PETITIONER LIFECORE'S DEMONSTRATIVES

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

IPR2023-00836 (PATENT 9,039,580 B1)

IPR2023-00843 (PATENT 10,561,884 B2)

IPR2023-00849 (PATENT 10,799,745 B2)

ORAL ARGUMENT: JULY 24, 2024

CONTAINS CONFIDENTIAL INFORMATION SUBJECT TO PROTECTIVE ORDER

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
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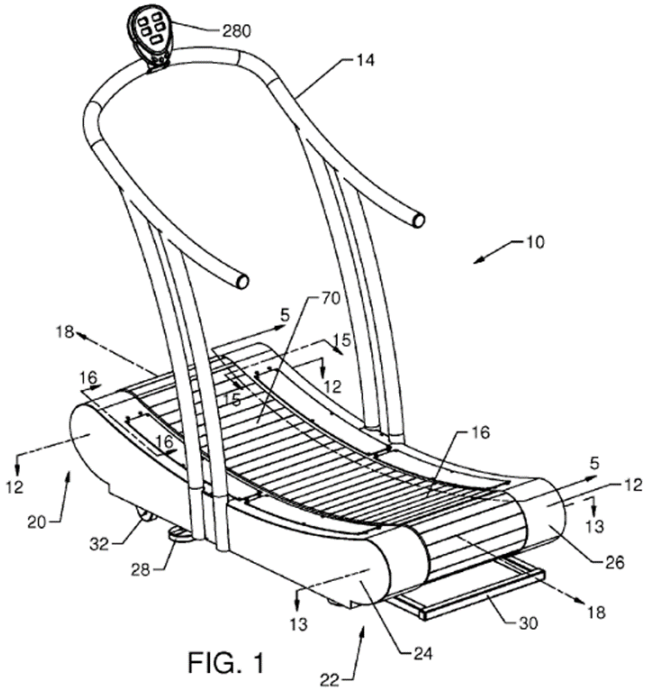


FIG. 1

836 IPR: Pet. 5-6 | 843 IPR: Pet. 6 | 849 IPR: Pet. 5-6

The Challenged Claims are Similar in Scope

Patent Owner:

Indeed, a side-by-side comparison of the '580 Patent independent claims challenged in the Petition and exemplary independent claims of the '745 Patent illustrates the relevant similarities in scope:

Challenged '580 Patent Claims (EX1001) (emphasis added)	Exemplary '745 Patent Claims (EX2003) (emphasis added)
1. A manually powered treadmill comprising: **a frame** having a front end and a rear end positioned opposite the front end; a front shaft rotatably coupled to the frame at the front end; a rear shaft rotatably coupled to the frame at the rear end; a first bearing rail having a plurality of bearings, the first bearing rail attached to a left side of the frame;	**1.** A treadmill, comprising: **a frame**; a front running belt pulley coupled to the frame; a rear running belt pulley coupled to the frame and spaced a distance from the front running belt pulley; a plurality of bearings coupled to the frame; **a running belt** at least partially supported by at least one of the front

836 IPR: POPR at 28-33

836 IPR: Pet. 7-11, Reply at 1

IPR Grounds

836 IPR / 580 Patent: (Chickering & Socwell)

Ground	Basis[2]	References	Claims Challenged
1	§ 103	Chickering and Magid	1-5, 10-11, 14, 18, and 25
2	§ 103	Chickering, Magid, and Sclater	6-9 and 12
3	§ 103	Chickering, Magid, and Sclater	1-12, 14, and 18
4	§ 103	Socwell and Magid	1-5, 10-11, 14, 15, 18, and 25
5	§ 103	Socwell, Magid, and Sclater	6-9 and 12
6	§ 103	Socwell, Magid, and Sclater	1-12, 14-15, 18 and 25

843 IPR / 884 Patent: (Schonenberger & Chickering)

Ground	Basis[2]	References	Claims Challenged
1	§ 103	Schonenberger, Socwell, Magid, and Sclater	30-34, 37-43, 45-50, 52-54, 57, 59
2	§ 103	Schonenberger, Socwell, Magid, Sclater, and Skowronski	44, 51
3	§ 103	Schonenberger, Socwell, Magid, and Sclater	30-34, 37-54, 57, 59
4	§ 103	Chickering, Magid, and Sclater	30-34, 37-39, 41, 45-49, 57, 59

849 IPR / 745 Patent: (Schonenberger & Socwell)

Ground	Basis[2]	References	Claims Challenged
1	§ 103	Schonenberger, Socwell, Magid, and Sclater	1, 4, 7-12, 14, 17-18, and 20-27
2	§ 103	Schonenberger, Socwell, Magid, and Sclater	1, 4, 7-12, 14, 17-18, and 20-27
3	§ 103	Socwell, Magid, and Sclater	1, 4, 7-12, 14, 17-18, and 20-25

*Claim Construction

836 IPR: Pet. 4, 15 | 843 IPR: Pet. 4-5, 18 | 849 IPR: Pet. 4, 14

580 Pat. Disputed Limitations: Chickering & Socwell Grounds

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

25. A method, comprising:
providing a manually powered treadmill, the manually powered treadmill having a frame with a front end and rear end;
providing a first bearing rail and a second bearing rail, the first and second bearing rails each comprising a plurality of bearings and extending longitudinally on the frame, wherein the first and second bearing rails define a curved top profile;
disposing a running belt on the plurality of bearings of the first bearing rail and the second bearing rail such that the running belt follows a top curved running surface corresponding to the curved top profile of the first and second bearing rails;
permitting movement of the running belt in a first direction; and
substantially preventing movement of the running belt in a second direction opposite the first direction.

Disputed Limitations: Chickering & Socwell Grounds

'884 Patent:

37. A manually powered treadmill, comprising:
a frame;
a first plurality of bearings coupled to the frame;
a second plurality of bearings coupled to the frame and spaced a distance from the first plurality of bearings;
a front shaft assembly coupled to the frame;
a rear shaft assembly coupled to the frame;
a running belt at least partially supported by the first plurality of bearings and the second plurality of bearings, the running belt being at least partially disposed about the front and rear shaft assemblies, and comprising a running surface, at least a portion of which is curved; and
a safety device coupled to the frame and the running belt, the safety device having a first rotatable element and a second rotatable element, wherein at least one of the first and second rotatable elements are adapted for rotation relative to the frame;
wherein one of the first and second rotatable elements of the safety device and the running belt freely rotate relative to the other of the one of the first and second rotatable elements of the safety device in a first direction of rotation relative to the frame, however, in a second direction of rotation, opposite the first direction of rotation, interference between the safety device and at least one of the first rotatable element and the second rotatable element substantially prevents rotation of the running belt and the one of the first and second rotatable elements relative to the other of the one of the first and second rotatable elements.

'745 Patent:

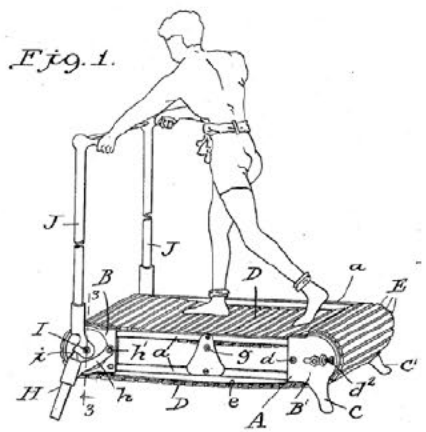
18. A method, comprising:
providing a treadmill having a frame with a front end and a rear end;
providing a plurality of bearings coupled to the frame, wherein the plurality of bearings define at least a portion of a curved top profile;
disposing a running belt on the plurality of bearings such that the curved top profile of the plurality of bearings define at least a portion of a curved running surface of the running belt;
providing a first safety race element coupled to the frame and to the running belt and a second safety race element coupled to the frame, wherein at least one of the first and second safety elements is adapted for rotation relative to the frame, and wherein one of the first and second safety race elements substantially surrounds the other of the one of the first and second safety race elements;
permitting rotation of one of the first and second safety race elements and the running belt in a first direction of rotation; and
substantially preventing rotation of the running belt in a second direction, opposite the first direction, by, at least in part, the one of the first and second safety race elements.

Overview

1. State of the Art
2. Prosecution History
3. Claim Construction
4. Chickering discloses: a) "*curved running surface*" and b) bearing rails that "*define a curved top profile*"
5. Socwell discloses: a) "*plurality of bearings,*" b) "*a running belt*" "*supported by*" the bearing rails and c) "*disposing*" a running belt "*on*" the bearings
6. Rationale to Combine (R/C) with Magid
7. R/C: Substitute Sclater for Magid
8. R/C: Modify Schonenberger in view of Socwell
9. Skowronkski discloses a pulley "*formed from an electrically insulating material*"
10. Secondary Considerations

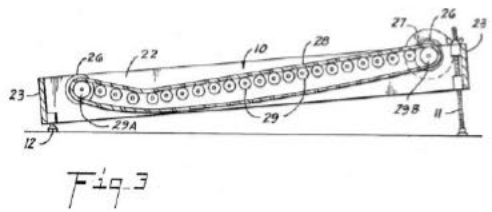
PO's manual treadmill technology was well-known

Schmidt:



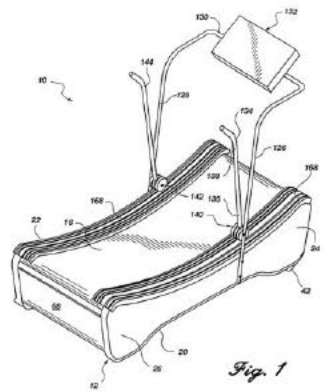
Ex. 1009, Fig. 1

Chickering:



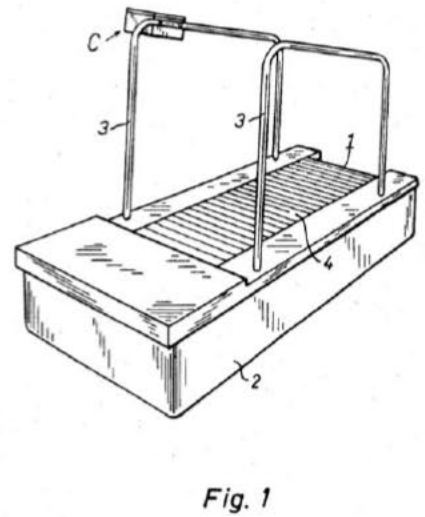
Ex. 1013, Fig. 3

Socwell:



Ex. 1011, Fig. 1

Schonenberger:



