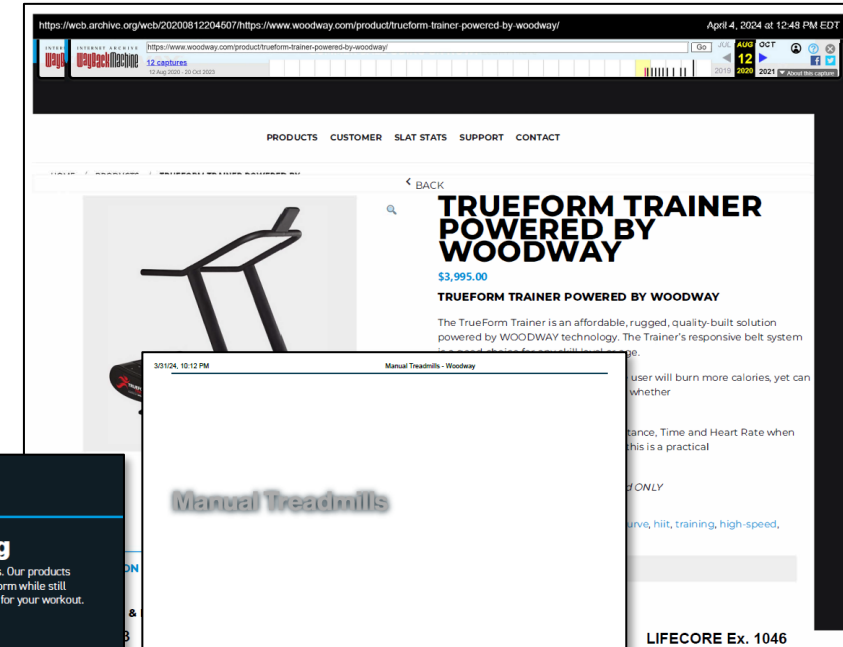
energy
efficient

WOODWAY®

W229 N591 Foster Court - Waukesha, WI - 53186 - USA

for additional information about this product visit
www.woodway.com or call 1.800.WOODWAY to talk to our team

LIFECORE Ex. 1043



Curve Series

The Curve Series is a group of non-motorized, curved, treadmills designed to deliver a unique, effective, and efficient workout experience. They rely on the user's effort to move the running surface, providing a more natural running motion that helps improve form and engage more muscle groups. The innovative design of the Curve Series makes it an unmatched tool for High-Intensity Interval Training (HIIT), run/sprint technique, and even short to middle-distance steady-state cardio. Due to the unique curvature, users burn up to 30% more calories than traditional motorized treadmills. Whether you're a seasoned athlete or a fitness beginner, Woodway's Curve treadmills offer an exceptional, user-controlled workout experience that mimics outdoor running.

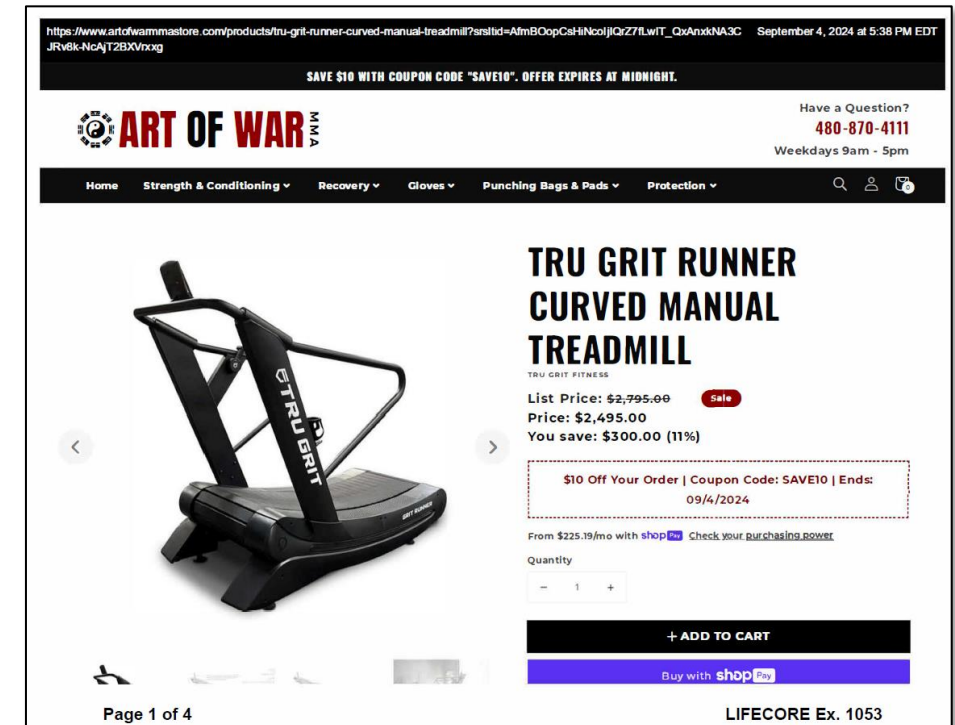
Skip to footer: intent
Page 1 of 5
https://www.woodway.com/manual-treadmills/

