UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v

WOODWAY USA, INC.,
Patent Owner.

US PATENT NO. 11,465,005 to Bayerlein, et al
Case No. IPR2024-00083

DEPONENT: KIM BLAIR, PhD
DATE: Monday, October 21, 2024
TIME: 10:31 a.m.
LOCATION: VIA ZOOM VIDEOCONFERENCE
REPORTER: Karen Fortna, CRR/RMR/RPR/CSR-5067
JOB NO: 33945

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LIFECORE Ex. 1050

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I N D E X

W I T N E S S

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E X H I B I T S

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Monday, October 21, 2024
Via Zoom videoconference
10:31 a.m.

* * * *

KIM BLAIR, PhD,
having first been duly sworn, was examined and testified as follows:

(All participants appearing via Zoom videoconference.)

MR. KONZ: Good morning, Dr. Blair.My name is Kyle Konz and I will be deposing you today on behalf of Petitioner LifeCORE Fitness.

How are you this morning?

THE WITNESS: I'm good. Thank you.

EXAMINATION

BY MR. KONZ:

Q. Do you know why you're here today?

A. I do.

Q. And why are you here today?

A. I am here to be deposed relative to my report for IPR2024-00083.

Q. And the patent that's being challenged, is that US Patent No. 11,465,005?

A. Yes.

Q. And how did you prepare for your deposition today?

A. I reviewed the report or the declaration that I

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submitted, I reviewed the declaration that Dr. Giachetti submitted, some of the exhibits, the patents, prior art, other documents and exhibits associated with this case.

Q. Did you meet with anyone to discuss your deposition today?

A. Just attorneys from Foley.

Q. Did you meet with anybody else?

A. No.

MR. KONZ: Okay. I would like you to please pull out your expert report, which is Exhibit 2018.

(Marked for identification: Deposition Exhibit No. 2018.)

BY MR. KONZ:

Q. It looks like you have a binder there?

A. Yes.

Q. And it looks like you have a couple other binders as well. What are those?

A. Yeah. So in like soft spiral wrap, I have my declaration, Exhibit 2018, I have Dr. Giachetti's declaration, Exhibit 1003, I have the petition for inter partes review, and then the binders include the patent owner's exhibits for this and the other binder is the petitioner's exhibits for this.

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Q. Do any of those binders contain any documents or evidence that are not part of the record in this IPR?

A. No.

Q. Are there any notes or hand markings on any of the documents in any of your binders?

A. These binders were here when I got here this morning. I have not gone through absolutely every page, but I doubt it. They should all be clean copy.

Q. Let's please turn to your expert declaration. You prepared this expert declaration on behalf of the patent owner, correct?

MR. CARROLL: Objection. Form.

THE WITNESS: That's correct; that's correct.

BY MR. KONZ:

Q. And does this Exhibit 2018 accurately reflect your opinions in this case?

A. It does.

Q. Would you please turn to the last page of your declaration?

A. (The witness complies.)

Q. Is that your signature on the signature block?

A. Yes, it is.

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Q. And you signed it?

A. I did.

Q. And in preparing this declaration, which documents did you consider?

A. On page 9 of this declaration, Section 2, "Materials Considered," there's a list of exhibits that were considered here for this declaration.

Q. And is this list a complete list of the documents that you considered?

A. Yes.

Q. Are any of your opinions expressed in your declaration based on documents that are not listed on pages 9 through 11?

(Alarm interruption.)

(Discussion off the record.)

BY MR. KONZ:

Q. So Dr. Blair, are any of your opinions expressed in your declaration based on documents that are not listed on pages 9 through 11 of your report?

A. No.

MR. KONZ: Okay. Let's please pull out Exhibit 1001, which is the '005 patent.

THE WITNESS: Okay.

(Marked for identification: Deposition Exhibit No. 1001.)

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BY MR. KONZ:

Q. What is Exhibit 1001?

A. It is a patent that describes a curved manual treadmill.

Q. Did you read that patent in full?

A. Yes.

Q. Did you read it multiple times?

A. Yes.

Q. Do you feel that you have a full understanding of that patent?

A. I do.

Q. Can you please flip to Figure 1?

A. Okay.

Q. In Figure 1, you see a curved treadmill perspective view. Does that treadmill have a running belt?

A. It does.

Q. And is there a callout for the running belt?

A. Column 4 of the description, of the specification.

Q. And in -- sorry.

A. Yeah, line 53 says, "includes a running belt 16."

Q. Okay. Would you please turn to Figure 4? I'm sorry, Figure 6. Does Figure 6 -- let me know when you're there. I'm sorry.

A. That's okay. Okay.

Q. Does Figure 6 show the running belt 16?

A. It does.
Q. What is the structure of that running belt?
A. There we go. I knew it was here somewhere. Column 13 of the specification of the '005 patent, starting at line 52, it says, "Further referring to Figures 5, 6 and 8 through 11, the preferred embodiment of the running belt is shown including two reinforcing belts shown as endless belts 226 and a plurality of slats 228 according to an exemplary embodiment. The endless belts 226 are configured to provide support for the running belt 16 in order to support the weight of a user. 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. The endless belts 226 are themselves reinforced and thus help stabilize the sides of the running belt and help prevent stretching of the running belt 16."
Q. Dr. Blair, after reading that passage, is the running belt 16 a single unitary component?
A. No, it talks -- it says running belt 16 includes two reinforcing belts and the plurality of slats.
Q. Would a skilled artisan consider the running belt 16 to be an assembly given that it's formed in

multiple components?
A. Yes.
Q. Is it your understanding from the passage that you just read that the endless belts 26 are a separate component than the slats 28 which are then joined together to form the overall belt 16?
A. Endless belt 226 and slats 228, yes.
Q. Does the '005 patent explain how the slats are joined to the belt 226? I can refer you to column 15 if it's helpful.
A. Thank you. Column 15, line 2. "Each slat 228 is coupled at its ends 252, 254 to the second portions 232 of the endless belts 226 using fasteners."
Q. Is a rivet a type of fastener?
A. Yes.
Q. Is a rivet a commonly used fastener for this type of belt assembly in your experience?
A. I wouldn't necessarily know how common it is, but it wouldn't be unexpected.
Q. What would be the advantages of using a rivet as opposed to a bolt?
A. Well, once a rivet is placed, there's not going to be -- like to use a bolt, there's usually a nut or something there that has to go with it and they can

loosen up over time. A rivet won't loosen up over time, but the drawback of a rivet is the fact that if there's wear in the joint, the joint itself can loosen over time; you can't go back and do anything to tighten it up.
Q. Is there any advantages to the head of the rivet versus the head of the bolt?
A. Not necessarily. I mean, carriage bolts, for example, have a flat head -- not a flat head, but a low contour rounded head, much like the top of a rivet, so it depends on the type of bolt.
Q. So if you were going to use a fastener in a belt assembly like belt 16, you would want some sort of head that was less obstructive than other types, such as the hex head that you just referred to?
A. Certainly if the top end of the fastener is exposed and not underneath something else.
Q. Let's go back to Figure 1, please.
A. Okay.
Q. Do you see a callout No. 70?
A. Yes.
Q. What does No. 70 signify? I would point you to column 6 as well.
A. I just got there. Thank you.
Column 6, line 14 -- line 16 and 17,

"Non-planar running surface 70."
Q. And when they say running surface, they mean running surface of the running belt 16?
A. That's correct, right above -- starting at line 14, in column 6, "Another way to counteract the user-generated force and convert or translate it into rotational motion of the running belt 16 is to integrate a non-planar running surface such as non-planar running surface 70."
Q. Does the No. 70 in Figure 1 have a leader line?
A. It does.
Q. What is that leader line pointing to?
A. It's pointing to the running belt 16.
Q. We previously discussed that the running belt 16 included multiple components such as the slats and the inner belts. What component of the running belt 16 is the leader line for 70 touching?
A. Well, comparing Figures 4 and -- Figure 4 in particular shows multiple lead-outs or multiple lead lines to slats 228, and then 70, in that same figure, is pointing to not exactly the same slats, but another slat.
Q. So the running surface 70 is just the surface that the user will touch with their feet, correct?
MR. CARROLL: Objection. Form.

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THE WITNESS: That's correct.
BY MR. KONZ:
Q. And in the case of the '005 patent, that's the top of the slats?
A. That's correct.
Q. So collectively, the slats 228 form the running surface 70?
A. When those slats are on the top of the treadmill in the area where the user would typically be running, yes.
Q. Do you have Exhibit -- I'm sorry. Scratch that.
Can we please turn to page 101 of your declaration, which is Exhibit 2018?
A. Page 101?
Q. Yes, sir.
A. Yes.
Q. Is there a picture on that page?
A. Yes, there is.
Q. And what is that a picture of?
A. It's a representative picture of a Woodway treadmill, a CURVE treadmill.
Q. Did you take that picture?
A. I did not.
Q. And where did you acquire the photograph?
A. From materials from Woodway.