Ex. 1010, Fig. 1

836 IPR: Pet. 1, Ex. 1003, ¶¶52-57, 69 | 843 IPR: Pet. 1, Ex. 1003, ¶¶52-57, 69
849 IPR: Pet. 1, Ex. 1003, ¶¶52-57, 69

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, 1:30-33

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, 1:32-38

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

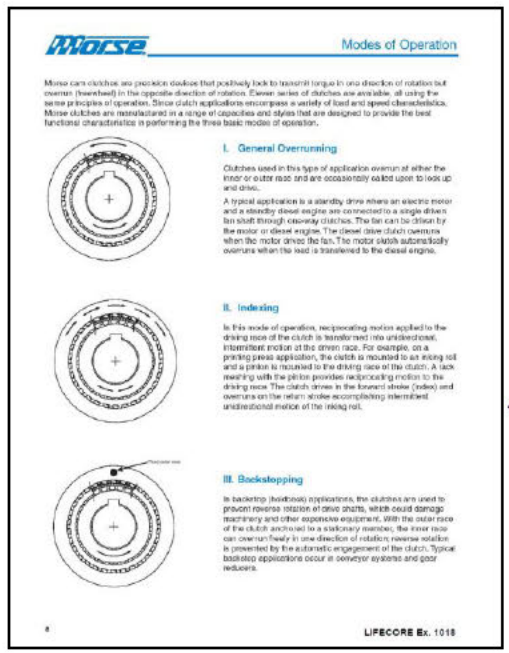
treadmill
training equipment with a unidirectional moving surface on which a walking or running activity can take place, where the feet are free to leave the moving surface Ex. 1020 at 4

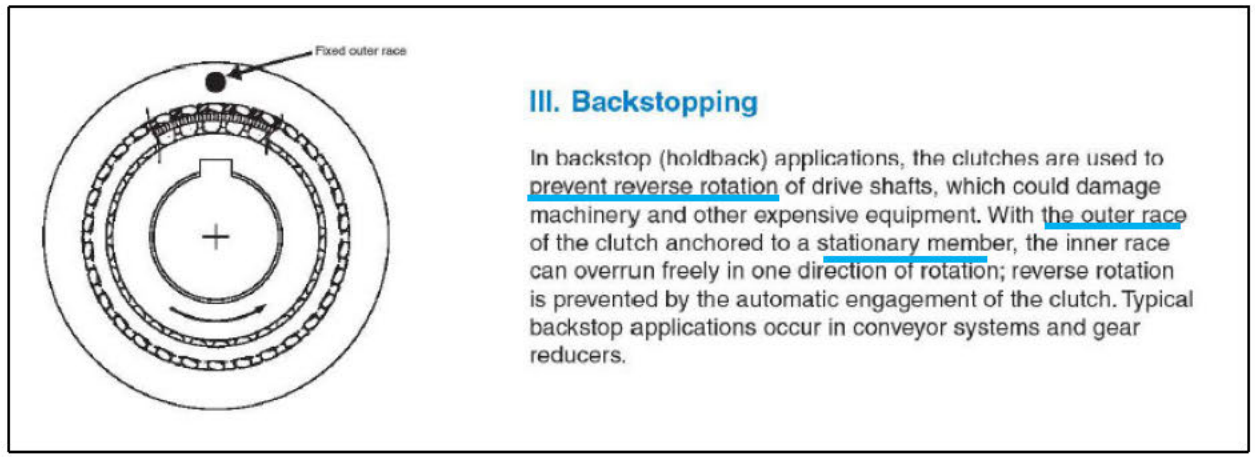
836 IPR: Pet. 2, Ex. 1003, ¶¶71-80, Reply, 15, Ex. 1036, ¶¶55-56 | 843 IPR: Pet. 2 | 849 IPR: Pet. 2

One-way bearings/clutches were also well known

Emerson:

Ex. 1018, 1, 8





Dr. Blair:

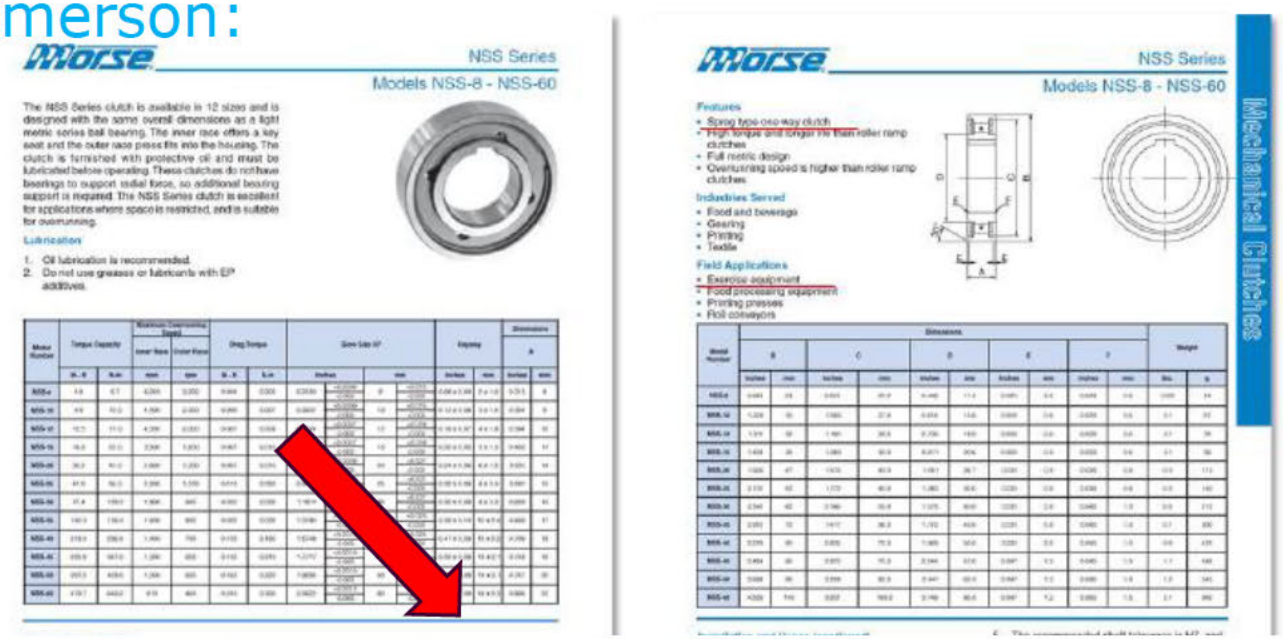
So they may use it to educate themselves on principles of operations on how they work.

Ex. 1038, 89:12-19

> "Commercially available and inexpensive sprag-type clutches . . . require less design and qualification work to implement"

Dr. Giachetti, 836 IPR: Ex. 1036, ¶69

Emerson:



Model Number	Torque Capacity		Maximum Overrunning Speed		Drag Torque		Bore Size H7				Keyway		Dimensions A	
			Inner Race	Outer Race			Inches		mm		Inches	mm	Inches	mm
	lb - ft	N-m	rpm	rpm	lb - ft	N-m								
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	0.315	8
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	0.354	9

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

836 IPR: Pet. 58, Ex. 1003, ¶¶84-91, Reply, 18 | 843 IPR: Reply, 17 | 849 IPR: Reply, 17

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, 836 IPR, Ex. 1036, ¶275

Dr. Blair:

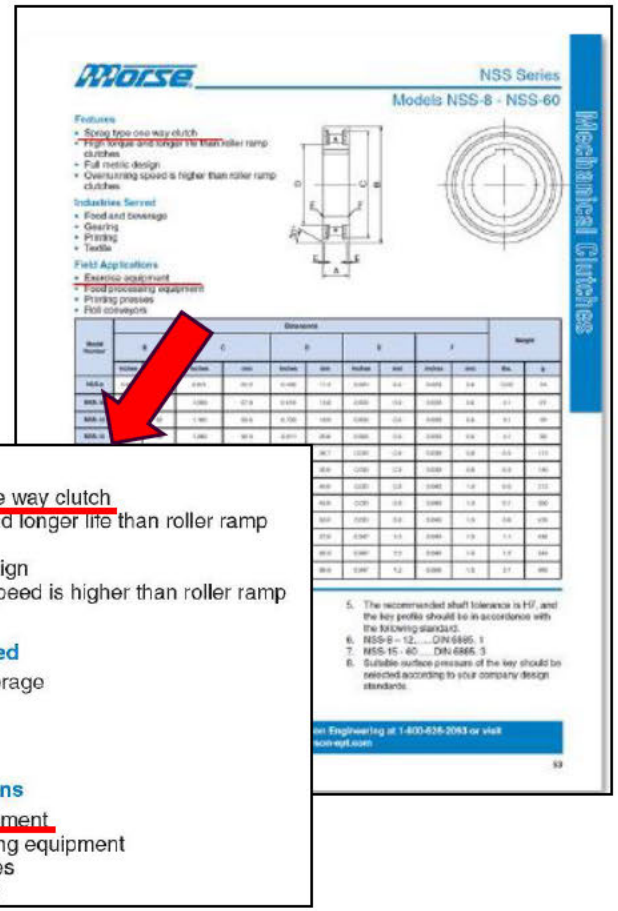
Q So based on the description on page 48 that this is serving the fitness industry and exercise equipment field applications, would a person of ordinary skill in the art have considered these one-way bearings for treadmills?

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, 89:20-90:12

Emerson:

Ex. 1018, 48



Ex. 1018, 53

836 IPR: Pet. 58, Ex. 1003, ¶¶84-91, 275, Reply, 18, Ex. 1036, ¶¶69-70
843 IPR: Pet. 13, 57-58, 94-95 | 849 IPR: Pet. 12, 52, 98-100

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. 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

836 IPR: Reply, 18, Ex. 1036, ¶¶69-70 | 843 IPR: Reply, 17 | 849 IPR: Reply, 17

Examination focused on the "safety device" limitations

580 Patent: ***Allowable Subject Matter***

The following is an examiner's statement of reasons for allowance:

* * *

1,211,765 (Schmidt). However, the prior art lacks the same in combination with a pair of bearing rails, each bearing rail comprising a plurality of bearings, the bearing rails supporting the running belt, and a safety device associated with one of the shafts to prevent that shaft and the running belt from rotating one direction while allowing free rotation in the opposite direction.

836 IPR, Ex. 1002 at 189

745 Patent: ***Reasons for Allowance***

* * *

In particular, the cited references do not disclose a treadmill as claimed, and in particular having the newly added limitations of a safety device having first and second race elements, one of which surrounds the other, the safety device permitting rotation in a first direction and preventing rotation in a second direction.

849 IPR, Ex. 1002 at 233

884 Patent:

38. (Currently Amended) A manually powered treadmill, comprising:

* * *

a safety device coupled to the frame and the running belt, the safety device having a first rotatable element and a second rotatable element, wherein at least one of the first and second rotatable elements are adapted for rotation relative to the frame;

wherein one of the first and second rotatable elements of the safety device and the running belt freely rotate relative to the other of the one of the first and second rotatable elements of the safety device ~~when the first element of the safety device rotates~~ in a first direction of rotation relative to the frame, however, in a second direction of rotation, opposite the first direction of rotation, interference between the safety device and at least one of the first rotatable element and the second rotatable element ~~of the safety device~~ substantially prevents rotation of the running belt and the one of the first and second rotatable elements relative to the other of the one of the first and second rotatable elements ~~of the safety device and the running belt relative to the frame~~.