LIFECORE Ex. 1044

Patent Owner's Motion to Exclude

Ex. 1053: Tru Grit Runner Webpage

- Authentic under Fed. R. Evid. 901 (b)
- Self-authenticating under Fed. R. Evid. 902(7)
- Not Hearsay under Fed. R. Evid. 801



Secondary Considerations

"[S]econdary considerations of non-obviousness ... simply **cannot** overcome a strong prima facie case of obviousness."

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

"[T]o accord substantial weight to secondary considerations in an obviousness analysis, 'the evidence of secondary considerations must have a 'nexus' to the claims, *i.e.*, there must be 'a legally and factually sufficient connection' between the evidence and the patented invention.'"

Fox Factory, Inc. v. SRAM, LLC, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (internal citations omitted).

Nexus

“A showing of nexus can be made in two ways:
(1) via a presumption of nexus, or
(2) via a showing that the evidence is a direct result of the unique characteristics of the claimed invention.”

Volvo Penta of the Am., LLC v. Brunswick Corp., 81 F.4th 1202, 1210 (Fed. Cir. 2023).

1. No Presumption of Nexus

“[T]here is a presumption of nexus for objective considerations when the **patentee shows** that the asserted **objective evidence is tied to a specific product and that product is the invention** disclosed and claimed in the patent.”

WBIP, LLC v. Kohler Co., 829 F.3d 1317, 1328 (Fed. Cir. 2016) (emphasis added).

“[C]oextensiveness is a **separate** requirement.”

Volvo Penta of the Am., LLC v. Brunswick Corp., 81 F.4th 1202, 1211 (Fed. Cir. 2023) (emphasis added).

A presumption of nexus requires the product embodies the invention and is coextensive with it.

Volvo, 81 F.4th at 1211.

Patent Owner Response:

- CURVE XL – The CURVE XL treadmill offers a larger running surface than the CURVE Legacy, but for purposes of determining nexus with the Challenged Claims, is structurally the same as the other CURVE products. EX2018, ¶178.
- CURVE LTG – The CURVE LTG treadmill is a lighter duty version of the CURVE Legacy, but for purposes of determining nexus with the Challenged Claims, is structurally the same as the other CURVE products. *Id.*
- CURVE FTG – The CURVE FTG treadmill has different handrails than the CURVE Legacy and added features for providing different levels of resistance, but for purposes of determining nexus with the Challenged Claims, is structurally the same as the other CURVE products. *Id.*
- CURVE 3.0 – The CURVE 3.0 treadmill contains upgraded software and other sophisticated electronics but, for purposes of determining nexus with the Challenged Claims, is structurally the same as the other CURVE products. *Id.*
- CURVE Trainer – The CURVE Trainer has a slightly less steep curve than the CURVE treadmill. *Id.* The CURVE Trainer may provide a quieter and quicker acceleration than the CURVE treadmill but, for purposes of determining nexus with the Challenged Claims, is structurally the same as the other CURVE products. *Id.*
- EcoMill and EcoMill Legacy– The EcoMill and EcoMill Legacy each have an onboard generator system that produces power for the display and a USB charging station but, for purposes of determining nexus with the Challenged Claims, are structurally the same as the CURVE products. *Id.*

“A patent claim is not coextensive with a product that includes a ‘critical’ unclaimed feature that is claimed by a different patent and that materially impacts the product’s functionality”

Fox Factory, 944 F.3d at 1375.

