

Exhibit 1014



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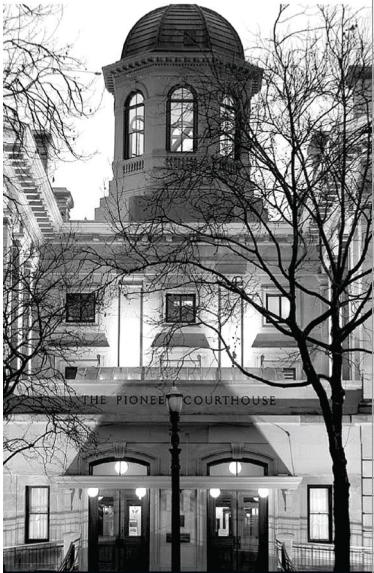
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**UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD**

PAINTEQ, LLC,

Petitioner,

v.

ORTHOCISION, INC.,

Patent Owner.

IPR2022-00335

Patent No. 10,426,539

Attorney Docket No. 013438.021

DEPOSITION OF

VICTOR VASILE ZAPOROJAN, MD

TAKEN ON

FRIDAY, OCTOBER 14, 2022

9:35 A.M.

HAMPTON CONFERENCE CENTER

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CROSS-EXAMINATION BY MR. LYTVYN

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REDIRECT EXAMINATION BY MR. NELSON

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4	1001	Patent US 10,426,539 B2. Date of	40
5		Patent: Oct. 1, 2019.	
6	1012	Patent US 8,361,152 B2. Date of	57
7		Patent: Jan. 29, 2013.	
8	1013	Patent US 8,882,818 B1. Date of	84
9		Patent: Nov. 11, 2014.	
10	1014	Patent US 8,740,912 B2.	102
11	1015	Patent US 9,451,986 B2. Date of	109
12		Patent: Sept. 27, 2016.	
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14		Patent: Apr. 24, 2012.	
15	1019	Patent US 9,421,109 B2.	116
16	1020	Patent US 6,468,309 B1.	127
17	2001	Declaration of Victor Zaporozhan, MD	17
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1 DEPOSITION OF

2 VICTOR VASILE ZAPOROJAN, MD

3 TAKEN ON

4 FRIDAY, OCTOBER 14, 2022

5 9:35 A.M.

6
7 VICTOR VASILE ZAPOROJAN, MD, having been duly sworn,
8 was examined and testified as follows:

9 CROSS-EXAMINATION

10 BY MR. LYTVYN:

11 Q. Okay. Let's begin.

12 Dr. Zaporojan, please state your full name
13 for the record.

14 A. Victor Zaporojan.

15 Q. And you are aware that you are being
16 deposed in the case IPR2022-00335 filed against
17 United States Patent 10,426,539?

18 A. Yes.

19 Q. And are you under any unusual stress,
20 medical, physical condition, or any medication that
21 would prevent you from lawfully and truthfully
22 answering the questions?

23 A. No.

24 Q. And you are aware that this is a
25 deposition, so the transcript that will be produced

1 today by the court reporter is going to be made
2 public and it's -- so it's going to be filed with
3 the United States Patent Trademark Office, and it
4 will become part of the public record?

5 A. Yes.

6 Q. And have you ever been deposed before?

7 A. Yes.

8 Q. How many times?

9 A. A few times.

10 Q. So you are probably familiar with
11 deposition rules, but just to set the framework,
12 unlike like regular conversation, the deposition is
13 being recorded by the court reporter. So it will
14 make her job a lot easier and our transcript more
15 clear if we speak slowly.

16 MR. LYTVYN: And if, Court Reporter, if
17 you have any trouble hearing anything or would like
18 us to repeat anything, please let us know.

19 THE COURT REPORTER: Yes.

20 Q. Also, it's very important that we take
21 turns speaking, so at least wait until I finish
22 asking my question and making a statement before you
23 begin your answer, and I will do the same.

24 A. Yes.

25 Q. Also, because this is not being recorded

1 on video and everything is in the transcript, please
2 make sure that all of your answers are verbal and
3 not by head nods or any gestures.

4 A. Yes.

5 Q. And you understand that you have a duty to
6 provide full and complete answers to all the
7 questions, and if you need additional information or
8 if you need to consult additional documents to
9 refresh your memory, then please request, and if
10 it's appropriate we will provide you with that
11 document.