843 IPR, Ex. 1002 at 2270-71

836 IPR: Pet. 15, 104-105 | 843 IPR: Pet. 15-16, 105 | 849 IPR: Pet. 13-14, 113-114

Claim Construction

Substantially prevent[]:

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 (580 Patent):

For the above reasons, the Court construes the claim term "safety device" in the '580 Patent as a means-plus-function claim limitation with the corresponding structure as a one-way bearing assembly, a cam locking system, a taper lock, a user operated pin system, or a band brake system with a lever.

Ex. 1033, 22

Shaft:

For the above reasons, the Court rejects Defendant's proposed construction for the term "shaft." Because it agrees with Plaintiff that the term has a widely used and unambiguous meaning, it adopts Plaintiff's proposal that the term be given its plain and ordinary meaning.

Ex. 1033, 27

Safety Device (884, 745 Patents):

Accordingly, the Court construes the term "safety device" in the '884 Patent and the '745 Patent as "a device that includes the elements recited and restricts rotation to allow for only one rotational direction of movement."

Ex. 1033, 23

836 IPR: Pet. 15-17, 61-64, DI, 21-22, Reply, 2-6
843 IPR: Pet. 18-19, Reply, 1-3 | 849 IPR: Pet. 14-16, Reply, 1-4

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)

580 Patent:

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

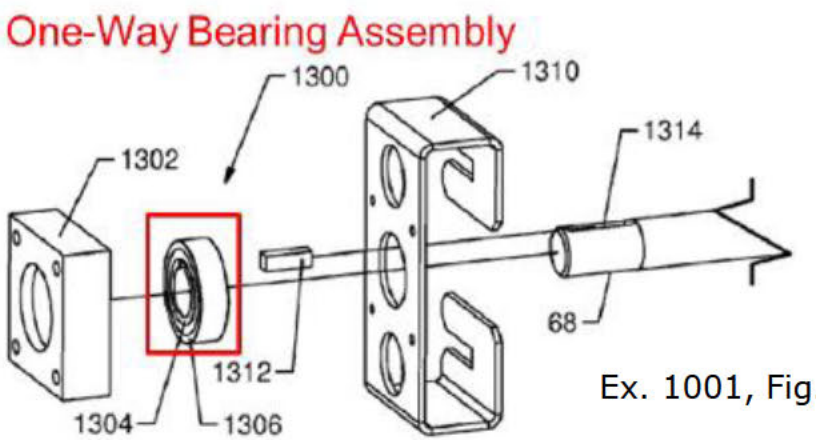
Ex. 1001, 11:58-60

580 Patent re "disposed on":

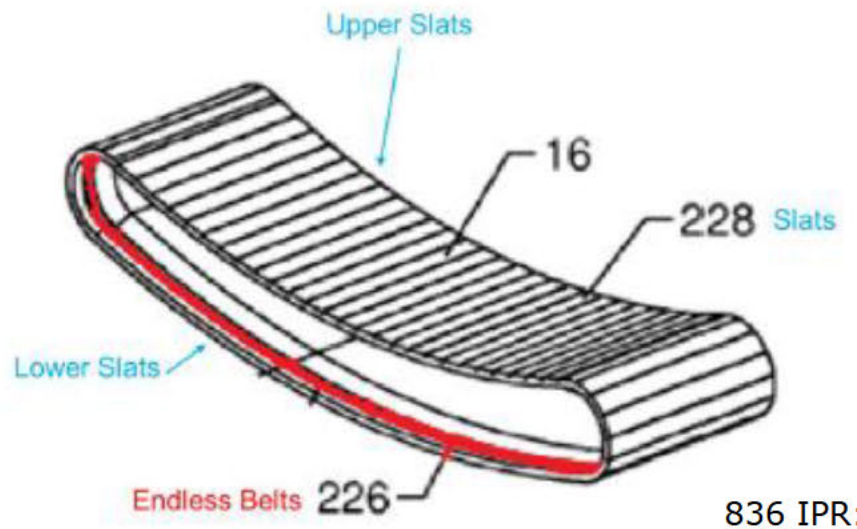
The endless belts **226** are shown disposed on opposite sides of the running belt **16**, generally interior to the outer, lateral edge of the slats **228**.

Ex. 1001, 14:6-9

580 Patent re "bearing":



Ex. 1001, Fig. 36



836 IPR: Ex. 1001, Fig. 6, Reply, 6

836 IPR: Pet. 9, Reply, 3-6 | 843 IPR: Reply, 2 | 849 IPR: Reply, 2-4

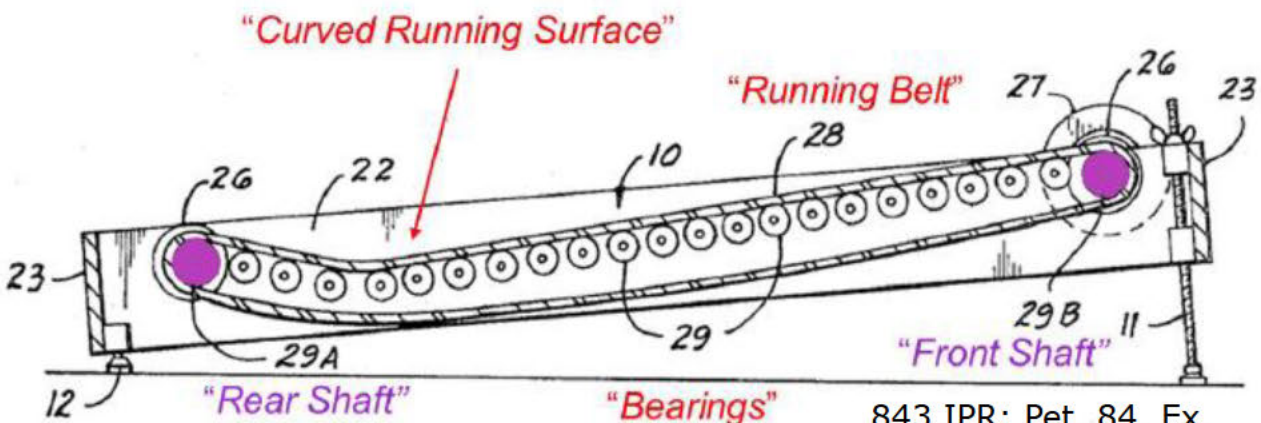
580 Pat. Claims [1.6], [11.6][b], [25.3]
884 Pat. Claims [30.5], [37.6], [57.3]

Chickering discloses a "*curved running surface.*"

Chickering:

Thus, when the endless belt 28 is placed about the rollers, it follows their contour and provides a forward accelerating area and a rear decelerating area which are inclined from the horizontal with each being lowest at their point of nearest proximity.

Ex. 1013, 3:6-10, Fig. 3



843 IPR: Pet. 84, Ex. 1003, ¶369

Dr. Giachetti:

161. Chickering discloses "a single endless belt 28" that is disposed about the rollers 29, including the front roller 29b and the rear roller 29a, which collectively form a curved running surface:

Ex. 1003, ¶161

Dr. Blair:

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

Ex. 1038, 24:23-25

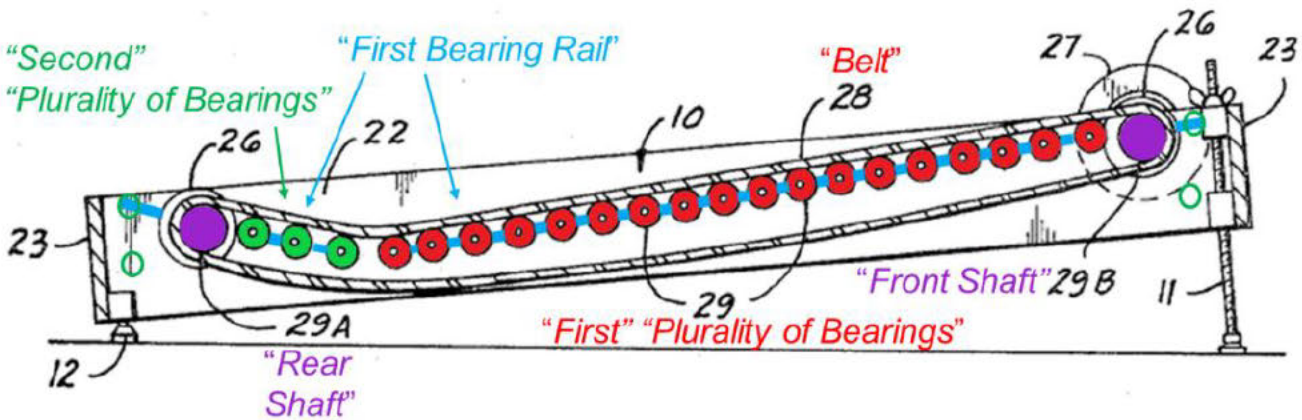
836 IPR: Pet. 32, Reply 7-9 | 843 IPR: Pet. 83-84, Ex. 1003, ¶¶368-370, Reply 3-5

Chickering discloses "first and second bearing rails [that] define a curved top profile"

580 Pat. Claim [25.2][c]

Claim 25 does not require that the bearing rails are formed in a curved shape

Dr. Giachetti:



Ex. 1003, ¶162, Fig. 3

580 Patent:

FIGS. 7*b*-7*h* illustrate the side profiles of some exemplary non-planar, contoured running surfaces according to the innovations disclosed herein, each including a front portion, a central portion, and a rear portion. Each portion has a particular geometric configuration that is concave, convex, or linear; collectively, the portions define the non-planar running surface.

FIG. 7i

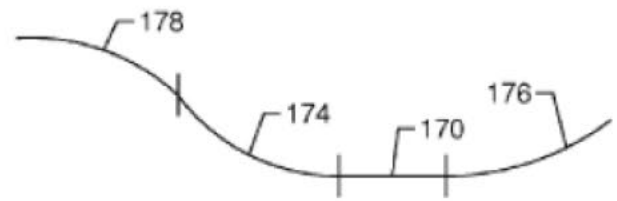
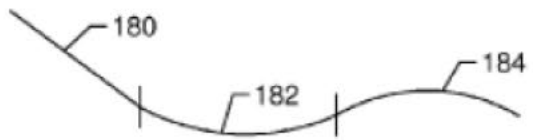


FIG. 7j



According to an another exemplary embodiment, a linear portion may replace all or a portion of the curve. Alternatively, multiple linear portions may be included in a profile of a non-planar surface.