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Q. Even though you did not take the picture, do you believe that to be an accurate representation of the CURVE treadmill?
A. Yes, I do because I've seen them in person as well.
Q. So you have personally inspected one or more of the brand name CURVE treadmills produced by Woodway?
A. I have. And run on them, too.
Q. Have you inspected them, including disassembled them to view the internal components?
A. I have viewed disassembled portions of them, yes, disassembled treadmills, yes.
Q. And you are experienced with the structure of their running belt?
A. Yes.
Q. On page 100 of your report, lines 1, 2, 3, you state, "It is my opinion that Woodway's line of CURVE treadmills practice at least claims 1 through 4, 6 through 7, 9 through 13 and 15 and 16 of the '005 patent," is that correct?
A. Yes.
Q. What evidence is there that you considered when drafting your report to support that position?
A. My inspection of the treadmill. And that's -- the claim chart is shown in Exhibit 2025.
Q. So Dr. Blair, do you believe that Exhibit 2025 is a

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typographical error given that on your pages 9 through 11 it's not listed?
A. I'm sorry, could you repeat that, please?
Q. I don't believe that Exhibit 2025 exists.
A. It shows here 2025 is the '580 patent review.
Q. Okay. So that was for a different IPR proceeding, correct?
A. Well, yes, there was a '580 IPR case, yes.
Q. But did you perform a claim chart for the claims of the '005 patent?
A. I recall that I did.
Q. In the patent holder's response, there's an exhibit listed 2083.
A. Okay.
Q. Which I believe is what you were referring to.
A. I expect that's the case. I don't have that exhibit here in front of me.
MR. KONZ: Okay. Hold on one second.
(Discussion off the record.)
(Marked for identification:
Deposition Exhibit No. 2083.)
BY MR. KONZ:
Q. Dr. Blair, I'm currently showing you Exhibit 2083, which you should see on your screen. Can you see that?

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A. Yes.
Q. Is this the exhibit you were referring to on page 100?
A. That does look familiar, yes.
Q. Did you prepare these claim charts?
MR. CARROLL: Objection. Form.
THE WITNESS: I certainly reviewed all of them and probably contributed to the preparation of them as well.
BY MR. KONZ:
Q. Do you have any reason to believe that these claim charts are inaccurate?
A. Well, I want to go back through and totally review it to state that 100 percent, but not as I know right now.
Q. As stated in your declaration on page 100, citing this document as evidence, you do believe that at least claims 1 through 4, 6 through 7, 9 through 13 and 15 to 16 of the '005 patent practice the CURVE line of treadmills, correct?
A. Well, the CURVE line of treadmills practiced those patent claims, yes.
Q. Yes. Thank you.
So we're now here on page 5. And it's your opinion that the CURVE treadmill, which is

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shown here on the right, practices the claim limitation of the '005 patent shown on the left, 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; is that correct?

A. Yes.

Q. Is it also correct that the Woodway CURVE line of treadmills practices wherein the running belt includes a running surface, at least a portion of which is curved?

A. Yes.

Q. So in the picture shown here on page 5, I believe that callout 12 is referring to the running surface; is that correct?

A. I have to come closer to the screen. It appears that way, yes.

Q. And callout 12, the arrow head of it is pointing at one of the slats of the running belt, correct?

MR. CARROLL: Objection. Form.

THE WITNESS: Yes.

BY MR. KONZ:

Q. Is it your opinion that the structure of the belt shown on the picture of the Woodway CURVE line of treadmills is very similar to the running belt 16

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disclosed in the '005 patent?

A. Can you repeat that, please?

Q. Is the running belt of the Woodway CURVE line of treadmills an assembly similar to the assembly 16 disclosed in the '005 patent?

A. Yes.

Q. I can't tell from this photo, but you previously indicated that you had inspected these products. Is there an inner belt to which these slats are attached that we cannot see in this photo?

A. I wouldn't probably use the word belt, I would use the word -- and again, I haven't seen one of these treadmills in awhile, but I would use the word described in the '005 specification.

Q. What word did they use in the '005 specification?

A. Yeah, I'm looking for it. Sorry, I misspoke. They do call it 232 endless belts.

Q. In the image shown in Exhibit 2083 on the picture on page 5, it appears on the left and right sides -- which in this view is inching out of the page -- to be a series of bumps. Do you understand those to be rivets?

A. They could be from looking at this photo, yes.

Q. Can you say with absolute certainty that they're at least fasteners?

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A. Yes.

Q. Here on page 1, there's a citation to "User Manual: February 2, 2018, UM-NT-EN-02." Is that referring to the manual that is entered into the record as Exhibit 2028?

A. I don't believe I have that exhibit here in front of me, so I can't confirm that.

MR. KONZ: Okay. I can get that for you as well.

(Marked for identification: Deposition Exhibit No. 2028.)

BY MR. KONZ:

Q. Dr. Blair, if you turn to page 11 of your expert report, is Exhibit 2028 listed?

A. Yes, it is, on the top of page 11. "Woodway Non-Motorized Treadmills User Manual."

Q. And since it's listed, am I correct in assuming you considered Exhibit 2028 in drafting your expert report?

A. I'm sorry, the answer to that question is yes.

THE WITNESS: And I want to apologize and correct earlier, I do have Exhibit 2028 here in front of me.

MR. KONZ: Okay. Great. I'm going to stop sharing my screen then. I imagine it's much

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easier to see on paper than it was all the way across the conference room.

BY MR. KONZ:

Q. So please go to page 32.

A. Page 32 of what?

Q. Oh, of Exhibit 2028. I'm sorry.

A. That's okay.

Q. What is Section 5.2?

A. "Running Surface."

Q. Can you read the first sentence below that heading?

A. "The walking surface belt consists of individual slats which are mounted on a set of wedged-tooth belts."

Q. That sentence you just read confirms the understanding that you had explained to me moments ago when we were looking at the picture, correct?

A. Yeah, it definitely does. And I think a potentially key part of this is that it says a set of wedged-tooth belts. So there's two belts, one on either end of the running -- of the walking surface, so the slats mount -- sorry, let me start again.

There's two belts. The slats mount on the two belts that run parallel to each other.

Q. Okay. Thank you for that.

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Could you please turn back to your report, page 100, once more?
A. Okay.
Q. As we previously discussed, it was your opinion that Woodway's line of CURVE treadmills practice at least claims 1 through 4, 6 through 7, 9 through 13 and 15 and 16. Why did you not list claim 8 of the '005 patent in that listing?
A. I don't see any reason why it should not have.
Q. So it was your opinion at the time that you wrote your declaration that the CURVE line of treadmills indeed had slats?
A. Correct.
MR. KONZ: Okay. Mr. Carroll, I'm going to switch topics now and it's probably going to go awhile. We're about 50 minutes in. I don't know if you want to take a break now because I don't want to take a break in the middle of my next line of questioning, which could go about for another 45 minutes.
MR. CARROLL: Okay. A break now seems fine with me.
(Whereupon a break was taken from 11:15 a.m. to 11:28 a.m.)
MR. KONZ: Dr. Blair, welcome back.

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(Marked for identification: Deposition Exhibit No. 1031.)
BY MR. KONZ:
Q. Could you please grab Exhibit 1031, which is the Tollkien prior art reference?
A. Okay.
Q. You have it ready?
A. Yes.
Q. Okay. Is Tollkien directed towards treadmills?
A. Paragraph 1 of the Tollkien reference says, "The invention relates to a treadmill for fitness training and a vehicle with a treadmill."
Q. And do you understand Tollkien as disclosing a curved style treadmill?
A. Yes, paragraph 5 -- oh, never mind. That was a prior art reference.
But yes, it does disclose a curved treadmill.
Q. Can you please turn to Figure 1 of Tollkien?
A. Okay.
Q. Would you agree that Figure 1 is a side view of the treadmill?
A. A cross-section side view, yes.
Q. Does Figure 1 show the running belt of Tollkien?
A. It shows the continuous belt is No. 12.

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Q. And belt No. 12, is that located where the user runs?
A. No, the user runs on the surface above -- on the surface made by the collection of items 10.
Q. And what are items 10?
A. Cross members.
Q. And while Tollkien uses the terminology of cross members, would you consider those to be slats?
A. Not in an engineering sense. The cross members are a little more rectangular and boxy; a slat, you usually think of something as -- I'm sorry. Let me start over there.
The items 10 are a little bit more square shaped in cross-section. Slats, you usually think of a rectangle with the long dimension substantially larger than the narrow dimension, so it's a flatter object.
Q. I understand that you just described the shape and dimensions of the cross members 10 being different than the slats 228 disclosed in the '005 patent, but from a functional perspective, is there a difference?
MR. CARROLL: Objection. Form.
THE WITNESS: I guess it depends on what the function is.