12 A. Sounds good. Thank you.

13 Q. So let's begin with your -- with your
14 background. I understand you have a medical degree;
15 is that correct?

16 A. Yes.

17 Q. Is your degree specialized in any type of
18 particular medical practice?

19 A. Yes. After getting the medical degree, I
20 completed orthopedic surgery residency program.

21 Q. And do you have a bachelor's degree?

22 A. No.

23 Q. So your medical degree, just walk us
24 through your educational background after
25 completion of high school because my understanding

1 **is that you received your medical degree in Molvova.**
2 **Could you walk us through what the educational**
3 **process looks like over there for the medical**
4 **degree?**

5 A. Yes. So after high school, the medical
6 school is six years in duration. So it's a little
7 bit different than the states. It just takes
8 longer, but it's a full traditional European six
9 years program, and after graduation, you can get the
10 medical doctorate degree.

11 Q. **And are you licensed to practice medicine**
12 **in the United States?**

13 A. No.

14 Q. **And when -- have you ever practiced**
15 **medicine as a medical doctor?**

16 A. Yes.

17 Q. **When was that?**

18 A. So I practiced before the year 2000. So I
19 still have an active -- kind of, like, license in
20 Molvova. And I also had a license to practice in
21 Germany; that has expired.

22 Q. **And when you performed medical procedures,**
23 **what kind of procedures were those?**

24 A. Spine surgery procedures and general
25 orthopedic procedures, like knee surgery, hip

1 surgery, fractures.

2 **Q. And how many surgeries would you say that**
3 **you personally performed?**

4 A. I can give you a range, probably.

5 **Q. Yes. That's sufficient?**

6 A. In a given year, that would be a couple
7 hundred so --

8 **Q. How many years?**

9 A. Three years.

10 **Q. Three years?**

11 A. Yes.

12 **Q. So about 300 surgeries?**

13 A. More like maybe 700 surgeries.

14 **Q. Oh, okay.**

15 **And any of those pertain specifically to**
16 **sacroiliac joint surgeries?**

17 A. Yes, for the spine, yes.

18 **Q. And how many --**

19 **MR. LYTUVYN:** And, Court Reporter, I'm
20 going to refer to sacroiliac as -- sacroiliac joint
21 as SI joint to make things easier, suggest that it's
22 clear, for the record, a SI joint is an abbreviation
23 for sacroiliac joint.

24 **Q. So how many other surgeries would you say**
25 **were specific to sacroiliac joint?**

1 A. It would be hard for me to provide you an
2 exact number, because it's been more than 20 years
3 ago, but it was part of the practice. It was part
4 of the regular practice. Whenever we had a case
5 that involved the sacroiliac joint, it was part of
6 the surgery.

7 **Q. And did those surgeries commonly involve**
8 **implants?**

9 A. Yes. Yes. Yes, spinal implants,
10 interbody fusion devices, implantation.

11 **Q. So would you say that your experience that**
12 **pertains to spinal surgery in general also**
13 **translates to the being familiar with a SI joint?**

14 A. Yes.

15 **Q. And why is that?**

16 A. Just as a general training as an
17 orthopedic surgeon as well as performing spine
18 surgeries, so that's -- that makes me familiar.

19 **Q. Are there any major differences between**
20 **general spinal surgery versus something specific to**
21 **the SI joint?**

22 A. I mean, the anatomy is different, right.
23 So the SI joint is a little bit larger.
24 It's got, like, the sacrum is concave, and then the
25 ilium is kind of like convex surface and more of a

1 fiber cartilage, and it doesn't really move much,
2 right.

3 So when you look at the interbody type
4 area, so there is much more movement, more flexion,
5 or rotation versus the SI joint has got very limited
6 mobility.

7 **Q. And you referenced the articular surfaces**
8 **of sacrum and the ilium.**

9 A. Yes.

10 **Q. Are those a -- what do those look like?**

11 A. It's a just an articulating joint between
12 the sacrum and the ilium, and there is an
13 articulating surface, but traditionally, let's say,
14 if I was to compare with facet joint, right. So
15 those are classical synovial joint, and they have a
16 capsule, and there is hyaline cartilage on
17 articulating surfaces.