Ex. 1001, Figs. 7i-7j, 9:26-32, 10:33-35

836 IPR: Pet. 26-34, Ex. 1003, ¶¶162, 223-225, Reply, 9-10, Ex. 1036, ¶¶29-33

Socwell discloses a "plurality of bearings"

580 Pat. Claims [1.4]/[11.4], [1.5]/[11.5], [25.2])
745 Pat. Claims [1.4], 17, 18

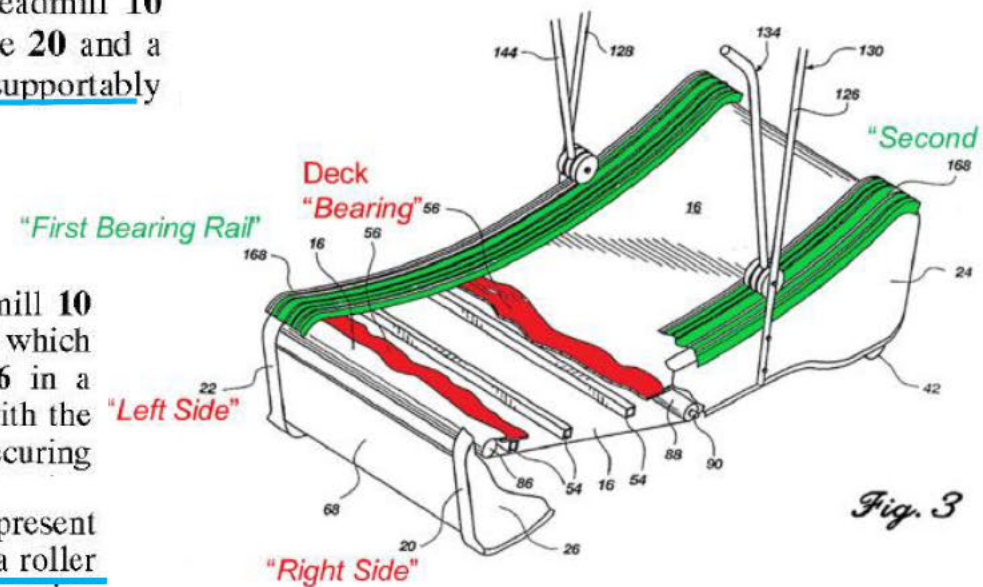
Dr. Giachetti: "[T]he rollers 98 and the deck collectively provide a '*plurality of bearings*'"

836 IPR Ex. 1003, ¶349

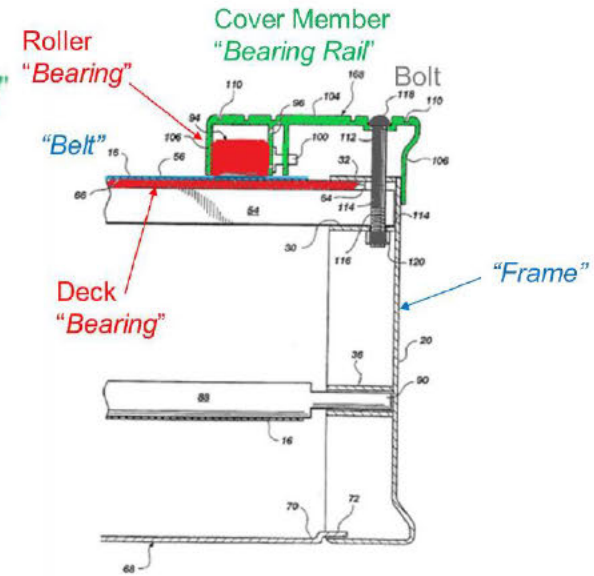
Socwell:

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



Ex. 1011, Fig. 3



Ex. 1011, Fig. 5

Referring now to FIG. **5**, the curved deck treadmill **10** may include one or more belt securing assemblies **94** which provide a means for retaining the endless belt **16** in a curvilinear configuration being substantially flush with the upper surface **66** of the deck **56**. Preferably, the belt securing

* * *

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, 10:5-9, 10:17-23

836 IPR: Pet. 70-71, Ex. 1003, ¶¶344-354, 391-392, 414-417, Reply, 10-13, Ex. 1036, ¶¶35-36
849 IPR: Pet. 76-78, 80, 109, Ex. 1003, ¶¶65-70, 396, 401, Reply 5, Ex. 1036, ¶¶19-21

Socwell discloses "a running belt" "supported by" the bearing rails

580 Patent claims [1.6], [11.6][a]

> **"The bolt that is used to fasten the cover members 168 '*bearing rails*' to the treadmill transmits the force from the frame members 168 to the belt, so that the belt is supported and held in place between the deck 56 and the rollers 98."**
>
> Dr. Giachetti, 836 IPR Ex. 1036, ¶41

Dr. Giachetti:

351. As illustrated in Figure 5 above, the right cover member 168 ("*second bearing rail*") includes a vertical side 106 disposed against the right frame side 20

* * *

18:7-10, 10:56-60.) The cover member 168 that supports the belt securing assemblies 94, including the rollers 98, is attached to the frame 12 using bolts 118. The bolts 118 may also extend through apertures formed through the deck 66 to attach the deck to the frame 12:

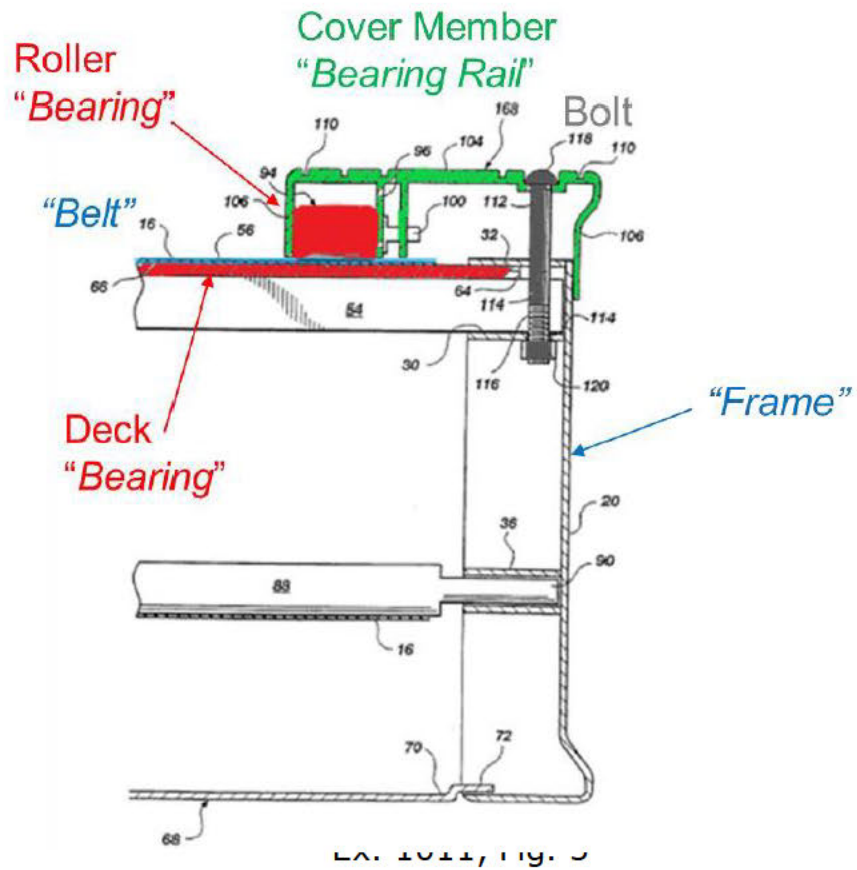
Ex. 1003, ¶351

Dr. Giachetti (Dep. Tr.):

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

Ex. 2022, 8:23-25

Socwell:



Ex. 1011, Fig. 5

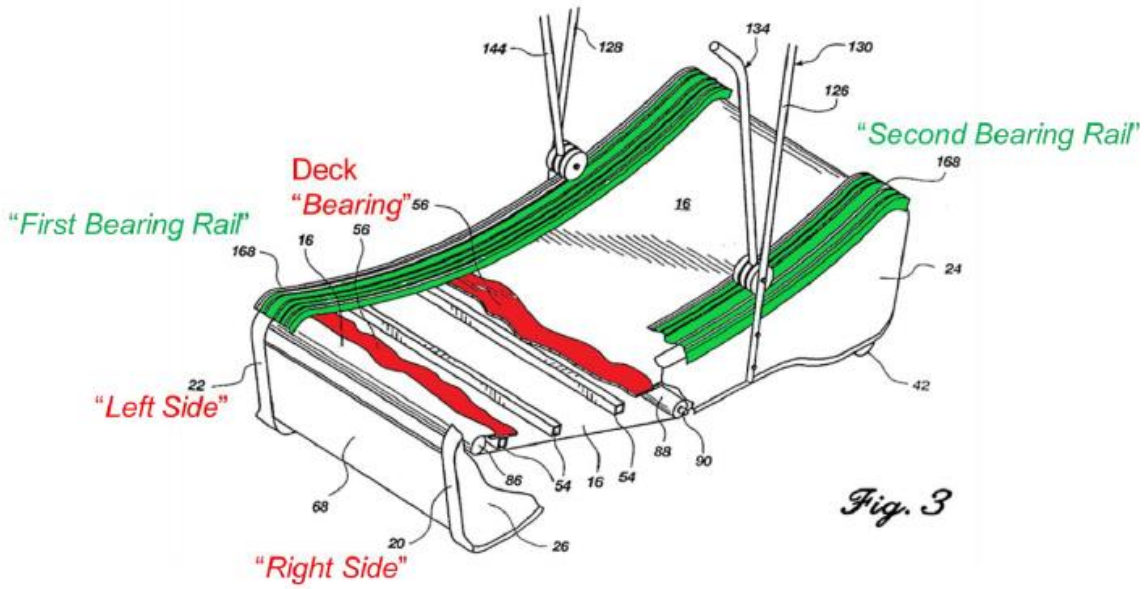
836 IPR: Pet. 75, Ex. 1003, ¶¶355-358, 422-423, Ex. 1036, ¶¶37-41

Socwell discloses "disposing" a running belt "on" the bearings

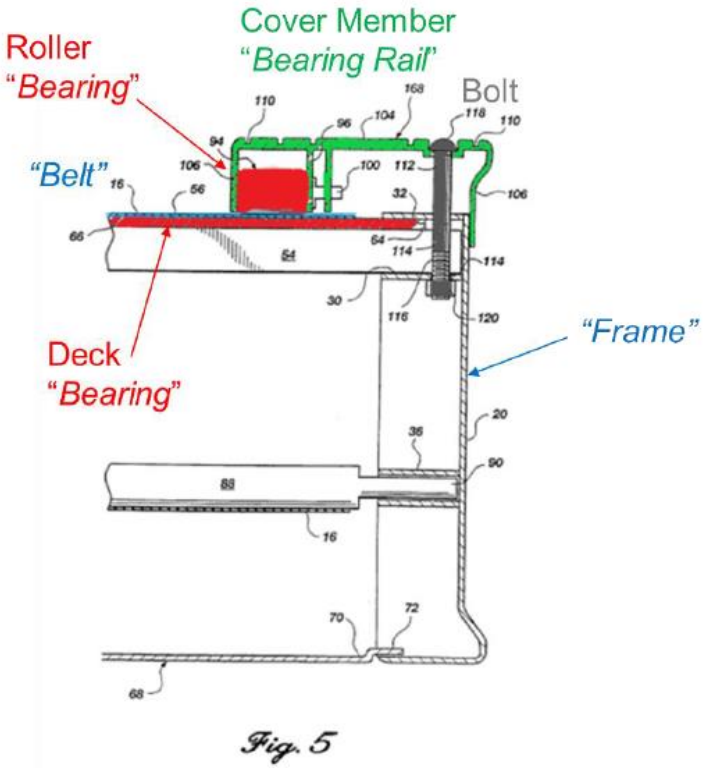
580 Pat. Claim [25.3]
745 Pat. Claim [18.3]

> The running belt is disposed on the deck 36 and rollers 98 which collectively provide the "*plurality of bearings*."