’005 Patent:

may be used to provide support for the running belt. Further details regarding the structure of the running belt and endless belt structure are seen in U.S. Pat. No. 5,470,293, titled “Toothed-Belt, V-Belt, and Pulley Assembly, for Treadmills,” which is incorporated by reference herein.

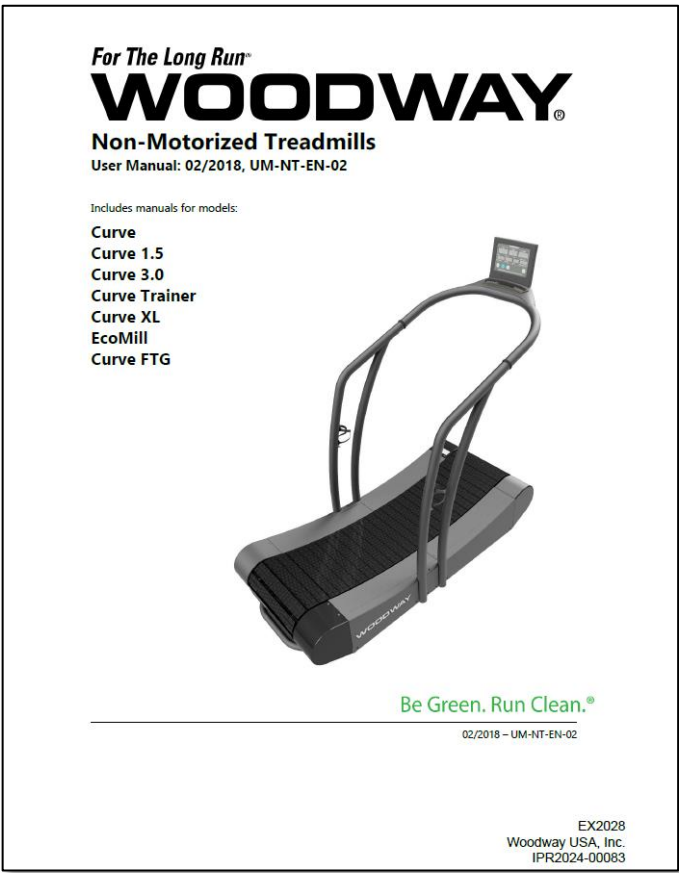
Ex.1001, 14:4-6

Woodway Curve Manual

5.3.3 Load Distribution

The bearing rail supports all bearings and guide rollers and distributes the load evenly on the running surface. Form-fitted guide rollers on the front and back prevent tracking errors and support the running surface belt; they are coupled by a toothed belt and thereby synchronized, thus making the curve possible. The individual bearings on either side also distribute the load over the entire running surface.

Ex.2028, 32



Ex. 2028, Cover

2. No showing that the evidence is a direct result of the unique characteristics of the claimed invention.

“Where the offered secondary consideration actually results from something other than what is both claimed and *novel* in the claim, there is no nexus . . .” “there must be a nexus to some aspect of the claim not already in the prior art.”

Lectrosonics, Inc. v. Zaxcom, Inc., IPR2018-01129, Paper 33, 33 (PTAB Jan. 24, 2020) (precedential) (citation omitted).

“Where the offered secondary consideration actually results from something other than what is both claimed and *novel* in the claim, there is no nexus[.]”

Lectrosonics, Inc., v. Zaxcom, Inc., IPR2018-01129, Paper 33, 33 (PTAB Jan. 24, 2020) (precedential).

POR:

The commercial success of Patent Owner’s products was based on the key features of the claimed invention. EX2020, ¶¶34-41. With the exception of the POR, 62

Lack of nexus alone is fatal to PO’s secondary considerations argument.