18 **Q. And are those surfaces mainly flat and**
19 **planar or irregularities on the articular surfaces**
20 **of the sacrum, ilium?**

21 A. So the -- so the sacrum one is the -- is
22 kind of like concave, which the best way to describe
23 it, it's kind of like -- it has -- it's more like a
24 -- similar to a cavity type, right, versus the ilium
25 is more of a convex shape. So that's like the type

1 of joint, articulation.

2 **Q. And about how far -- what's the distance**
3 **between those two surfaces in a healthy SI joint?**

4 A. It would be patient dependent.

5 **Q. So just give me --**

6 A. Depends on the patient.

7 **Q. What would be a range?**

8 A. I would be hesitant to provide the
9 specific number.

10 **Q. So you are not familiar with what -- what**
11 **the separation distance between the articular**
12 **surface of the sacrum and the ilium would be just in**
13 **a general human patient?**

14 A. It would be different from patient to
15 patient, and also it depends on -- when you ask the
16 specific distance, it depends if you are looking at
17 the peripheral of the joint, by looking at the
18 center of the joint. So it depends on the exact
19 location, but the space is very, very minimal, if
20 anything, and the key is that it's a fiber
21 cartilaginous tissue, rather than just regular
22 cartilage that you see on the joints.

23 **Q. And why is that important?**

24 A. It's important because it's limited
25 mobility in that joint, and if you think of movement

1 within the joint, it's in the world of, like let's
2 say a millimeter and a half, so it's a very, very
3 minor movement within the joint.

4 **Q. And just to get back to the distance**
5 **separating the two bones, so the movement between**
6 **them is in the order of a few millimeters, and that**
7 **distance would be on an order of what distance?**

8 I know it depends on each particular
9 patient and probably varies with age, but if you can
10 just give us a range of a typical patient that you
11 would expect, what's the distance between those two
12 bones?

13 A. So the distance between the two, the
14 sacrum and the ilium within the joints?

15 **Q. Yes.**

16 A. I mean, I would have to look at, let's
17 say, at the -- usually, there are publications,
18 okay, that would provide the topographical
19 anatomical measurements within the joint because you
20 have the area of the periphery. You have the area
21 in the center so it's -- it's not uniform, okay. So
22 that's probably the best way to describe it. It's
23 not uniform. Depending where you are within the
24 joint, that would determine what's the distance
25 between those two bones.

1 Q. How much does the distaste vary? Can you
2 provide some numerical ranges?

3 And we understand that it's variable, and
4 it depends on an individual patient, and also where
5 we are in the joint, but just in general, as an
6 expert who is opining on procedures that pertain
7 specifically to the SI joint, what is your
8 understanding, for the record, of the distance,
9 articulating distances, at least what's a common
10 range that a surgeon would expect to see on any
11 given day when treating a patient?

12 A. Okay. So because it's so much
13 variability, also depending on age of the patient,
14 right. Depending on patient own anatomy, I would
15 prefer to just kind of maybe check on the literature
16 reference, and then providing exact number rather
17 than giving you a number right away.

18 Q. So just to make it clear for the record,
19 this time without referencing any external
20 literature, are you unable to provide a range of
21 typical dimensions for the distance between
22 articulating surfaces of the sacrum, ilium, and the
23 SI joint?

24 MR. NELSON: Objection. Asked and
25 answered.

1 **THE WITNESS:** Because there is so much
2 variability, I would be hesitant to specifically
3 give out one number because the question has to be
4 very specific. Let's say the age of the patient is
5 30 years old. It's a male. The height of the
6 patient is this value. The BMI of the patient is
7 this number. It's just there are many variables
8 that would determine a specific number, but I can
9 give you another number, which is more relevant, and
10 the movement within the joint is typically about 1.5
11 millimeters. So that's what's important from a
12 surgical point of view and from a functional point
13 of view for the joint.

14 **BY MR. LYTVYN:**

15 **Q.** So you are unable to provide any numerical
16 range?

17 **MR. NELSON:** Objection. Asked and
18 answered.

19 **THE WITNESS:** Yeah. It's just based on
20 the way the question was asked, it's just
21 insufficient details in order to provide the
22 specific number.

23 **BY MR. LYTVYN:**

24 **Q.** Okay. I will rephrase the question.