Socwell:



Ex. 1011, Fig. 3



Ex. 1011, Fig. 5

Rationale to combine Magid with Chickering, Socwell, or Modified-Schonenberger

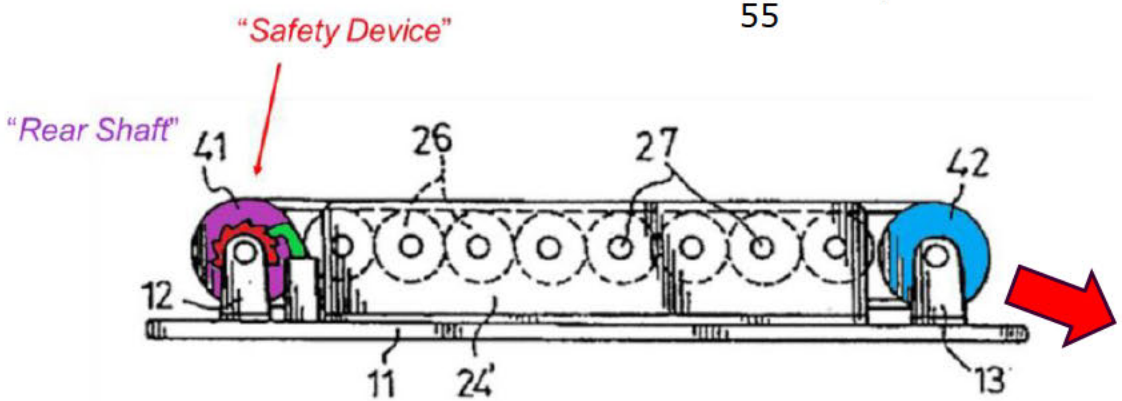
> **"It would have been obvious to a POSA to combine the manual curved treadmill disclosed in Chickering [Socwell, or Modified-Schonenberger] with the known technique of a one-way clutch to prevent belt motion in a forward direction as disclosed in Magid."**

Dr. Giachetti, 836 IPR, Ex. 1003, ¶¶230, 425 | 843 IPR, Ex. 1003, ¶¶187, 432 | 849 IPR, Ex. 1003, ¶¶175, 336

Magid:

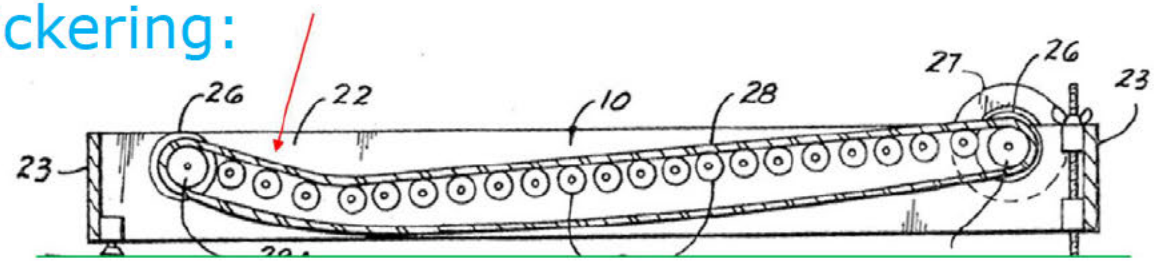
A unidirectional control means **6**, **6'** is installed to permit only unidirectional movement of the left and right foot belts **4**, **4'**. In this embodiment, the control means **6**, **6'** includes a

Ex. 1012, 4:46-55

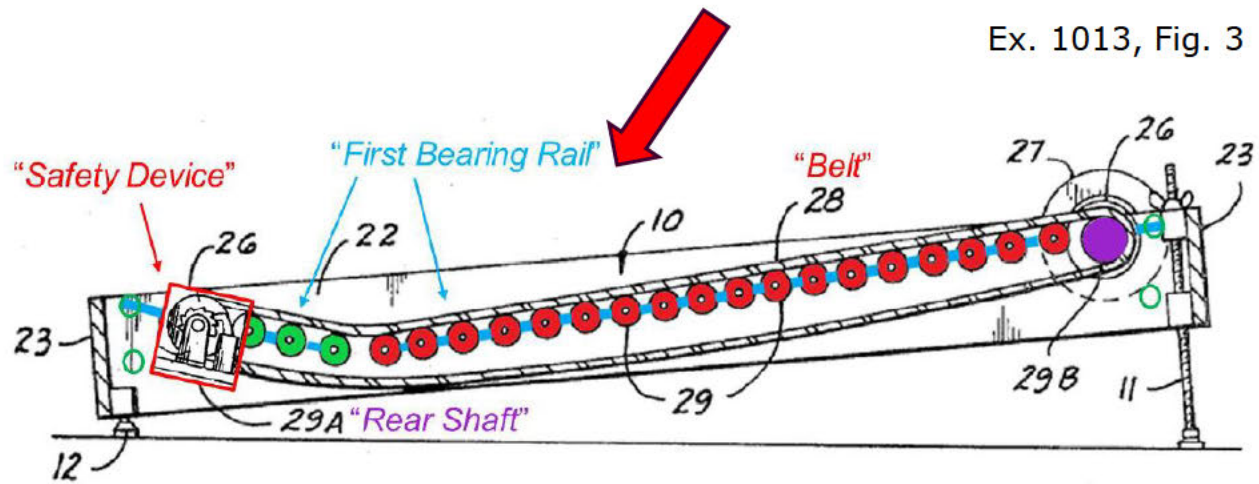


Ex. 1012, Fig. 9

Chickering:



Ex. 1013, Fig. 3



Ex. 1013, Fig. 3

836 IPR: Pet. 38-42, 80-85, Ex. 1003, ¶¶230-243, 425-437, Reply, 15-16, Ex. 1036, ¶¶48-56
843 IPR: Pet. 46-56, 85-93, Reply, 12-14 | 849 IPR: Pet. 46-57, 93-103, Reply, 13-15

Rationale to combine Sclater and Magid, with Chickering, Socwell, or Modified-Schonenberger

> "A POSA would have been motivated to substitute **Sclater**'s one-way sprag-type bearing assembly for Magid's ratchet-and-pawl one-way mechanism to obtain predictable results, e.g., reduced noise and improved durability."
>
> Dr. Giachetti, 836 IPR, Ex. 1003, ¶¶271, 465 | 843 IPR, Ex. 1003, ¶¶207, 443 | 849 IPR, Ex. 1003, ¶¶187, 348

Sclater:

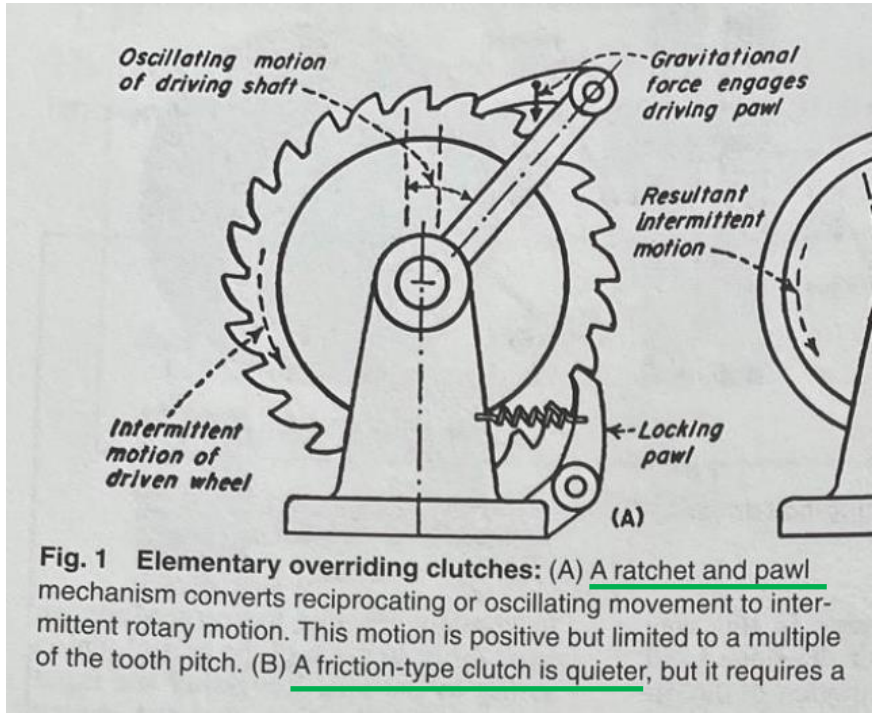


Fig. 1 Elementary overriding clutches: (A) A ratchet and pawl mechanism converts reciprocating or oscillating movement to intermittent rotary motion. This motion is positive but limited to a multiple of the tooth pitch. (B) A friction-type clutch is quieter, but it requires a