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BY MR. KONZ:
Q. If the function were to -- I'm sorry.
If the function were to provide a surface for exercising, would they both then provide the same functionality?
A. No, actually, because in Tollkien, he talks a lot about how the cross member is cushioned by -- in paragraph 19 here, "cushioned by the plastic strips pressing against one another while the lower edges tend to spread apart, but only as far as the attachment to the belt by the rivets allows for."
And then skipping forward a little bit, "The tension or shape of the running surface can be increased or otherwise varied by attaching different strips in particular when the tension decreases due to wear. A higher tension results in a flatter curvature, which is therefore more suited to larger runners with longer legs that describe a larger arc radius during the running movement."
So in Tollkien, items 10, the cross members are actually used to -- are actually used to control the radius of the running belt.
Q. So the functionality you just described of changing the radius of the running belt, that would be a

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second function in addition to forming a surface to stand on?
MR. CARROLL: Objection. Form.
THE WITNESS: Yes.
BY MR. KONZ:
Q. So in both the '005 patent and in Tollkien, the user's foot contacts the tops of either the slats or the cross members 10?
A. Correct.
Q. So it's your opinion that in Tollkien, the running surface would be the tops of the cross members?
MR. CARROLL: Objection. Form.
THE WITNESS: Correct. But Tollkien also describes 12 as the belt.
BY MR. KONZ:
Q. The '005 patent includes an endless belt that's No. 226. Is that an analogous component to the belt 12?
A. No, they're different in that in paragraph 18 of Tollkien, it says toward the bottom of paragraph 18, it says, "The connections of the cross-sections to the belt (by means of rivets 6 in the exemplary embodiment) and the belt itself."
So Tollkien actually has a single belt as one would typically see on a flat motorized

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treadmill at a gym, so it's a single piece that stretches across that, so it would look much more like that kind of belt, whereas the description of 228 in the '005 patent looks to me more like, I don't know, a fan belt like you would see in a car, right? So it's narrow, there's two of them, there's one on each side.
Q. In talking -- I believe you just said the cross members 10 are attached to the single belt 12; is that correct?
MR. CARROLL: Objection. Form.
THE WITNESS: Yes.
BY MR. KONZ:
Q. And what is used to attach the cross members 10 to the belt 12?
A. It's item 6.
Q. Do you know what item 6 is?
A. End of paragraph 18, "The connections of the cross-sections to the belt (by means of rivets 6 in the exemplary embodiment) and the belt itself," in the exemplary embodiment here, it's describing them as rivets.
Q. And a rivet is a type of fastener?
A. Yes.
Q. And in Tollkien, the rivet is used to join the

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cross members to the belt 12?
A. Yes, as described in paragraph 18.
Q. So is the belt 12 plus the cross members 10 an assembly?
A. Yes.
Q. And in fact, it's a belt assembly?
MR. CARROLL: Objection. Form.
THE WITNESS: No, I mean, that's not what Tollkien calls it. Tollkien calls 12 the belt.
BY MR. KONZ:
Q. The '005 patent uses the terminology running belt 16, but then also uses the terminology belt to refer to 226; is that correct?
A. I'm sorry, could you repeat that again?
Q. Yes.
In the '005 patent, you refer to the overall belt assembly by the callout No. 16 and then when discussing individual components thereof, they refer to the endless belts 226; is that correct?
A. Yes, top of 15, column 15, it says endless belts 226.
Q. So under the terminology used in the '005 patent, you can have an overall belt, which is being referred to as 16, and then additional belts, such

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as 226, that are a part of that, correct?
MR. CARROLL: Objection. Form.
THE WITNESS: So in the '005, column 4, line 53, that includes a running belt 16, and then back again to the top of 15, column 15, line 4 -- line 3, endless belts 226.
BY MR. KONZ:
Q. So based on what you just read, the belt 16 includes belts 226?
A. Correct.
Q. And that's because the belt 16 is referring to the overall assembly as opposed to an individual component, correct?
A. Yeah, on column 14 of the '005 patent, it says, "The slats 228 of the running belt 16 are configured to help support the user of a treadmill 10," and then it goes on to talk about, "Slats 228 may be made of substantially aiding material," and then at the top of 15, column 15, line 2, "Each slat 228 is coupled to its ends 252, 254 to the second portions 232 of the endless belts 226 using fasteners."
Q. Referring back to Tollkien, we previously discussed that it has an internal belt 12, cross members 10 that are riveted to that, and in your opinion, that

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would form a single assembly, correct?
A. Yes.
Q. Would you call that a belt assembly?
A. Well, Tollkien refers to the belt as 12 and so I guess the challenge I have here is it -- you know, if you're reading these two side by side now as opposed to a person who is skilled in the art only looking at Tollkien at the time, a person of ordinary skill in the art would look at Tollkien and say 12 is the belt because that's what Tollkien defined it as.
Q. Belt 12 with the attached cross members 10 are supported on rollers, which are listed as No. 2, correct, in Tollkien?
A. Yes.
Q. So the belt 12 and the cross members 10 are the component of Tollkien that moves during exercising, correct?
A. Yes.
Q. And just generally in the treadmill arts, what does a person of ordinary skill call the component of the treadmill that rotates when the user exercises?
A. Well, you know, the belt like No. 12 would be what someone -- a person of ordinary skill in the art

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would normally see on a flat motorized treadmill in most every gym you ever walk into.
Q. But there's also another known type of treadmill belts, is there not, typically referred to as a track style or slat style belt?
A. As in the Woodway patents, the Woodway products, yes.
Q. And that's the same type of belt that's disclosed in Tollkien, correct?
MR. CARROLL: Objection. Form.
THE WITNESS: Not exactly.
BY MR. KONZ:
Q. So it's your opinion that a skilled artisan viewing Figure 1 would not understand that the assembly formed by the belt 12 and the cross members 10 are a running belt?
MR. CARROLL: Objection. Form.
THE WITNESS: So paragraph 94 of my declaration, it says, "Cross members 10 are attached with rivets 6 to a continuous belt. Cross members 10, which never come in contact with one another, are therefore independent structures from the continuous belt, not components or portions of the continuous belt. That is, the running belt and cross members are structurally different and

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separate components, as evidenced for example by the following excerpt from Tollkien's Figure 1, which is annotated to show cross members 10 in red, continuous belt 12 in blue, and exemplary rivet 6 in yellow."
BY MR. KONZ:
Q. And that paragraph 94, when you say "independent structures," what does that mean?
A. It means that cross members 10 are a separate component than the belt 12.
Q. In the '005 patent, are the slats 228 independent structures from the endless belts 226?
A. Yes, but there's two endless belts.
Q. But in the -- I'm sorry.
In the '005 patent, the independent structures of the slats 228 and the endless belt 226 are joined together by fasteners; that's correct -- or is that correct?
MR. CARROLL: Objection. Form.
THE WITNESS: Yes, that's correct.
BY MR. KONZ:
Q. So what's joined by the fasteners, the slats 228 and the endless belts, two of them, 226, rotate together?
A. Is there a question there?

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Q. Once the slats 228 are joined to the endless belts 226, do they rotate in unison when the treadmill is in use?
A. Yes.
Q. In Tollkien, once the cross members 10 are riveted to the belt 12 by the rivets 6, does the belt 12 and the cross members also rotate in unison when in use?
A. Yes.
Q. I understand that you previously opined that Tollkien doesn't refer to the overall assembly of the belt 12 plus the cross members 10 plus the rivets 6, but would not a skilled artisan understand what is being described in Tollkien to be a running belt assembly?
A. Again, as we talked about earlier, Tollkien talks about the other functions of elements 10 with the plastic in between them also controlling the shape of the belt, the curvature of the belt, so that's -- it has two very distinct and separate functions.
A typical running belt on a treadmill, think -- you know, like in Socwell, for example, that flexible -- relatively flexible long thin piece or long flat piece, much similar to 12,

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doesn't do anything to control the shape of the running surface, just the curvature of the running surface.

Q. Would you describe Tollkien's belt 12 plus the cross members 10 to be multi-purpose given that it is used to both support the runner and adjust the curvature?

A. I would probably use the word multi-function.

Q. Because it provides both of these different functions?

A. Correct.

Q. Whereas the '005 running belt 16 does not include this curvature change functionality?

A. That's correct.

Q. But they won't provide a function that is the same, that being a surface to exercise on, correct?

MR. CARROLL: Objection. Form.

THE WITNESS: So the running surface in the '005 is defined by the slats 16; the running surface in Tollkien are the cross members 10 and Tollkien defines the belt, the running belt, as 12, continuous belt as 12.

BY MR. KONZ:

Q. On page 52 of your declaration, you have a heading that says, "Tollkien does not disclose a running

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belt...," and then it has three ellipses and has a wherein clause as well.

Is it your opinion that Tollkien does not disclose a running belt at all?

A. So Tollkien discloses the belt 12 with the cross members 10 on top of it and the running surface is the top part of the cross members.

Q. Do you believe the running belt -- I'm sorry.

Do you believe that the belt 12 of Tollkien is a running belt?

A. I'm sorry, could you repeat that?

Q. Is it your opinion that the belt 12 of Tollkien discloses a running belt?

A. I'm sorry, could you repeat that one more time?

Q. Tollkien's belt 12, would you consider that to be a running belt?

A. Tollkien's belt 12 does not include the surface on which a person runs.

Q. Does that mean it's not a running belt then?

A. In the context of CURVE manual treadmills, the running belt would include the running surface.

Q. So it would be your opinion then that the belt 12 is the support belt, not a running belt?

MR. CARROLL: Objection. Form.

THE WITNESS: Yes.

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BY MR. KONZ:

Q. What is the purpose of the belt 12 in Tollkien?

A. Overall, the Tollkien reference is relatively sparse in descriptions. Where belt 12 was mentioned is in paragraph 18, "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." So it's a carrier for the -- so 12 would be a carrier for the cross members 10 that form the running surface.