25 In a human patient from infancy to

1 **somebody who is their later years with various types**
2 **of weight, BMI, and et cetera, what would you set as**
3 **the minimum distance, and what would you expect to**
4 **be the maximum distance?**

5 A. Again, it's -- usually -- usually, you
6 don't describe it as minimum or maximum distance.
7 You describe it as -- it's more like a bell curve.
8 You have a general population, and then you study
9 within that general population what's the most
10 common, and then you have the standard deviation.
11 Let's say within one standard deviation, within two
12 standard deviations. So it's in the world of
13 milometers, just to give you kind of like a range,
14 it's in the world of millimeters.

15 But then you have kind of like the
16 standard deviation one, two standard deviations
17 because you have billions of people on the planet,
18 and somebody is, let's say, 5 feet tall. Somebody
19 else is 7 feet tall. That all makes an impact, one
20 specific anatomy and specific size. So because of
21 that, I would be hesitant to provide one specific
22 number, and there are studies. There are anatomical
23 studies.

24 **Q. Are you familiar with those studies?**

25 A. I can check the literature, but I'm sure

1 there are studies.

2 **Q. Have you ever reviewed any of those**
3 **studies when you rendered your expert opinion in the**
4 **declaration?**

5 A. I'm not sure if I specifically looked for
6 those studies because it's more of a general
7 knowledge of the anatomy. So I didn't, again, feel
8 like it was specifically necessary to search for
9 those at the time. I did not feel like it was
10 specifically necessary to search for those numbers
11 for the purpose of the patent application.

12 **Q. So I see that you have your declaration in**
13 **front of you?**

14 A. Yes.

15 **Q. What's the exhibit number for the court**
16 **reporter for Dr. Zaporozhan declaration? So it's**
17 **exhibit 2001, that's what we are referring to now.**

18 (Exhibit 2001 identified for
19 identification.)

20 **Q. So what documents have you reviewed in**
21 **your preparation of the declaration that was filed**
22 **in this case?**

23 A. You expect me to say the list of documents
24 that we reviewed?

25 **Q. So I will help you. On Page 2, Paragraph**

1 **4.**

2 A. Yes.

3 **Q. Could you read Paragraph 4 for the record,**
4 **please.**

5 A. Yes. So I reviewed the patent '539, the
6 replacement claims, the prior art. So I reviewed
7 the patent.

8 **Q. Could you please read the Paragraph 4.**

9 A. Oh, read the Paragraph 4.

10 **Q. Yes.**

11 A. Okay. So I have reviewed and analyzed the
12 '539 Patent, the replacement Claims 32-35, the
13 Petition, all exhibits associated with the Petition,
14 including the prior art references relied on Painteq
15 in the Petition, and the Declaration by Dr. Jeffrey
16 Henn in support of the petition.

17 **Q. And about how much time would you say that**
18 **you spent in reviewing and analyzing these**
19 **documents?**

20 A. Overall?

21 **Q. To prepare your declaration, yes.**

22 A. Anywhere between 20 and 30 hours.

23 **Q. And you said you reviewed all exhibits**
24 **associated with the petition, correct?**

25 A. Yes.

1 Q. And in any of those exhibits, do you
2 recall seeing any information regarding the
3 distances between the sacrum and ilium articulating
4 surfaces and general human population?

5 A. I don't recall.

6 Q. And you are unable to provide for the
7 record, a numerical range for those distances?

8 A. It's in the world of millimeters, but I
9 will be hesitant to specifically pick a particular
10 number.

11 Q. 1 millimeter --

12 MR. NELSON: Objection.

13 Q. -- 2 millimeter. 50 millimeters 150
14 millimeters, that's --

15 A. Yeah. It's -- my preference is not to
16 provide the specific number, but it's in the world
17 of millimeters.

18 Q. One of the questions I asked you when we
19 started the deposition is, you said you understand
20 that you are under obligation to provide full
21 answers to the best of your ability to all of the
22 questions.

23 To answer any question as "I prefer not to
24 answer," is not an adequate answer in a deposition.
25 So I will take your best guess, and just let me know

1 **what you think that range would be as an expert**
2 **who's opining on technology pertaining to a SI**
3 **joint.**

4 A. Again, because there are so many
5 variables, I would just need more information in
6 order to provide a more specific answer and to maybe
7 check.