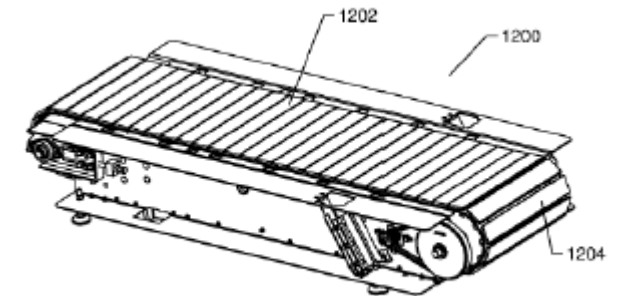
Western Union Co. v. MoneyGram Payment Sys., Inc., 626 F.3d 1361, 1372 (Fed. Cir. 2010).

Weber:

34. It is further my opinion that one factor that contributes to the commercial success of Woodway’s CURVE® Line is the use of a safety mechanism to control the unintended rotation of the running belt which results in unintended movement of the running surface (the running surface moving both toward the front of the unit and toward the back of the unit). Indeed, as explained herein, Woodway’s line of curved, manual treadmills would not be commercially successful without such a safety feature. Ex. 2020, ¶34

"[] PO has presented no evidence that its covered products are commercially successful in comparison with the competing products or that it has a large market share." Reply, 30

- **PO only offers gross sales figures**
 - *In re Huang*, 100 F.3d 135, 139, 140 (Fed. Cir. 1996) (stating "bare sales numbers" are a "weak showing of commercial success, if any")
 - *Geotab USA, Inc. v. Omega Pats., LLC*, IPR2023-00504, Paper 45, 52-54 (PTAB July 18, 2024) (finding evidence of "sales of over 900,000 units" weak without evidence of "relative market share")
- **PO does not consider the relevant market**
 - "curved, manual treadmills" v. "manual treadmills"
 - Many other curved manual treadmills in the market
- **PO's sales did not result from unique claim characteristics**



Ex.1001, Fig. 35

Industry praise was not due to the claimed invention

Weber:

Q. Are you aware of any articles that discuss the specific way in which the Woodway Curve treadmill prevents the belt from moving forward when you get off?

MS. JELENCHICK: Objection. Form.

THE WITNESS: I'm not aware of any specific articles, nor do I think we would talk about those types of features. In the end, the customers are concerned that it works and it works well. They don't necessarily worry about how those details work. I don't

Ex. 1037, 67:8-16

PO's argument fails because its evidence do not show industry praise of the safety device.

ClassCo, Inc. v. Apple, Inc., 838 F.3d 1214, 1220 (Fed. Cir. 2016) ("[M]uch of ClassCo's evidence of praise focused on conventional features in the prior art. ... [T]he Board properly discounted this and other evidence ... features that were in the prior art.").

“[C]opying requires evidence of efforts to replicate a *specific* product.”

Wyers, 616 F.3d at 1246.

- **PO’s arguments regarding “evidence” of copying:**
 - **Declaration of Director of Sales and Marketing** (Ex. 2020, ¶¶57-68)
 - *Yita LLC v. MacNeil IP LLC*, IPR2023-00173, Paper 70, 107 (“Given his position as WeatherTech’s Vice-President of Product Development, we find that Mr. Granger’s ... testimony lacks credibility, and is entitled to little or no weight.”)
 - **Petitioner’s draft manual**
 - *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004) (“[C]opying requires the replication of a specific product.”)
- **Litigation pre-dating the ’005 Patent**

No Other Objective Considerations Evidence

To show failure of others, the evidence must establish “that others skilled in the art tried and failed to find a solution for the problem” solved by applicant.

Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1540 (Fed. Cir. 1983).

“[A]bsent a showing of long-felt need or the failure of others, the mere passage of time without the claimed invention is not evidence of nonobviousness.”

Ex Parte Sansone, Appeal 2023-001331, 2023 WL 4677708, *7 (PTAB July 19, 2023).