Paragraph 20 states, "Each roller 2 is coated with rubber 8, thus increasing the frictional adhesion between belt 12 and rollers 2 and protecting the roller where the rivet comes in contact underneath or therewith." So it actually contributes to the friction of -- it provides a friction layer -- it provides the friction coefficient between the rubber on roller 12 as well.

Q. The rubber coating that Tollkien discusses, is that similar to, I believe, how the '005 patent uses a ribbing on the belt 226; is that correct?

MR. CARROLL: Objection. Form.

THE WITNESS: Well, similar in what way?

MR. KONZ: Similar to engage the pulleys

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about which it is wrapped.

THE WITNESS: Yeah, there are a number of different ways you could get two things to move relative to each other without slipping and that's certainly one option is what's described in Tollkien.

BY MR. KONZ:

Q. I understand that Tollkien doesn't use a callout or discuss this in the specification, but as a skilled artisan, what would the name of the belt 12 plus the cross members 10 be? If we were to remove that component from the treadmill and be a single component, what would a skilled artisan call that?

A. The curvature adjustments assembly.

Q. The name you just proposed only captures one of the two functions of Tollkien's assembly, though, correct?

A. Yes.

Q. But it's your opinion that a skilled artisan would not consider the belt 12 and the cross members 10 to be a running belt assembly?

A. Well, paragraph 92 says, "A person of ordinary skill would understand a treadmill's running surface to be a surface of the running belt on which the runner's feet would typically make

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contact when the user is running on the treadmill during normal use. This is confirmed by the language of claims 1, 9 and 15, which all require the running belt to include the running surface."

Continuing on, "A person of ordinary skill in the art would therefore understand both from the plain and ordinary meaning of running surface and from the claim language that the running surface must be formed by at least a portion of the running belt, i.e., by corresponding to the area of the running belt that the runner's feet are intended to contact when the user is running on the device."

And then I go on in paragraph 93, I state, "However, a person of ordinary skill in the art would also understand the petitioner and Dr. Giachetti do not identify a section of the running belt as being the running surface. Instead, they point to the cross members that are attached to either belt 12 or belt 3, but are not included in the running belt."

Q. Would you agree that the combined assembly of the belt 12 and the cross members 10 include a running surface?

A. The running surface in Tollkien is the items -- is across items 10.

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Q. And items 10 are fixed to the belt 12 by the rivets 6, correct?

A. Yes.

Q. How does the combined assembly of the belt 12 and the cross members 10 fail to disclose the claimed running belt?

A. Paragraph 91 of my report states, "In my opinion, however, a person of ordinary skill in the art would understand that the aforementioned cross members failed to meet the requirements of the running surface that is included in a running belt as required by the '005 patent claims."

Paragraph 92, "A person of ordinary skill in the art would understand the treadmill's running surface to be a surface of the running belt on which the runner's feet would typically make contact when the user is running on the treadmill during normal use. This is confirmed by the language of claims 1, 9 and 15, all of which require a running belt to include the running surface."

"A person of ordinary skill in the art would therefore understand both from the plain and ordinary meaning of running surface and from the claim language that the running surface must be

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formed by at least a portion of the running belt by corresponding to the area of the running belt that the runner's feet are intended to contact when the user is running on the device. However, a person of ordinary skill would also understand that petitioner and Dr. Giachetti do not identify sections of the running belt as being the running surface. Instead, they point to the cross members that are attached to either belt 12 or belt 3, but are not included in the running belt."

Q. In Tollkien, the user's feet would contact cross members 10, correct?

A. Yes.

Q. And the cross members 10 are arranged around the belt 12, correct?

A. They're attached to the surface of belt 12 with the rivets, yes.

Q. Is it your understanding that the belt 12 forms a loop?

A. Tollkien describes it as a continuous belt 12.

Q. And it's your understanding as an expert in the treadmill arts that the continuous belt 12 is looped around rollers 2 and there would be a front roller and rear roller in Tollkien; is that correct?

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A. Yes.

Q. So in Tollkien, you have a series of cross members 10 that also loop around the front and rear rollers 2; is that correct?

A. I'm sorry, can you say that again?

Q. In Tollkien, the cross members 10 are arranged in a series so that they also loop around the rollers 2; is that correct?

A. Well, yeah, I mean, each one of them is attached to belt 12, which loops around, so each one of them will traverse the same track as belt 12.

Q. Just like the slats 28 in the '005 patent; is that correct?

A. The slats 228 will follow the same track as the two separate endless belts 226.

Q. And the cross members 10 will similarly follow the belt 12, correct?

A. Yes.

Q. It's your opinion that the series of cross members 10 which loop around the rollers 2 are not a belt?

A. Tollkien describes 12 as the belt.

Q. How would a skilled artisan understand it?

A. Understand what? I'm sorry.

Q. Would a skilled -- I'm sorry, let me restate that

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since I misspoke.
Would a skilled artisan consider a series of joined cross members that form a loop around rollers to be a belt?
A. If they were reading the '005 patent they would because that's how it's described.
Q. As a skilled artisan, when you review a patent document, do you ignore your background and your experience when reading it and only focus on what is stated in the patent?
MR. CARROLL: Objection. Form.
MR. KONZ: Let me restate that since there's an objection.
BY MR. KONZ:
Q. Is it common for skilled artisans to fill in the gaps in patent disclosures when analyzing them?
A. If it's in the skilled artisan's knowledge base, yes.
Q. In this case, is Tollkien in your knowledge base?
A. Well, I mean, for me personally, yes.
Q. So would you consider the cross members 10 that are joined continuously in a loop to be a belt independent of what Tollkien says or doesn't say?
A. Well, my understanding is the analysis I'm supposed to -- and as I did in my report here -- I

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did it from a person of ordinary skill in the art, not my perspective.
Q. So you're saying that your perspective is different than one of ordinary skill in the art?
A. Well, I mean, if we look at page 40 in my declaration, page 41, "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 or at least two years experience in the treadmill industry" -- excuse me -- "including experience and knowledge of the design, construction, testing and operation of manual treadmills." I have a PhD in aerospace engineering, so I think I'm a little beyond that.
Q. So it's your opinion that a skilled artisan as defined in this section of your report would not be able to view Tollkien's belt 12 and the cross members 10 to be a belt assembly because Tollkien doesn't explicitly state that?
A. I think the confusion could lie in the fact that the '005 patent -- which of course wasn't in existence at the time of Tollkien, right? A running belt -- I'm looking at the top of column 33. "...wherein the running belt includes a running surface at least a portion of which is

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curved." So if we go back to Tollkien, Tollkien has defined 12 as the belt and the running surface is on the top of 10, the cross members.
Q. How is the belt 16 -- scratch that.
If the '005 patent didn't include a callout 16 and explicitly referred to the assembly of the slats 228 and the endless belts 226 and instead just disclosed the endless belts 226 and the slats 228, would it be your opinion then that the '005 patent does not disclose a running belt assembly?
A. I don't really know how to answer that because it explicitly defines the running belt in there. I mean, that's part of the whole specification and the whole description.
Q. So is it your opinion that the description of the running belt 16 is crucial in the '005 patent -- is crucial to understanding that the '005 patent discloses a running belt assembly that includes the slats 28 and the endless belts 226?
MR. CARROLL: Objection. Form.
THE WITNESS: Well, I mean, the '005 patent explicitly states that 16 is -- I mean, column 4, line 53 includes a running belt 16.

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BY MR. KONZ:
Q. And that is the section -- I'm sorry. If the '005 patent didn't include that explicit disclosure in callout 16, is it your opinion that a skilled artisan would be unable to determine that the '005 patent discloses a running belt?
MR. CARROLL: Objection. Form.
THE WITNESS: It would seem absurd to me that a patent describing a CURVE manual treadmill would not define specifically the components that include, for example, 16, the running belt.
BY MR. KONZ:
Q. Is it your opinion that a skilled artisan in the treadmill arts, if provided with a listing of subcomponents and how they're connected, would be unable to deduce the overall larger assembly?
MR. CARROLL: Objection. Form.
THE WITNESS: Well, yes, a person of ordinary skill in the art from the description of the components and how they're put together would understand how the assembly functions together and works together, yes, absolutely.
BY MR. KONZ:
Q. Would you consider the belt 12 and the cross members 10 to be subcomponents of an overall

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assembly?
A. Yes.
Q. Would you agree that Tollkien explains these subcomponents of the belt 12 and the cross members 10?
A. Yes.
Q. But you disagree that a skilled artisan with that information would describe that overall assembly as a running belt?
A. Tollkien described 12 as the belt.
Q. And what is callout 226 in the '005 patent?
A. So column 14 starts -- bottom of column 14, line 65, "The slats 228 of the running belt 16 are configured to help support a user of the treadmill 10. The slats 228 may be made of substantially any suitably sturdy material" -- with plastic, et cetera -- "and extend generally laterally between endless belts 226."
MR. KONZ: Okay. Counsel, I'm going to move on to another topic.
(Discussion off the record.)
BY MR. KONZ:
Q. Would you please turn to Figure 6 of the '005 patent, please?
A. Okay.