Ex. 1017 at 316

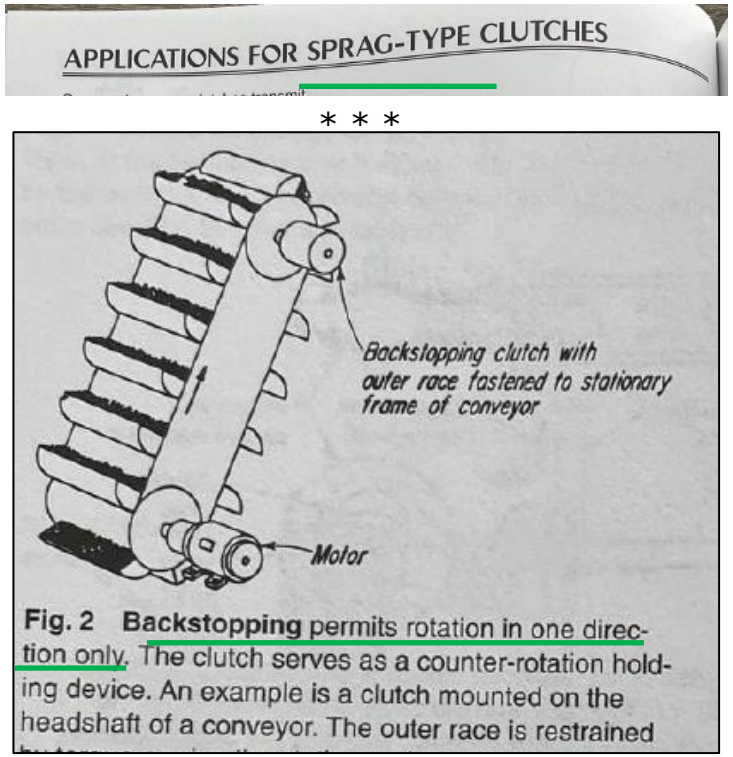
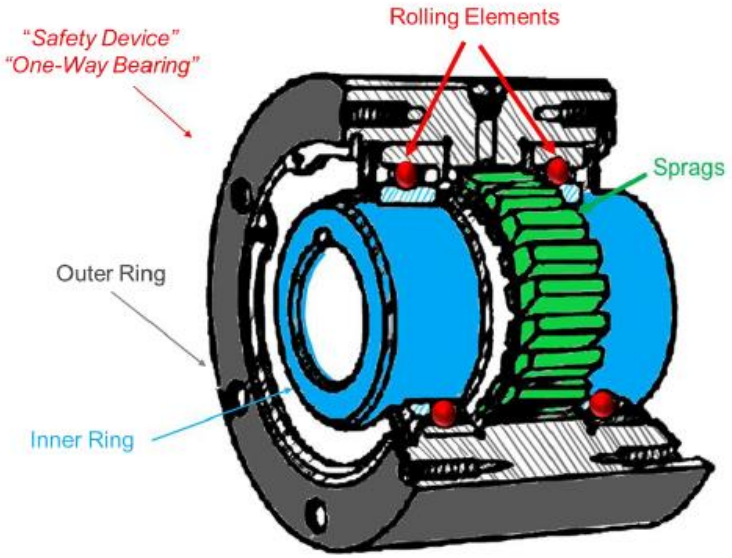


Fig. 2 Backstopping permits rotation in one direction only. The clutch serves as a counter-rotation holding device. An example is a clutch mounted on the headshaft of a conveyor. The outer race is restrained

Ex. 1017 at 320

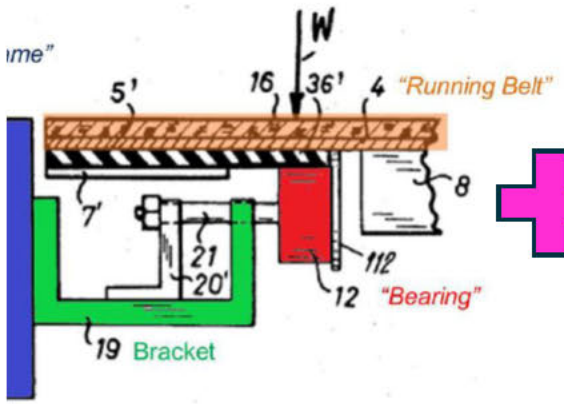


Ex. 1017 at 318

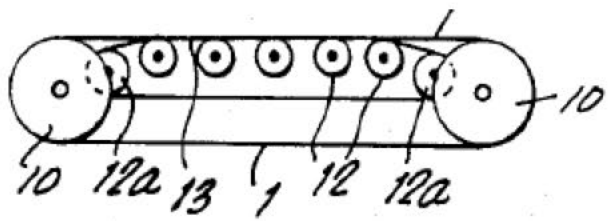
836 IPR: Pet. 56-61, 99, Ex. 1003 ¶¶ 271-278, 465-472, Reply, 16-19, Ex. 1036, ¶¶65-71 |
843 IPR: Pet. 54-61, 93-97, Reply 15-18 | 849 IPR: Pet. 50-57, 98-103, Reply 15-18

Modified Schonenberger has a curved running surface supported by rollers 12 ("*bearings*") arranged in a curved profile

Schonenberger:

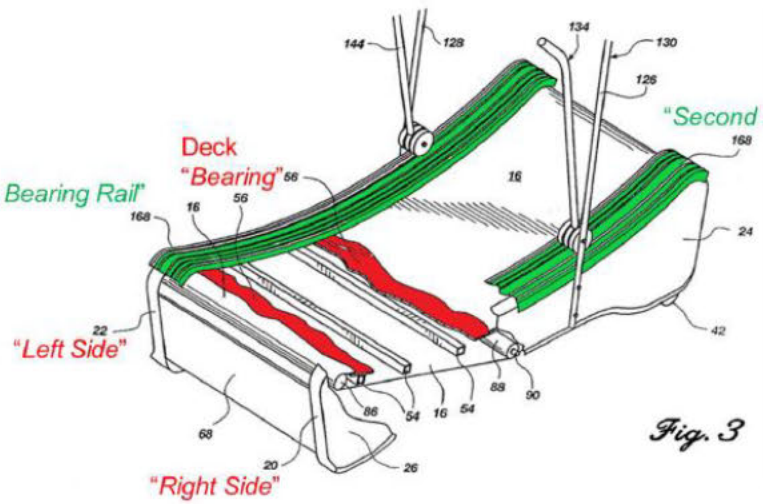


Ex. 1010, Fig. 10 (cropped)



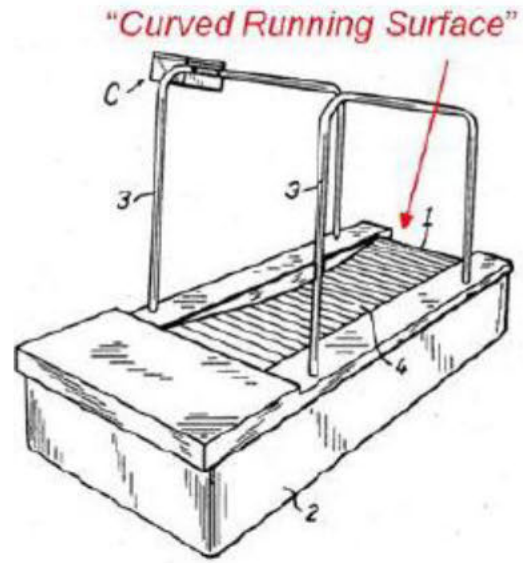
Ex. 1010, Fig. 12

Socwell:



Ex. 1011, Fig. 3

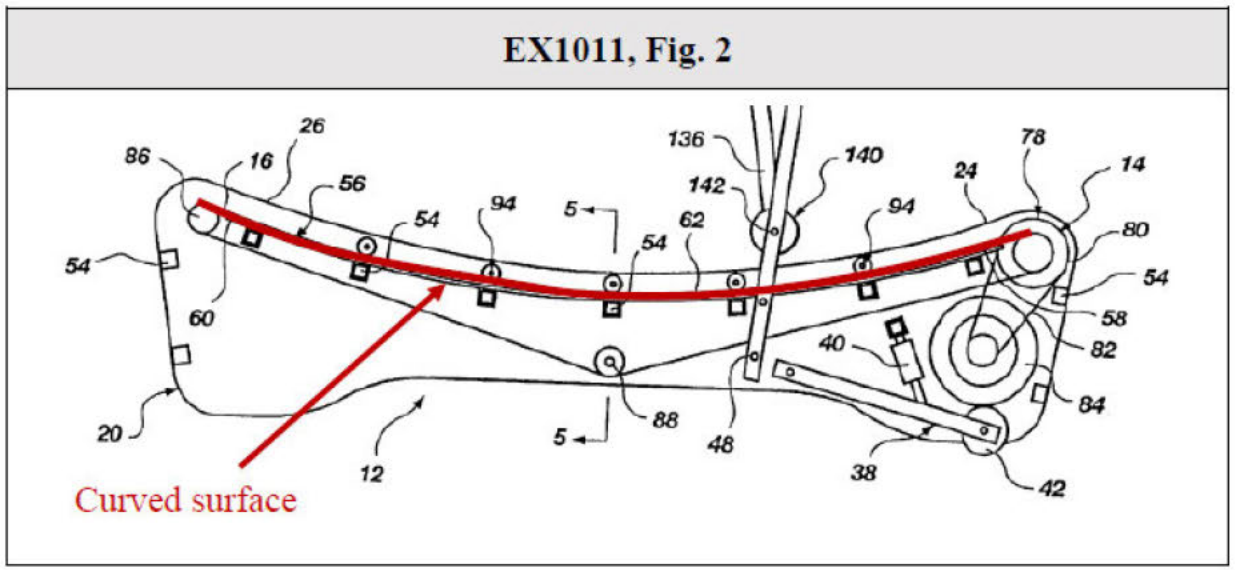
Modified Schonenberger:



Ex. 1010, Fig. 1

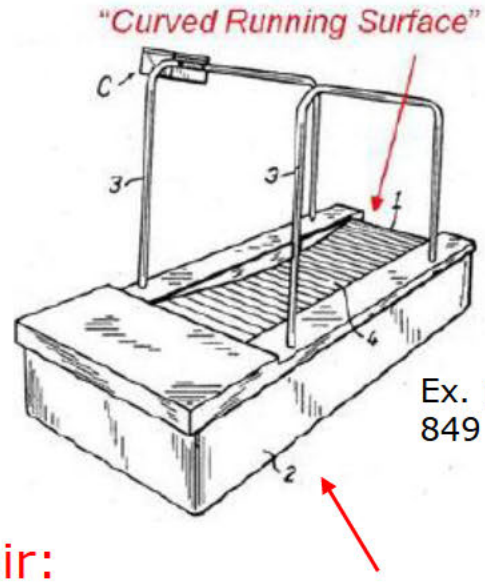
Modified Schonenberger "is actually similar in shape to . . . Socwell"

Socwell:



849 IPR, POR, 26

Modified Schonenberger:



Ex. 1010, Fig. 1 (Modified)
849 IPR Pet. 41.

Dr. Blair:

However, that surface on the left figure at the top of page 77 is actually similar in shape to the Socwell reference.

849 IPR, Ex. 1040, 44:11-13; Ex. 2018, ¶134

843 IPR: Pet. 41-46; Reply 6-8; POR, 31 | 849 IPR: Pet. 30-41; Reply 7-9

A POSA would have been motivated to "combine the flat manual treadmill topology of Schonenberger with the curved manual treadmill topology of Socwell to increase safety and reduce impact loading of the user's joints"

Dr. Giachetti, 843 IPR, Ex. 1003, ¶168 | 849 IPR, Ex. 1003, ¶148

Socwell:

It is a still further object of the present invention to provide a curved deck treadmill which substantially prevents a user from falling off the back end of the treadmill and whereby serving to keep the user centered on the upper surface of the treadmill without encumbering the natural body motion of the user exercising thereon.