8 Q. So I will be your sample patient. I'm 36
9 years old. 5 foot 8, weighing 170 pounds.
10 Generally healthy male.

11 What would you expect to see when you look
12 at my SI joint?

13 A. Where are we within the SI joint? Are we
14 in the middle of the SI joint?

15 Are we at the periphery?

16 Q. We have to decide where typically an
17 implant would be inserted. You said you performed
18 SI joint surgery. So where at the site would it be
19 inserted?

20 A. Posterior area. All right. And then you
21 are looking at the distance between the bone of the
22 sacrum and the bone of the ilium.

23 Q. Their articular surfaces.

24 A. So the distance between their articular
25 surfaces?

1 **Q. Yes.**

2 A. So at the surface of the fiber cartilage,
3 for one, from ilium, and the articular surface from
4 the sacrum?

5 **Q. Yes.**

6 A. And you are looking for that distance?

7 **Q. Correct.**

8 A. So I would say that it's just a few
9 millimeters, just very small distance, if any.
10 Yes.

11 **Q. So very few still, not -- give me a best**
12 **guess.**

13 A. Still not? Okay.

14 **Q. Still not an adequate answer to the**
15 **question.**

16 A. Okay. All right. So then I will -- best
17 guess would be, let's say, 2, 3 millimeters, so
18 hardly any space.

19 **Q. Okay. Let's move on.**

20 **So with respect to a SI joint, what is the**
21 **extent of your full experience outside of just the**
22 **surgeries that you performed during medical**
23 **residency?**

24 A. Specifically to the SI joint?

25 **Q. Yes.**

1 A. So I was --

2 **MR. NELSON:** Asked and answered.

3 **THE WITNESS:** Sorry?

4 **MR. NELSON:** Go ahead.

5 **THE WITNESS:** Could that be repeated,
6 please?

7 **MR. NELSON:** It was an objection.

8 You can answer. Go ahead and answer the
9 question.

10 **BY MR. LYTVYN:**

11 **Q. What was the answer?**

12 **The question was: Please explain the**
13 **extent of your experience with respect to SI joint.**

14 A. Okay. So in addition to that, I was part
15 of the development team at Boston Med. I worked for
16 four years, and we were developing various spinal
17 implants, and we even patented some of the designs.
18 But some of the -- kind of like some of the designs
19 we were working on, could have been potentially used
20 in the SI joint. So that's another part of my
21 experience.

22 **Q. So you developed spinal implants?**

23 A. Yes.

24 **Q. Okay. And could have been used for a SI**
25 **joint?**

1 A. Yes.

2 **Q. And do any of those implants involve**
3 **surgical screws?**

4 A. Yes. Yes.

5 **Q. What percentage would you say?**

6 A. Percentage of?

7 **Q. Of the implants that you have developed**
8 **for spinal surgeries, involved surgical screws.**

9 A. So when I say -- like, from -- are they
10 implants that I have developed? How many of those
11 were spinal screws? Because percentage implies part
12 of something.

13 **Q. Yes. So you said as a part of your**
14 **experience, you have developed many implants for**
15 **spinal implants?**

16 A. Yes.

17 **Q. So I just wanted to know, roughly, how**
18 **many of those involved some kind of surgical**
19 **screws.**

20 A. Okay. I mean, several designs were with
21 the spinal screws, pedicle screws, and screws that
22 --

23 **(Reporter requested clarification.)**

24 A. Pedicle, P-E-D-I-C-L-E, pedicle screws,
25 and screws that could be used for the SI joint.

1 And I have also developed screws that are
2 used in the foot and ankle joint as well, and they
3 also have some resembling type of designs that could
4 be used in SI joint as well.

5 **Q. So you referenced that some of your**
6 **technology has been patented.**

7 A. Yes.

8 **Q. I wanted to ask you a question pertaining**
9 **to the patent section of your CV. There is a**
10 **section that says, "Patents pending." What is your**
11 **understanding of the term "patents pending"?**

12 A. Yes. So the patent application was
13 submitted with the patent office, and the patent
14 office has the opportunity to either grant the
15 patent, that's the best-case scenario, or they might
16 have questions and not issue a patent, so that's
17 why, because those patents were not granted, but
18 they were submitted to the patent office. That's
19 why I placed them in that category.

20 **Q. So you are aware that all of these patent**
21 **applications have been rejected and subsequently**
22 **amended?**

23 A. Frankly, I don't know, like, each -- the
24 fate of each individual patent application because
25 this was through my work, right, and then it's owned

1 by the company. I'm the inventor, co-inventor in
2 those patents. So roughly I'm co-inventor in more
3 than 20 patent applications for various medical
4 devices, orthopedic implants, and about 10 patents
5 were issued.