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Q. Is Figure 6 an exploded view of the treadmill?
A. Column 3, line 12, it says, "Figure 6 is an exploded view of a portion of the manual treadmill in Figure 1, having the side panels and handrail removed."
Q. Is it your understanding that No. 44 refers to a front shaft assembly?
A. Column 5, line 14, "a front shaft assembly 44."
Q. And what are the subcomponents of the assembly 44?
A. Column 5, line 35, starting on 34, "The front shaft assembly 44 includes a pair of front running belt pulleys 62 interconnected with and preferably mounted to a shaft 64."
Q. What is the purpose of the shaft in the assembly 44?
A. Column 5, line 43, "...the front and rear running belt pulleys 62, 66 are preferably fixed relative to shafts 64 and 68 respectively, rotation of the front and rear running belt pulleys 62, 66 causes the shafts 64, 68 to rotate in the same direction."
Q. Are the pulleys 62 -- just 62, both referred to as 62, are they fixed to the shafts 64?
A. It says in column 5, line 43, line 44, it says, "...front and rear running belt pulleys 62 and 66 are preferably fixed relative to shafts 64 and 68."

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Q. And how is the assembly 44 attached to the treadmill?
A. Column 5, line 13, "The base 12 is shown further including a frame 40, a front shaft assembly 44 positioned near a front end 48 of the frame 40, and a rear shaft assembly 46 positioned near the rear end 50 of frame 40, generally opposite the front end 48. Specifically, the front shaft assembly 44 is coupled to the frame 40 at the front end 48 and the rear shaft assembly 46 is coupled to the frame 40 at the rear end 50 so that the frame supports these two shaft assemblies."
Q. And did the shaft assemblies rotate relative to the frame?
A. Yes.
Q. And how does that work? How does the '005 patent describe a rotatable connection between the frame and the shaft assemblies?
A. Column 5, line 41, "The running belt 16 is disposed about the front and rear running belt pulleys 62, 66, which will be discussed in more detail below. As the front end rear running belt pulleys 62 and 66 are preferably fixed relative to shafts 64 and 68 respectively, rotation of the front and rear running belt pulleys 62 and 66 causes the shafts 64

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and 68 to rotate in the same direction."
Q. Is there a bearing or some other mechanism that allows for that rotation?
A. I just scanned back through the '005 patent and it doesn't -- so in Figure 6, for example, between items, you know, 62 and 246, there are some components that are shown in there, but from what I can see from looking back through that, through the '005 patent, it doesn't specifically call out what those are.
Q. As a skilled artisan, are you able to determine what those are based on the drawings?
A. Assuming a fact here, but one would assume some type of a bearing assembly might be an option.
Q. If you were to look at Figure 38, which is a zoomed-in view --
A. Okay.
Q. -- are you able -- as a skilled person, are you able to interpret this drawing in Figure 38 to determine how the bearing assemblies are connected to the frame?
A. Well, there's an unnumbered object there -- I think you actually meant the shaft assemblies. There's an unidentified object there just to the -- as I'm looking at the drawing and holding it so it's

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readable, just to the right, right butting up next to item No. 40 there, it looks like it could be some kind of a bearing system.

Q. Given that the specification of the '005 patent is silent, what did you draw on in order to explain to me what an illustrated but undiscussed component is?

A. My skills and experience as a mechanical engineer.

Q. So it's your understanding that a skilled artisan can view a drawing and determine what it shows without explanation based on their experience?

A. Well, you can't be 100 percent definitive. You can guess.

Q. What is your level of confidence that Figure 38 shows a bearing for connecting the shafts 68 to the frame 40?

A. Well, I would say it's 100 percent because I've seen these treadmills assembled at Woodway as described in this patent.

Q. So it's your opinion that a skilled artisan doesn't always require a textual explanation in order to interpret a mechanical drawing?

A. I would say that a skilled artisan could infer the possibilities of what's represented in the drawing, but they'll never know 100 percent if it's not

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called out.

Q. Please turn to Figure 5 of the '005 patent.

A. Okay.

Q. From what vantage point is Figure 5 looking?

A. It looks to be a side view -- well, let's just see what it says. Column 3, line 12, "Figure 5 is a cross-sectional view of a portion of the manual treadmill taken along line 55 of Figure 1."

Q. And line 55 is a slice looking from the center, looking from inside the treadmill outwardly, correct?

A. So line 55 basically shows what you would often consider a cut line. So if you actually just took and cut that in half or cut along line 5 along that full system, what you would be looking at from Figure 1, looking to the left side of the figure, is what you would see in Figure 5.

Q. So the arrows in section line 55 indicate the portion of the treadmill that has been cut away and then you're looking from the side of what's left?

A. No, actually -- well, let me put it this way: Normally in engineering drawings you would show the cut lines and the arrows and 55 -- the directions of 55 would show you then what you're looking at in

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the sectional view.

So it looks like actually -- it's a little hard to tell because of -- in normal practice you don't do sectional indications on a perspective view because it's a little hard to tell where everything is lined up, but in this case, it looks like that -- it's a little hard to guess, but it looks like they have -- so the Figure 5 actually shows the part that was cut off of the overall treadmill.

Q. Okay. So when looking at Figure 5, the vantage point is from somewhere in the middle -- not the middle, but on the right side edge of the belt if you're looking out as to what's left, kind of the -- you're kind of looking at the right side of the treadmill from the middle or from its side?

A. Yes.

Q. And so if we flip back to Figure 5, would you agree that callout 44 is referring to the front shaft assembly and callout 46 is referring to the rear shaft assembly?

A. Yeah, column 5, line 35, front shaft assembly 44, so that would be the front shaft assembly, yes.

Q. In 55, we produced the callout, but can you see the belt pulley 62 and 68 in Figure 5?

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A. So could you repeat the question again now that we've looked at this a bit?

Q. Sure. In Figure 5, the callouts for the pulleys 62 and 66 are not included on that drawing, but do you believe that Figure 5 shows those pulleys?

A. It's going to show -- those pulleys occur in pairs, a pair on front and a pair on the rear. It's going to show, based on -- again, it's a little confusing because of how they put the cut line in there, but I would assume, you know, if I'm being consistent in the way I'm thinking about this, that yes, we're looking at one of each of those pulleys, one front and one rear.

Q. And in the center of, say, the front pulley, there's a series or at least two circles in the middle of that pulley; is that correct?

A. Yes.

Q. And in that hashmark, that would denote the center line of the shaft assembly; is that correct?

A. Well, yeah, the shaft -- yes.

Q. What do you believe that those circles represent?

A. If we look at Figure 10, those circles represent whatever that thing is that's just to the left and right at each item 62.

Q. Is it your understanding from Figure 10 that the

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shaft 64 extends through those left and right side items associated with 234 -- or 62, rather?

A. Well, I say the understanding comes from Figure 6, the exploded view that we were looking at earlier.

Q. So is it your understanding in Figure 5 that the innermost circles are the shafts and cross-sections?

A. It appears to be that way, yes.

MR. KONZ: So Dr. Blair, I see your lunch has arrived. Now is an okay stopping time for me, and I'm on Eastern Time, so I'm hungry, so if it's all right with everybody, I think we can take a break for lunch now.

(Whereupon a break was taken from 12:50 p.m. to 1:58 p.m.)

BY MR. KONZ:

Q. Could you please grab Exhibit 1031, which is Tollkien?

A. Okay.

Q. Would you agree that Tollkien includes rollers 2 that support the belt 12 and the cross members 10?

A. Yes. I was looking for the definition for 2. Yes.

Q. When a person is using the treadmill in Tollkien, what are the rollers doing?

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A. Paragraph 20, "Each roller 2 is coated with rubber 8, thus increasing the frictional adhesion between the belt 12" -- and again, the specification is rather sparse.

He talks about rollers 28 and 30 in relationship, so he says, for example, that the rear roller 28, which is in turn moved by the circulating belt 30 and that the belt 30 is analogous to belt 12 in Figure 1. And it says there, "The second roller 32 on the front of vehicle 20, thus enabling belt 30 to circulate continuously on the two rollers 28 and 32."

Q. But based on the description you just read, what did the rollers do when the belt moves?

A. The rollers move. The rollers rotate as the belt moves with them.

Q. Do the rollers rotate about a central axis?

A. That's not explicitly stated in the specification.

Q. What's your opinion as a skilled artisan?

A. It's likely that they do.

Q. It's likely or they have to?

A. They wouldn't have to be centric. The axis could be off center and it could simulate some kind of lumpy system or something like that. It would be preferential if it were center.

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Q. If the rollers weren't centrically mounted for rotation, would that be suitable for use in a treadmill?

A. We did some work with one like that way back in my career where we were actually trying to develop some kind of simulated motion for doing bike testing, so an uneven variation of surface, but for a, you know, more traditional exercise device, not likely.

Q. What would happen in a treadmill designed for exercise by a person walking or running if the rollers were mounted in a centric loop?

A. You would get an uneven -- likely an uneven feel to the belt motion.

Q. In your experience, would that be a satisfactory product?

A. No.

Q. Are you aware of anyone who has ever built a treadmill for exercise by running or walking where the rollers or pulleys were not supported for concentric rotation?

A. I've never seen one on the market.

Q. So is it your opinion that the rollers 2 of Tollkien are designed to rotate about a concentric axis of rotation?

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A. I think probably the proper terminology there would be that you would want rollers 2 to rotate about their center line.

Q. And that would be -- and when looking at the side view of Figure 1, that would be the center point of the circle shown; is that correct?