Ex. 1011, 3:40-45

Socwell:

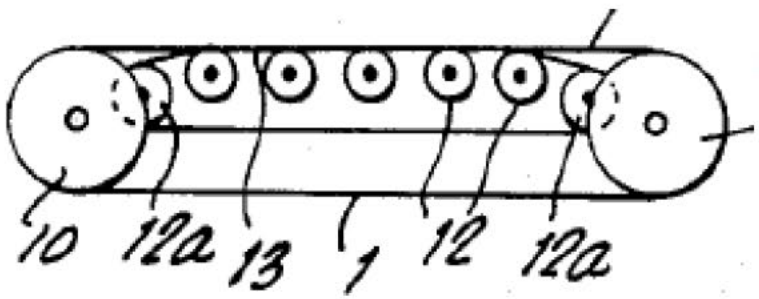
Moreover, it is an object of the present invention to provide a curved deck treadmill which is capable of reducing the physical impact to the joints and muscles (e.g., the knees and back) of a user, thus providing an operative device having rehabilitative functionality.

Ex. 1011, 3:53-57

843 IPR: Pet. 39-41; Ex. 1003, ¶¶168-173 | 849 IPR: Pet. 33-36; Ex. 1001, ¶¶148-153

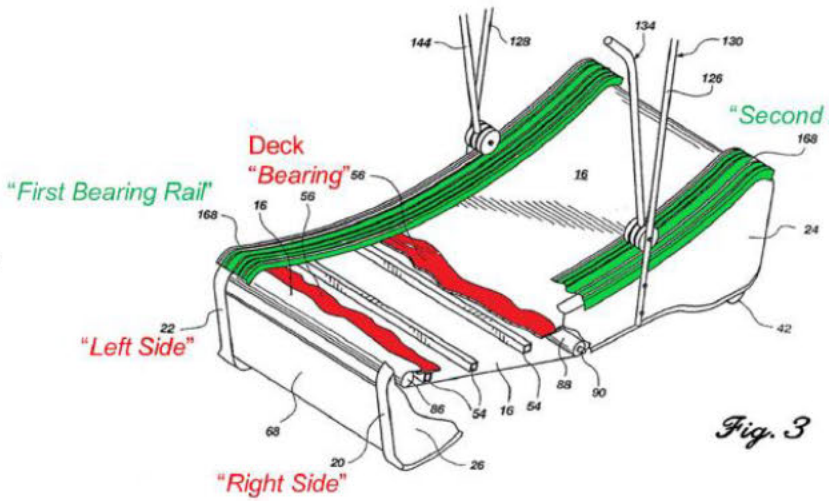
Modifying Schonenberger to be curved like Socwell is merely use of a known technique

Schonenberger:



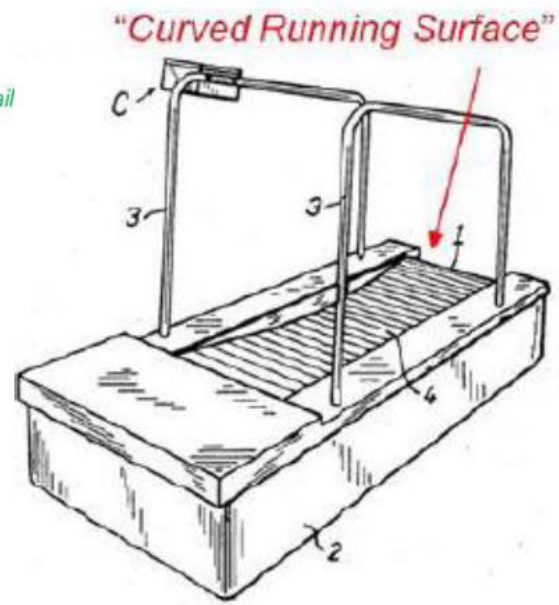
Ex. 1010, Fig. 12

Socwell:



Ex. 1011, Fig. 3

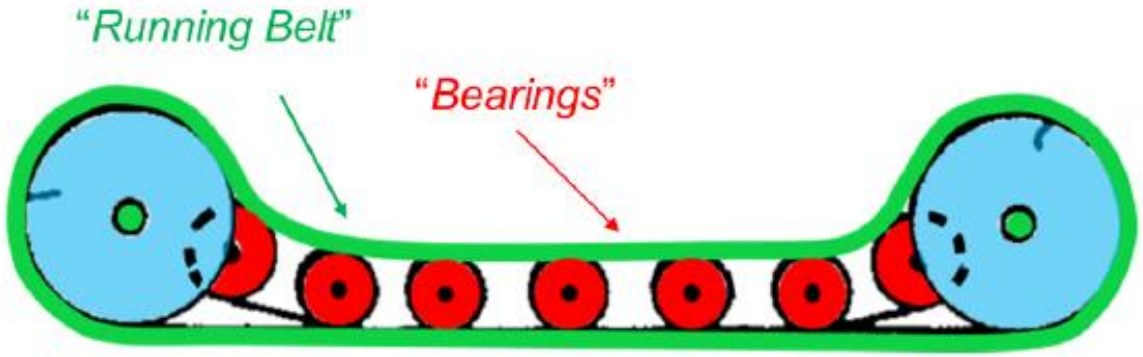
Modified Schonenberger:



Ex. 1010, Fig. 1 (Modified)

Combining Schonenberger with Socwell is not just flipping Schonenberger upside-down

Modified Schonenberger:



Schonenberger, Ex 1010, Fig. 12 (Modified)

Dr. Giachetti:

175. A POSA would have understood that lowering the rollers 12 relative to the front and rear shaft assemblies would result in a curved running surface, as shown below, and such that the movable surface 1 ("running belt") follows the profile defined by the rollers 12.

176. The movable surface 1 of Schonenberger is comprised of individual slats 4 that are relatively heavy, relatively rigid, interconnected, and movable relative to each other. As such, the movable surface 1 ("*running belt*") would conform to the profile of the supporting rollers 12. (Schonenberger, Ex. 1010, 4:38-66, Fig. 3.)

843 IPR: Pet. 41-43; Reply, 6-8; Ex. 1036, 21-22 | 849 IPR: Pet. 336-37; Ex. 1003, ¶¶155-156; Reply, 7-9; Ex. 1036, 18-20

843 IPR, Ex. 1003, ¶¶175-176

Schonenberger and Socwell are properly combinable – Annotated Fig. 12 is just a conceptual aid

Dr. Giachetti:

36. Woodway/Dr. Blair incorrectly allege that my modified Schonenberger is merely flipping the roller arrangement 12 up-side-down. (POR, 26; Dr. Blair Declaration, Ex. 2018, ¶¶136, 143.) However, my position actually was that it would have been obvious to arrange the rollers 12 curvilinearly like the curved deck 56 of Socwell:

843 IPR, Ex. 1036, ¶36

41. Woodway/Dr. Blair allege modified Schonenberger is only illustrated in Figure 12, which they argue does not correspond to Petitioner's modified Schonenberger Figure 1—i.e., merely to invert Schonenberger's rollers. (POR, 28.) But this is not accurate. First, as discussed above, the text of the petition and my original declaration explains that Petitioner's modified Schonenberger is the rollers 12 arranged like the curved deck 56 of Socwell. (Petition, 41-42; Ex. 1003, ¶174). Second, the text of my first declaration makes clear that the above annotated figure is merely a conceptual visual aid to show how Schonenberger's running belt 1 would sag to conform with the profile defined by the rollers 12. (Ex. 1003, ¶175.)

843 IPR, Ex. 1036, ¶41

843 IPR: Pet. 41-43, Reply, 6-8 | 849 IPR: Pet. 33-41; Reply, 7-9; Ex. 1036, ¶¶32 and 37

Schonenberger does not discourage curved running surfaces

Petitioner Reply:

"A reference teaches away 'when a person of ordinary skill, upon reading the reference, would *be* ***discouraged*** *from following the path set out in the reference*, or would be led in a direction **divergent** from the path that was taken' in the claim. A reference that 'merely expresses a general preference for an alternative invention but does not criticize, discredit, or otherwise discourage investigation into' the claimed invention does not teach away." *Meiresonne v. Google, Inc.*, 849 F.3d 1379, 1382 (Fed. Cir. 2017) (Emphasis added).

Gap not required for springy feel

Schonenberger:

The spacing between the upper surface of the support belt **13** and the lower surface **14** of the step slats **4** is so selected in the area, where the V-belt **13** (FIG. 7) or support belt **13** (FIG. 5) is positioned over the rollers **12**, that a small distance in the order of, for example, about ½ mm preferably is left when the surface **1** is unloaded.

Ex. 1010: 5:51-58 (cited in 849 POR, 33)

Dr. Giachetti:

52. I did not explicitly discuss a gap between the rollers 12 and belts 5' in my original declaration, but it is my opinion that a user would not perceive the presence or absence of a 0.5 mm gap, especially in my proposed curved arrangement of modified Schonenberger. 843 IPR, Ex. 1036, ¶52

Schonenberger:

These support rollers are formed with lateral flanges; for example, they may be in the form of a V-belt pulleys, and have at least one separate V-belt which is looped about the end support rollers and which is preferably spaced from the inner surface of the upper run of the endless movable surface, when unloaded, by a distance of for example about ½ cm in the area of the support rollers to prevent noise, which is otherwise caused by hits of the

Ex. 1010: 2:25-33
(cited in 843 IPR: Surreply, 13, 849 IPR: Surreply, 14)

FIG. **10** illustrates the belt **5'** in engagement with roller **12**, that is, the condition when the slat **4** is loaded, for example by the weight of a user symbolically indicated by weight arrow W. When unloaded, rollers **12** and belt **5'** are partially spaced.

FIG. **10***a* shows roller **12** supporting the belt. Lateral toothed or ribbed sections **7'**, on either side of the roller **12** prevent lateral dislocation of slat **4**.

Ex. 1010: 8:58-65;
(cited in 843 IPR: Surreply 13, 849 IPR: 14)

843 IPR: Reply 11-12, Surreply, 13 | 849 IPR: Reply 11-12, Surreply, 14

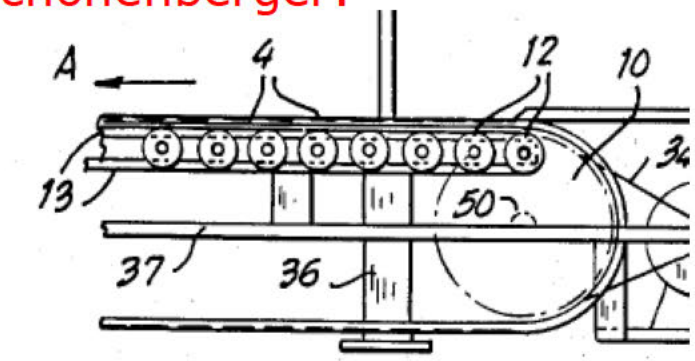
Modified Schonenberger does not destroy intended function – Petitioner accounted for the slat-type belt

Dr. Giachetti:

The slats 4 are also designed for relative movement. (*Id.*, 5:54–56.) For example, the slat-style belt is able to tightly curve at the drums 10, which is a much tighter radius than the curved running surface of my proposed modification. A POSA would have recognized the movable surface 1 of Schonenberger as being suitable for a curved running surface. (Ex.1003, ¶176.) For example, Schmidt, which I described in my background section of my first declaration disclosed a track-style curved belt like the Schonenberger embodiments I relied upon in my analysis. (Ex. 1003, ¶62; Schmidt, Ex. 1009, 1:50-59.)