6 **Q. Okay. The term "pending" in the legal**
7 **sense, implies that the patent application is being**
8 **examined, so a rejected patent application is no**
9 **longer pending, so I just wanted to clarify that**
10 **point.**

11 A. Oh, thank you. I will update my resum? to
12 make the verbiage a little more clear. So I'm not
13 the lawyer but learning every day.

14 **Q. It's okay.**

15 **(Exhibit 2002 identified for**
16 **identification, a CV.)**

17 **MR. LYTVYN:** And I should have said this
18 at the beginning, but we will stop maybe every hour
19 or so to take just a quick break. If you need a
20 break before that, just let me know, and we can do
21 that. And we will probably break somewhere around
22 noon, 12:30, whenever is a good stopping point for
23 lunch, and then we will continue our deposition
24 afterwards.

25 That being said, let's take a five-minute

1 bathroom break, and then we will reconvene in five
2 minutes. Thank you.

3 **THE WITNESS:** Sure.

4 **THE COURT REPORTER:** Off the record.

5 **(Off the record at 10:08 a.m.)**

6 **(On the record at 10:15 a.m.)**

7 **MR. LYTVYN:** Back on the record.

8 Mr. Banks, can you hand the
9 Dr. Zaporojan the appendix to the Motion to Amend
10 that was filed by Orthocision.

11 A. Thank you.

12 **(Document tendered to the witness.)**

13 **MR. LYTVYN:** For the record, this is an
14 appendix to the Motion to Amend filed by
15 Orthocision, and this appendix includes claims 32
16 through 35 that were submitted by the patent owner
17 as substitute claims for original claims 26 through
18 -- 26, 27, 28, and 31.

19 **BY MR. LYTVYN:**

20 **Q. Do you recognize this document, Dr.**
21 **Zaporojan?**

22 A. Yes. I see here the placement claims, 32
23 through 35, yes. I reviewed them for patentability,
24 yes.

25 **Q. About how much time did you spend**

1 **reviewing the claims?**

2 A. The claims 32 through 35?

3 **Q. Yes. You said you analyzed their**
4 **patentability. How much time did you spend in the**
5 **office?**

6 A. The overall analysis on the case was about
7 20, 30 hours. So the claims also is a few hours. I
8 didn't specifically break it down to, like, how much
9 I reviewed the claims, how much -- yeah. I'm
10 familiar with them.

11 **Q. Understood and did you discuss**
12 **patentability of the claims with counsel for patent**
13 **owner?**

14 A. Yes, I did.

15 **Q. Let's start with Claim 32, and let's go**
16 **line by line, and explain to me your understanding**
17 **of this claim.**

18 A. Okay. So the 32 claim is a method for
19 recurring -- Claim 32 is a method for repairing a
20 sacroiliac joint -- repairing of a patient
21 comprising --

22 **Q. Let's stop there for a second.**

23 **Two questions were with respect to this**
24 **preamble. What is your understanding of the term**
25 **"repairing"?**

1 **How do you repair a SI joint?**

2 A. You modify it in such a way the patient
3 feels better, right.

4 So if the patient has pain in the
5 sacroiliac joint, then some procedure is done that
6 makes the pain go away, that's a repair.

7 **Q. And second question with respect to this**
8 **preamble is the term of "comprising"; what is your**
9 **understanding of this term?**

10 A. So it includes several elements. Here you
11 see A, B, C, D, and E, so there are five -- kind of
12 like five elements that describe that process.

13 **Q. From an infringement and validity**
14 **standpoint, if the process has additional steps**
15 **outside of the numerated steps, A through E, what is**
16 **your understanding in terms of whether that process**
17 **would read on Claim 32?**

18 A. So let's say right now, we have five
19 paragraphs here, right?

20 **Q. Correct.**

21 A. And then you are saying, What if there are
22 six or seven?

23 **Q. Correct.**

24 A. So those two other -- let's say seven
25 instead of five, and then five that are listed here

1 are matching perfectly the five from the
2 application?

3 **Q. Yes.**

4 A. And then what's the relationship between
5 the two? I mean --

6 **Q. Correct.**

7 A. -- two processes.

8 **Q. Yes, that's correct?**

9 **MR. NELSON:** Objection to the prior
10 question, compound, and outside the scope of
11 direct.