A. Yes.

Q. Is it your opinion that rollers 2 of Tollkien are supported for rotation relative to a frame?

A. Tollkien doesn't speak to how the rollers were mounted for rollers 2.

Q. Side stepping the exact way they're mounted, is it your opinion that the rollers 2 must be mounted in position so that they don't move vertically or forward and aft while rotating?

A. Yes.

Q. In the treadmill arts, how are rollers or pulleys typically supported?

A. In the treadmill arts, is that what you said?

Q. Yes, in the treadmill arts.

A. They're usually somehow coupled into the frame.

Q. What is the most common mechanism for coupling a roller or pulley to a trademark?

A. Often if the device is going to have to rotate, you usually use some sort of a bearing.

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Q. So if you were to use a bearing, one part of the bearing would be fixed relative to the frame and the other part would be fixed to the roller 2?
A. Yeah, so typically the outer part of the bearing system would be fixed to the stationary aspect of whatever it is you're mounting it to and the inner part then would be somehow fixed to, in this case, the roller.
Q. In the side view of Figure 1, there's a circle shown inside the roller 2, correct?
A. Yes.
Q. And that circle is located at the center point of the roller, is it not?
A. It certainly looks very close to it, yes.
Q. What is that circle?
A. It's not defined.
Q. You're a skilled artisan, you have significant experience in treadmills; you have no idea what that circle is?
A. It could be a number of things.
Q. Could it be a shaft?
A. Paragraph 101 in my declaration, it says here, "A POSA would understand that the depicted circle could represent a number of different structures." Even assuming that the circle is meant to represent

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the attachment point of some rotational coupling between roller 2 and the frame of the device, the circle could just as easily represent the socket of a ball-type joint or an outshoot of the roller itself that fits into a complementary-shaped receiver on the frame. Moreover, given the lack of disclosure in Tollkien, the circle may not represent a connection point at all, in which case a POSA would have no indication of what that circle in Figure 1 is intended to represent."
Q. Your answer didn't really address my question. Could that circle be a shaft?
A. It could be.
Q. And shafts are commonly used in treadmills to support a roller or a pulley, are they not?
A. Yes.
Q. Are they the most common means?
A. I don't know that I've surveyed enough of the treadmill space to know if they're most common, but they are fairly common.
Q. Have you ever seen a commercial treadmill that did not include a shaft for supporting the belt pulleys or rollers?
A. The only commercial treadmills that I've disassembled or worked on in relationship to these

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matters would have been in the CURVE treadmills and those have all had shafts in them.
Q. Please turn to Figure 3 of Tollkien.
A. Okay.
Q. Is this a front view of Tollkien?
A. Well, again, the specification of Tollkien is rather thin on descriptive material, so it looks like it could be either a front view or a back view.
Q. Please read paragraph 17.
A. Oh, my apologies. Thank you. Front view.
Q. The way you read Figure 3 is a front view?
A. Yes.
Q. And in Figure 3, there is an arrow to 32. Do you agree that that's pointing at the front roller?
A. Yes, paragraph 22 says there's a second roller at 32 in the front of vehicle 20.
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

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that the Y-shaped component supports the roller 32?
A. As best you can tell from the hand sketch, yes, in Figure 3.
Q. And what does the hand sketch of Figure 3 show with regards to the connection between the roller 32 and the Y-shaped component?
A. Very little, actually. There's some protuberances from both sides of the roller and then there's the frame piece there that they overlap one another in some way, but it's not really clear in how they're connected at all.
Q. Would you agree that Figure 3 shows that those -- I believe you called them -- you didn't call them protrusion. What did you call them?
A. Protuberances, yes.
Q. Would you agree that those extend through the Y-shaped component?
A. Again, if you just look at the figure, if you just look at the sketch, and if it's actually drawn correctly, I wouldn't agree with that because on the one on the left, it looks like it's in front of or closer to me in the frame and the one on the right has a little bit of a line going through it, so it's really hard to tell.
Q. That roller 32 cannot float in space, can it?

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A. No.
Q. Something is holding roller 32 in position shown in Figure 3, is it not?
A. Yes.
Q. Do you agree that the Y-shaped component is holding the roller 32 in space?
A. It doesn't appear to be anything else that would be.
Q. And each of those protrusions has a first side which touches the roller 32 and a second side which is outside of the Y-shaped component?
A. Correct.
Q. You would then agree that it's either extending through the Y-shaped component or those two components do not overlap; is that correct?
A. I think a third option -- again, depending on what that frame piece, how the frame piece actually is -- it could be resting on top of.
Q. In your third option, if those protrusions were resting on top of the frame, the frame would still be supporting the roller, correct?
A. Yes.
Q. In your third option, would you agree that the protrusions would be coupled to the frame?
A. Yes.

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Q. Figure 3 is a front view. What shape would you describe those protrusions as being? In the view itself, not if you were to extrapolate into 3D space. Just looking at the view of Figure 3, what shape are they?
A. Well, it's a rectangle on the page.
Q. Right. And then if you turn to Figure 1, do you disagree that that circle shown is an end view of those protrusions?
A. Well, again -- I'm sorry. Again, he never specifically calls out what those pieces are, Tollkien never does, but if one is looking at engineering drawings or as part of ordinary skill, I would assume that the circle in the center of item 2 on Figure 1 could potentially -- is probably likely the same -- representing the same thing as the protrusion in Figure 3.
Q. So a skilled artisan, using their skills as a mechanical engineer or their experience in the field of treadmills, would be able to look at the side view of Figure 1 and the front view of Figure 3 and understand that those two figures are expressing that those protrusions are cylindrical in shape?
A. It's likely, yes.

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Q. Would you then agree that Figure 3 shows a roller 32 with two cylindrical projections extending from its ends?
A. That's what it appears to be, yes.
Q. Why are those protrusions not shafts?
A. There's nothing to indicate they have to be. They could be actually protrusions that are all part of the same material that the roller is made out of. It could be just a stub on the end.
Q. So if the roller 32 were, say, a solid piece with those protrusions, for example, then you would not consider those protrusions to be shafts?
A. Not necessarily.
Q. Is it your opinion that claims 2 and 3 of the '005 patent, which require a front or rear shaft coupled to the frame, that the roller or pulley has to be a separate component than the shaft?
A. Sorry, just catching up here with the claim. Can you repeat the question, please?
Q. Sure.
If a treadmill included a solid piece roller that had cylindrical end stubs extending off the side and attached to the frame through some sort of bearing, would that be a front or rear shaft coupled to the frame as claimed in claims 2

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and 3?
A. Well, I would say the difference being here than in Tollkien, for example, we're talking about rollers, and claims 2 and 3 depend from claim 1 and claim 1 specifically was talking about pulleys and not rollers.
Q. So going back to Tollkien. Do you agree that the cylindrical-shaped end protrusions support the roller 32 for rotation?
MR. CARROLL: Objection. Form.
THE WITNESS: Yeah, that's what I -- that's what we've assumed, yes.
BY MR. KONZ:
Q. But you disagree with me that they're shafts?
A. I would consider them to be a protrusion.
Q. How do you differentiate between a protrusion and a shaft?
A. Well, again, in the example I gave before, where you start with a long roller and, say, put it in a lathe and just trim down until you get the protrusion that's there that would be centered exactly as those are, those aren't really shafts in that case, it's all part of the same piece. It's all one unit; it's all one component.
Q. Okay. So you believe that the roller or pulley

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needs to be a separate component than the shaft?
A. Well, that's the way it's described in the '005 patent.
Q. So the '005 patent describes examples where the pulley is received on a shaft and they're separate components?
A. Correct.
Q. And you believe that a shaft requires that, the claim --
A. I -- I'm sorry. I talked over you.
Q. No, it was actually my fault. Let me just repeat it. So the '005 -- never mind. I went back too far.
So you believe in the context of the '005 patent that the claim term shaft requires a shaft component and then a separate pulley or roller that supports the belt?
A. Well, certainly as we were talking about earlier today in Figure 6, column 5, line 12, referring to Figures 2 through 6, "The base 12 is shown further including a frame 40, and a front shaft assembly 44 positioned in a front end 48 of the frame 40, and a rear shaft assembly 46 positioned near the rear end of frame 40, generally opposite the front end 48."
And then we go down to line 34. "The

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front shaft assembly 44 includes a pair of front running belt pulleys 62 interconnected with and preferably directly mounted to a shaft 64," and then similarly things about the rear shaft.
Q. From a performance standpoint, is there any difference between a roller with integrated end projections versus pulleys pointed on a shaft?
A. Absolutely.
Q. What would that be?
A. The roller as shown in Tollkien is going to have a lot more rotational inertia and so it's going to tend -- you know, Newton's First Law, an object in motion tends to stay in motion. It would stay in motion a lot longer with the same impulse added to it as it goes to the shaft and pulleys.
Q. That would depend on the relative weights, correct? For example, if you used a very light-weight material to make a solid piece roller or a very heavy-weight material to make the belt pulleys and shaft, conceivably one could be harder to turn than the other, correct?
A. Yeah, you could come up with material combinations or geometric combinations, certainly, but you also have to make sure whatever you're selecting is going to support the weight and have the structural

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rigidity and vibrational requirements and other things you're going to need too, so more than likely there's going to be more mass in the roller version than there would be in the shaft with pulleys.
Q. In practice -- by practice, I mean in commercially available treadmills -- the roller design where it is a solid piece roller with the end projections, that isn't used in the commercial treadmill products, correct?
MR. CARROLL: Objection. Form.
THE WITNESS: Could you repeat that again? I think I got a little lost there.
BY MR. KONZ:
Q. Do treadmill manufacturers use a roller design where the roller and the end projections are formed as a single piece?
A. I don't know if I've seen one that way.
Q. Tollkien doesn't show this; however, if the two end projections in fact extended through the middle of the roller 32, would you then consider it to be a shaft?
A. If the end projections were one continuous piece that was separate from the outside roller, is that what you're asking?