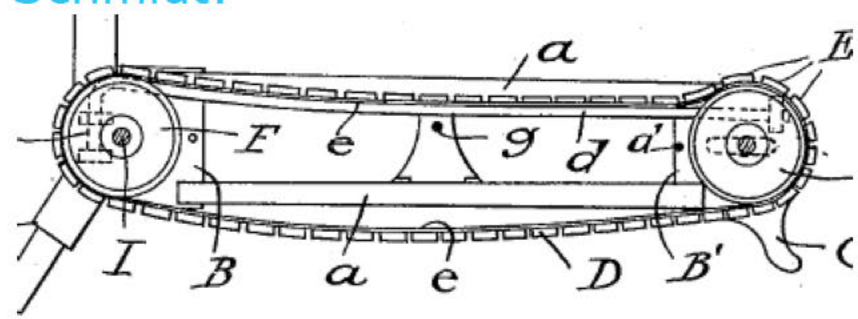
843 IPR, Ex. 1036, ¶ 47

Schonenberger:



Ex. 1010, Fig. 2 (cropped)

Schmidt:



Ex. 1009, Fig. 2 (cropped)

Skowronski's plastic pulley is an electrically insulating material

Skowronski:

Pulleys **22** and **28** are also preferably of a molded plastic construction. Suitable materials from which pulleys **22** and **28** can be molded include glass-filled polypropylene, polystyrene, polycarbonate, polyurethane and polyester.

Ex. 1030, 7:49-52

Dr. Giachetti

81. I previously opined, "[a] POSA would have understood that plastic is electrically insulating." (Ex. 1003, ¶302; Ex. 2024, 142:5–8, 144:14–22.) This aligns with the specification of the '884 Patent, which discloses plastic as an example electrically insulating material. ('884 Patent, Ex. 1001, 5:61–64.)

Ex. 1036, ¶81

884 Patent:

According to another embodiment, the front and rear running belt pulleys **62**, **66** are formed of a glass-filled nylon, for example, Grivory® GV-5H Black 9915 Nylon Copolymer available from EMS-GRIVORY of Sumter, S.C. 29151, which may save cost and reduce the weight of the pulleys **62**, **66** relative to metal pulleys. To prevent a static charge due to operation of the treadmill **10** from building on a pulley **62**, **66** formed of electrically insulative materials (e.g., plastic, composite, etc.), an antistatic additive, for example Antistat 10124 from Nexus Resin Group of Mystic, Conn. 06355, maybe may be blended with the GV-5H material.

Ex. 1001, 5:56-67

843 IPR: Pet. 70-75, Ex. 1003, ¶¶300-316, Reply, 18-19, Ex. 1036, ¶¶80-85

> **"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.

836 IPR: POR, 59

Weber:

9. Part of Woodway's innovative technology in the CURVE® Line, and what makes it commercially viable due to safety and hazard considerations associated with falling, is the incorporation of a safety device wherein the curved running surface is substantially prevented from being capable of moving in two directions – the intended direction and the reverse direction. T

Ex. 2020, ¶9

Weber:

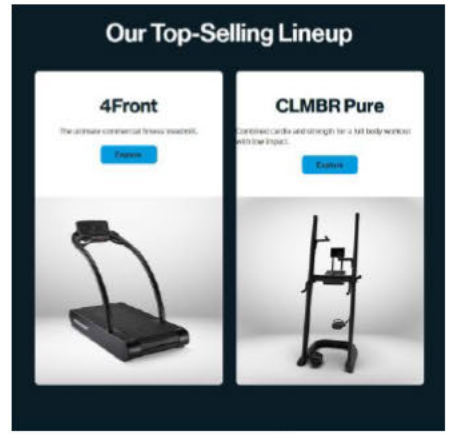
34. It is further my opinion that one factor that contributes to the commercial success of Woodway's CURVE® Line is the use of a safety mechanism to control the unintended rotation of the running belt which results in unintended movement of the running surface (the running surface moving both toward 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

836 IPR: Reply 19-20 | 843 IPR: 19-20 | 849 IPR: 18-19

PO's sales did not result from unique claim characteristics

Ex. 1042, 2



PO's Website:

Manual Treadmills

* * *

Curve Series

The Curve Series is a group of non-motorized, curved, treadmills designed to deliver a unique, effective, and ef cient 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 tness beginner, Woodway's Curve treadmills offer an exceptional, user-controlled workout experience that mimics outdoor running.

* * *

Curve

The essential non-motorized curved treadmill.

Explore

Curve LTG

Light on weight, not performance.

Explore

Curve Trainer

Build endurance and increase stamina with a lower incline for longer workouts.

Explore

Ex. 1044, 1-2

PO's 4Front Treadmill:

5.4 Dynamic Mode (Overview)

⚠ WARNING 013

Do Not Leave Treadmill Unattended While in Dynamic Mode!

If the treadmill is left unattended while in dynamic mode, there is a possibility of personal injury from people stepping onto device while assuming the running surface is locked.

- Never leave treadmill unattended while in dynamic mode.
- The running surface runs completely free in both directions and is no longer slowed by the motor.
- Always keep children and animals clear of the treadmill while in dynamic mode.

The treadmill makes it possible that the user serves as the running surface belt drive. The user drives the running surface belt manually during training. This is known as "Dynamic Mode"

Ex. 1041, 29

> **PO's drop in sales of the Curves can be linked to selling a cheaper alternative (Trueform) side-by-side with the Curve on its website**

Industry Criticism:

TreadmillReviews.com

Best Treadmills + Treadmills By Price + Top Brands + Best Exercise Bikes + Best Ellipticals + About +

The Woodway Curve

August 9, 2012 by Treadmill Reviews

* * *

Conclusion

The Woodway Curve is a remarkable treadmill because, if for no other reason, it has no motor and still provides the user with a great workout which is what all treadmills want to do. It's too bad the Curve costs 8,000 dollars because were it affordable, I would have one in my house right now.

Ex. 2050, 1,3

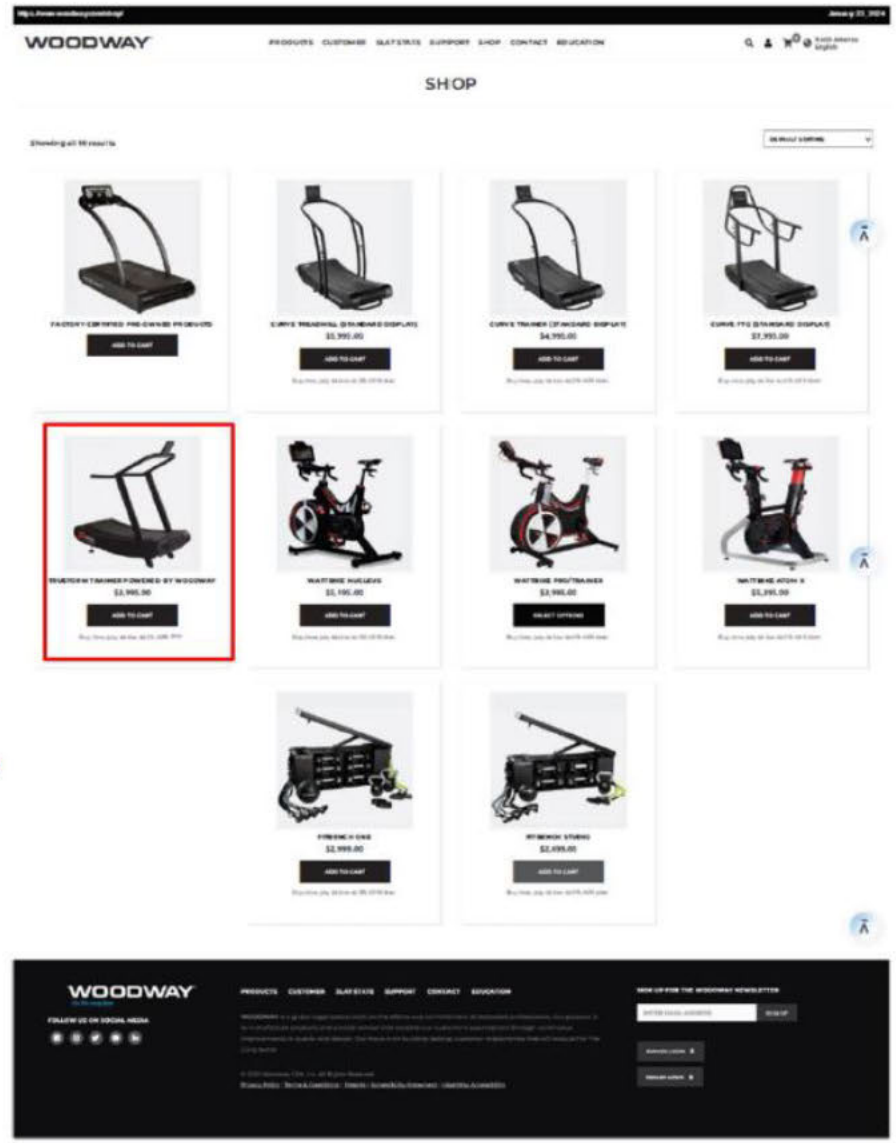
latimes.com

* * *

Dislikes: Twice the price of a great conventional motorized treadmill. The console readouts, which include time, speed, calories, pulse and mileage, are too small.

Ex. 2052, 1

PO's Website:



Ex. 2039 (Annotated) (Printed January 23, 2024)

Industry praise was not due to the claimed invention

836 IPR: Reply 29-30 | 843 IPR: Reply, 30-31 | 849 IPR: Reply, 28-29

CONTAINS CONFIDENTIAL INFORMATION SUBJECT TO PROTECTIVE ORDER

> "[R]eference to Woodway Customer Service in Ex. 2071 is irrelevant, because statements regarding customer service are not 'evidence of efforts to replicate a specific product.'"

836 IPR: Reply at 33 quoting *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010).

836 IPR: Reply, 30-33 | 843 IPR: Reply, 31-35 | 849 IPR: Reply, 29-33