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Q. Yes.
A. Yeah, then that internal piece would likely be a shaft.
Q. And in that design, a skilled artisan would understand that you could fix the shaft to a frame and then place a bearing between the roller and the shaft, correct?
A. That's one option.
Q. The other option would be to have the shaft fixed to the roller and then be joined to the frame by some sort of bearing, correct?
A. That would be another option, yes.
Q. Is there a third option?
A. I'm not thinking of one right at the moment.
Q. In paragraph 101 of your expert declaration -- and I'll give you a moment to get there.
A. Yes.
Q. You state that the depicted circle in Figure 1 of Tollkien could be a ball joint.
A. Wait a minute. Sorry, I was on page 101.
Q. Page 59.
A. Okay.
Q. In paragraph 101 of your expert declaration, you state that the depicted circle in Figure 1 of Tollkien could be a ball joint.

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A. Yes.
Q. Could you explain how that would work, please?
A. Certainly. Because of the -- just because it's circular shape means there's no hard edges on it. It doesn't mean that could actually be like a spherical -- like a half spherical cap on there.
Q. Back up for a moment and explain what a ball joint is.
A. A ball joint is oftentimes -- like your shoulder or hip, it's got a spherical part to it that rotates inside or connects inside of something else. It's more of a socket site.
Q. So you would agree that a ball joint includes a ball-side component and a socket-side component?
A. Correct.
Q. And the ball-side component sits within the socket-side component?
A. Yes.
Q. And there's usually a friction-reducing fluid or material either on the ball side or on the socket side to allow relative movement between the ball and socket; is that correct?
A. Yes.
Q. And in a ball joint, the ball can both rotate relative to the socket side and translate at an

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angle; is that correct?
A. Not exactly. The ball and socket joint has basically two rotational degrees of freedom. It has the spin about the axis and then it has the other spin about the ball itself, so it can rotate, you know, within the restrictions of the socket.
Q. So if I were to mount a socket side of this joint on a wall and then place the ball side with a weight on it, what would happen?
A. Whatever -- the extension of the ball side would droop down because of the weight until it contacted the -- until, you know, whatever contacted the edge of the socket side.
Q. So a ball joint will not hold eccentricity between the two sides of the joint, will it?
A. I would answer that saying it won't hold them in a specific aligned position.
Q. Are ball joints a type of bearing?
A. Yeah, I guess you could consider them a type of bearing.
Q. So now that we've kind of generally talked about what a ball joint is, could you explain how one would use such a joint to support a roller for rotation within a treadmill?

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A. Sure. You could have the ball side of the ball joint on each end of the roller and you could have the socket side on -- for example, on the figure we were talking about, three and four -- you could have the socket side of -- two different socket sides on each side in that frame.
Q. So you would need some sort of extension coming off the roller to attach the ball side to?
A. No, not necessarily. You could have just a big enough ball there that it can just interface with the socket so long as the socket does not rub against -- so long as the edge of the socket doesn't rub against the actual roller part or you could have an extension.
Q. Have you ever seen a treadmill that used ball joints to support a roller or pulleys for rotation?
A. I don't think I have.
Q. Have you ever seen a ball joint used to support a roller or a pulley for rotation in any context?
A. I'm trying to remember what the exact application was, but that's a useful configuration if you have alignment challenges. So it doesn't have to be strictly aligned, right? You get a little bit of give because they don't have to be exactly aligned,

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so there are cases where that might make sense.
Q. Like a -- are you familiar with a swivel socket tool or a universal socket tool?
A. Yeah.
Q. Could you explain what those are used for?
A. Well, I think probably the -- well, they're actually used so you don't necessarily have to have a fixed angle or -- a fixed angle between the end of the socket tool to handle, so it allows you to actually get into some rather inconvenient places with it, so it gives you a couple extra degrees of freedom. It's like a drive shaft on a car.
Q. And those tools, they include a ball joint to allow that degree of freedom, correct?
A. They may use a ball joint or what's called a universal joint like you would see in a drive shaft in a car, like a double yoke. It gives you the same -- it basically gives you the same kinematic movement.
Q. Because ball joints do not hold a center line between the two sides of the ball joint, are they prone to wobble?
A. No, not necessarily. Ball joints are pretty common in suspensions in automotive applications.
Q. And in that application, are they supporting a

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rotating component that's spinning about its axis?
A. No, that application is more analogous to what you were describing the socket tool earlier.
Q. So to utilize the ball joint to support the roller 32 would be an unorthodox use of that type of joint, correct?
MR. CARROLL: Objection. Form.
THE WITNESS: Yeah, it wouldn't be common.
BY MR. KONZ:
Q. And indeed, you've never seen that, correct?
A. Not in a treadmill.
Q. Can you mount a ball joint on the end of a shaft?
A. Well, you can certainly make the end of the shaft round, the ball, if that's what you're asking.
Q. Yeah, that's what I was asking.
Let's refer back again to paragraph 101 of your report.
A. Okay.
Q. You talk about an offshoot of the roller. Is that what we were just talking about previously where you have a solid roller and circular projections extending from the ends?
A. Yeah, or protuberances as I called it in our earlier discussions. That's the same concept, yes.

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Q. And it's your opinion that those protuberances would not be shafts as used in the '005 patent?
A. Yes, we talked about earlier, you know, the '005 patent clearly describes a shaft 64 connected to the pulley 62.
Q. It we were to view it holistically outside of just the context of the '005 patent, would you consider those offshoots to be shafts in a more general context?
MR. CARROLL: Objection. Form.
THE WITNESS: Not if they're part of the roller itself.
BY MR. KONZ:
Q. Okay. Let's please turn back to Figure 1 of Tollkien.
A. Figure 1?
Q. Yes, sir.
A. Okay.
Q. Is it your opinion that Figure 1 is a partial view of the treadmill?
A. Yes.
Q. And do you understand that there's a back half of this treadmill that includes an additional roller 2?
A. Yeah, paragraph 18 says -- in relationship to

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Figure 1, the third sentence there says the other side is merely symmetrical and then there's a middle section as well that's an analogous extension of the arc.
Q. You would agree then that the figure on the top of page 58 of your declaration, which was an annotated figure produced by petitioner, that that accurately reflects a mirroring of the symmetrical treadmill?
A. Well, other than the callouts for the shaft that we've already been talking about. That's not necessarily a shaft.
Q. Sure. Forgetting the text annotations, but just the actual image.
A. Sure.
Q. So if we can see in this picture, the belt 12 and the cross members 10 are supported at the front and at the rear by the rollers 2, correct?
A. Yes.
Q. And in this figure, there's also a center component labeled 14 which Tollkien refers to as the runners; is that correct?
A. Yes, end of paragraph 20, "Runners 14 placed underneath the running surface prevent the belt from bouncing when in use."
Q. Figure 1 illustrates an air gap between the top of

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those runners and the belt -- and the bottom of the belt 12, correct?
A. Yes, there's definitely a gap there.
Q. Do you understand Figure 1 to be illustrating the belt 12 in an unloaded state?
A. I don't think Tollkien is clear on whether that's loaded or unloaded.
Q. Would you agree that the belt 12 would be pushed down towards the runners 14 if the person were standing on top of the cross members 10?
A. Well, that would be the tendency for which direction it would go, yes.
Q. And Tollkien does make it clear that the round components of the runners 14 are designed to contact the belt 12?
A. The only thing he says about it is that same sentence I read a moment ago in paragraph 20, "The runners 14 placed underneath the running surface prevent the belt from bouncing when in use."
Q. Would you agree that the runners 14 would have to make contact with the belt 12 to prevent bouncing?
A. That's the implied -- that would be the implied method, yes, from this specification.
Q. Isn't it more than implied? If the runners 14 never touched the belt, how could they possibly

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prevent it from bouncing?
A. Well, they could be there just to prevent an extreme case, so under normal use, they never contact. The belt itself is stiff enough and strong enough that it supports most normal users and the only times those contact is if somebody is really jumping up and down or running hard or an extreme case preventing the bouncing there. So bouncing has, you know, a little bit and a lot of the spectrum of what it could be and 14 could be there just to prevent it from being too much.
Q. But would you agree, in the event that it were too much, that the runners would touch the belt 12?
A. Yes, 14 would contact 12.
Q. You included an annotated figure on page 64, correct?
A. I did.
Q. The runners 14 include two of the corner circular components that you colored red; is that correct?
A. Yes.
Q. And in the lower component, which the 14 line actually touches, you shaded that blue, correct?
A. Yes.
Q. Do you believe the red component is designed to rotate relative to the blue component?

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A. There's no indication in Tollkien that it needs to.
Q. What would happen when a user is running on the belt 12 and it contacts the tops of the red circles?
A. They'd prevent it from bouncing.
Q. If the red circles were stationary, would that not be a break?
A. A flat regular treadmill with a belt on it has an entire flat surface that the belt runs over and that's not a break.
Q. I believe what you just described is commonly referred to as a deck; is that correct?
A. Yeah, that's what I was thinking of, a deck treadmill with a belt on it, like 12.
Q. And a deck is a very large, smooth, flat surface, correct -- or curved potentially as well? I don't mean not curved, I just mean flat like left to right.
A. Like a sheet.
Q. Yes, like a sheet.
A. Yes, correct, like in Socwell.
Q. And in doing so, you spread out the load over a large surface, correct?
A. Correct, but the deck is also, in those cases, designed to be the supporting structure of the load; the belt is not.
Q. And they're typically lubricated, are they not?
A. There is combination of low friction material and those kinds of things in there, yes.
Q. Do they ever have small round circles protruding from the tops of them?
A. The flat deck treadmills?
Q. Yes.
A. Not that I've seen.
Q. And due to the round shape of the runners, that would create a point load of contact, would it not?
A. Correct.
Q. And what is the equation for friction?
A. Mu times N.
THE REPORTER: I'm sorry, I missed the answer.
THE WITNESS: F, friction, equals mu, which is a Greek letter, looks like a little U, and N is the normal force.
BY MR. KONZ:
Q. Is mu the coefficient of friction?
A. Yes.
Q. A normal force on a point load will be greater than

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it will be on a sheet-like material or shape, correct?
A. Well, we're making a whole lot of assumptions here, right? We're also making an assumption that there aren't a whole lot of these things spread horizontally across underneath the bed there, so there could be a whole number of them, not just this one roll.
Q. Why would a skilled artisan make a component round if it's not going to roll?
A. Well, first of all, we don't know that anybody ever made this treadmill, so the conceptual designs here from Tollkien are, you know, conceptual from the patentee standpoint.
Q. Why would a skilled artisan design a runner to have round components designed to engage a belt if they were stationary?
A. Well, over time as a maintenance procedure, you could rotate them around and have different spots where it's contacting and wearing.
Q. If the red components were bearings or rollers, that would provide a low friction contact point between the runners and the belt, would it not?
A. No, not exactly, because actually what happens then is you would have a higher friction contact point

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because they would stay in contact with each other while they spun them around. You would have a lower friction contact point if they were sliding over each other.

Q. Right, you're referring to the distance between the static coefficient and the kinetic coefficient of friction, correct?

A. Well, also the way the two systems behave, right?

Q. Let me put it a different way because I spoke imprecisely.

The breaking force coming from the runners 14 onto the belt 12 would be substantially less if the red components were rollers than if they were stationary, correct?

A. Likely, yes.

Q. Is it likely or is it yes?

A. Yes.

Q. So if a person wanted to have runners 14 designed to prevent bouncing but not inhibit rotation of a belt, the best way to do that would be to provide a roller or some other type of rolling bearing at the contact point between the runner 14 and the belt 12, correct?

MR. CARROLL: Objection. Form.

THE WITNESS: That would quite likely be

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the better solution, yes.

BY MR. KONZ:

Q. Would it be dangerous to have a belt that was rotating and then all of the sudden had a strong force in the opposite direction of rotation when contact was made between the runners and the belt 12?

A. I would suggest you wouldn't want it coming to a screeching halt or having a significant protuberance in -- I'm sorry, a significant perturbation in the velocity of the belt.

Q. In annotated Figure 1, there are white circles that are unshaded. Do you see those?

A. In item 14?

Q. Yes, sir, in your annotated figure.

A. Yeah, it may actually be yellow, but I see what you're talking about. At the center of the red spot?

Q. Yes. Are those located at the approximate center point of the red circles?

A. They appear to be.

Q. If the red circles were rollers, where would you put the axis of rotation?

A. At the center.

Q. So either the unshaded or yellow circles in your

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annotated Figure 1 are located at the location that you would want to use as the axis of rotation, correct?

A. Likely, yes.

Q. Is it your opinion that those yellow or white circles show axis for the rollers, the red circles?

A. They could be rivets.

Q. Would you agree that when the red circle contacts the belt 12, you will have a force going in this drawing forward or backward, your force factor, and that would be generally tangential to the top of the circle?

MR. CARROLL: Objection. Form.

THE WITNESS: Yeah, that's correct, it would be tangential to the contact point between the belt and the circle towards the rear.

BY MR. KONZ:

Q. And then there would be a moment arm extending between the white circle and that force factor, correct?

A. There's definitely radius there, yes.

Q. Would you agree that it would be difficult to constrain movement of a circular component with a single fastener located at its center?

A. I mean, if you had enough planting force and the

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friction were high enough between the red part and the blue part, you could do it.

Q. Would it be more robust to include multiple fasteners that are eccentric relative to the center of the red circle?

A. Tollkien doesn't speak anything about what this assembly is, right? We don't know that there's not other methods -- I mean, there are other methods of getting things not to move relative to one another other than just the little yellow thing shown in the middle there of the circle.

Q. I understand that Tollkien is silent. I'm asking you general engineering questions based on your opinion that that is a fastener.

So I'm going to repeat the question: Would it be more robust to include multiple fasteners that are eccentric relative to the center of the red circle if the goal is to prevent its rotation?

A. That would be a useful method, yes.

Q. If hypothetically the red circles rolled, would you consider those to be bearings?

A. Not necessarily. They could just be discs with a hole through them, but they could be cylinders like the rollers.

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Q. Why would a roller mounted on an axle not qualify as a bearing?
A. Often the bearing is the component that is between the roller and the axle. I think roller is moving relative to the axle.
Q. What is a journal bearing?
A. It's a bearing with cylindrical bearing balls in it -- not balls. They're cylindrical as opposed to spherical.
Q. I'm sorry, can you answer that again? What is a journal bearing?
A. If I recall -- I would have to go look for sure -- it's a bearing that has the rotational elements that are supposed to be spherical or actually cylindrical.
Q. In your report, you dispute that the runners 14 are -- I want to make sure I get it right.
Dr. Blair, in your report you dispute that the runners 14 are coupled to the frame; is that correct?
A. Yeah, paragraph 114, I say, "A person of ordinary skill in the art would not necessarily understand that Tollkien's runners 14 are coupled to the frame." I say, "Tollkien itself is silent on it of how the runners 14 are attached to the rest of the

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disclosed device advice. The POSA would therefore recognize that any number of arrangements are possible."
Q. You do agree that the runners 14 cannot float in space as shown without some sort of support?
A. Yes.
Q. In a treadmill, what forms the main support structure?
A. The frame.
Q. Are all of the components on a treadmill ultimately supported by the frame?
A. Well, if the treadmill is free standing and the whole system moves together, then yes.
Q. Is it your opinion that the runners 14 would have to be eventually joined to the frame albeit through an intermediary component?
A. Well, one possible option is you could have the front cylinder 2 and the rear cylinder affixed to a -- if you didn't want to move the whole treadmill around as an individual unit, you could actually mount all the individual components to the floor and it would all function the same.
Q. Have you ever seen a commercial treadmill that was designed that way?
A. No, but Tollkien is silent on how it's put

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together.
Q. Hypothetically, if the runners 14 were connected to the frame through an intermediary component, do you believe that that would meet the claim limitation coupled to the frame?
A. The terminology for coupled -- column 32 in the '005 patent, the term coupled means joining of two members directly or indirectly to one another, so as you just described it to me, that sounds like what you just described.
Q. Tollkien 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.
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

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attached to the floor as opposed to the frame?
A. That could be an example, yes.
Q. How would you suspend the runners 14 between the front and rear pulleys as you suggest in paragraph 114, assuming that this treadmill is mobile?
A. Well, there would probably need to be an arrangement of connection points of intermediary pieces that would eventually end up coupled to a frame.
Q. So how would that arrangement not meet the claim limitation of coupled to the frame when the '005 patent explicitly states that indirect coupling is included in it?
A. Well, I'm not saying it wouldn't, but I'm trying to look at this without the benefit of hindsight from the '005.
MR. KONZ: Mr. Blair, I've completed all the questions that I would like to ask on cross here.
MR. CARROLL: Okay. I don't have any redirect.

(Deposition concluded at 3:16 p.m.)

STATE OF MICHIGAN)
COUNTY OF OAKLAND)

Certificate of Notary Public

I do hereby certify the witness, whose attached testimony was taken in the above matter, was first duly sworn to tell the truth; the testimony contained herein was reduced to writing in the presence of the witness, by means of stenography; afterwards transcribed; and is a true and complete transcript of the testimony given. I further certify that I am not connected by blood or marriage with any of the parties, their attorneys or agents, and that I am not interested directly, indirectly or financially in the matter of controversy.

In witness whereof, I have hereunto set my hand this day at Clarkston, Michigan, State of Michigan.

I hereby set my hand this day, October 24, 2024.

Karen Fortna

Karen Fortna, CRR/RMR/RPR/CSR-5067
Notary Public, Oakland County, Michigan
My Commission expires 4/30/2025

Exhibits

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Exhibit 1031 4:6 23:2,4 54:17

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