12 **THE WITNESS:** It's a bit -- it's almost
13 seems it's more like a legal question, right.

14 You are asking me like a legal
15 assessment?

16 **BY MR. LYTUVYN:**

17 **Q. Absolutely. It's a legal question, and**
18 **you are opined on patentability of these claims, so**
19 **it's critical that you understand what**
20 **patentability, and also just want to set the ground**
21 **to see whether -- what's your understanding of the**
22 **term "comprising".**

23 A. Okay. Yes. So the way I reviewed them
24 is, I made sure that I reviewed the prior art,
25 right. So they were not described anywhere else in

1 the prior art.

2 And, secondly, I made sure that the --
3 they are non-obvious to someone skilled in the art.

4 **Q. So, hypothetically, if you encountered a**
5 **prior reference that had elements A, B, C, D, E, and**
6 **then recited additional steps, would that prior art**
7 **reference a --**

8 **MR. NELSON:** Objection, speculation.

9 **MR. LYTVYN:** What is speculative about
10 that question, counsel?

11 **MR. NELSON:** Finishing the question about
12 what the elements are.

13 **MR. LYTVYN:** It's a prior art reference
14 that comprises elements A, B, C, D, and E as they
15 are described --

16 **(Overtalking/simultaneous colloquy.)**

17 **MR. NELSON:** -- reference specifically
18 the elements in the claim; is that what you are
19 saying.

20 **MR. LYTVYN:** Yes. That's correction, and
21 it includes additional steps. It's a method.

22 **BY MR. LYTVYN:**

23 **Q. So this hypothetical prior reference**
24 **includes the steps enumerated in A through E, but**
25 **then it includes additional steps. Would that**

1 **anticipate Claim 32?**

2 A. So if it lists exactly every single claim,
3 then it would, right?

4 **Q. (Nodding head up and down.)?**

5 A. If it's listing A, it's listing B, it's
6 listing C, it's listing D and E, every single
7 element, I just haven't found something like that.

8 **Q. Okay.**

9 A. In my --

10 **Q. Okay. Let's move on. Please read**
11 **limitation A.**

12 A. So: "Creating incision in the patient's.
13 skin in a position proximal to the patient's
14 sacroiliac joint to allow access to the posterior
15 portion of the sacroiliac joint."

16 **Q. And what is your understanding of this**
17 **limitation?**

18 A. So it's describing the process, right, of
19 the surgical procedure in order to get surgical
20 access to the joint as skin incision needs to be
21 performed and an access portal has to be created to
22 visualize the joint.

23 **Q. Let's move on to limitation B.**

24 A. Limitation B is: Inserting a working
25 channel into the incision and spreading the

1 posterior portion of the sacroiliac joint with an
2 inserted end of the working channel.

3 **Q. So what is your understanding of this**
4 **method step?**

5 A. This is just describing that a surgical
6 tool is going to be used during the surgical
7 procedure to spread the muscles around the area or
8 other soft tissues to create a surgical access. So
9 a working channel could be created with tissue
10 dilaters, that typically are used during the
11 surgical procedure, and the goal is to get a good
12 visual for the surgeon to access the joint.

13 **Q. What is your understanding of the term**
14 **spreading the posterior portion of the SI joint?**

15 A. It's the -- it's the separation process.
16 So normally, you have -- you have coverage, right,
17 of the bone of the joint. You have coverage with
18 the soft tissue. So instead of cutting something
19 and damaging the muscle or the ligament or the soft
20 tissue, what you can do is kind of spread it apart.
21 It's almost like if you have two pieces of paper,
22 right, instead of cutting through this, you kind of,
23 like, spread it apart. And then you create that
24 visual field that you can use to access the joint.
25 So it's a tissue preservation surgical technique.

1 Q. And in this limitation, it requires
2 spreading the posterior portion of the sacroiliac
3 joint. You just explained that you understand that
4 the spreading part entails separation of the soft
5 tissue.

6 What about separation of the sacrum and
7 the ilium? Is that a part of spreading the joint?

8 A. In this particular case, it's just the
9 soft tissue before the joint.

10 Q. So the distance between the sacrum and
11 ilium remains the same after the spreading step is
12 performed.

13 A. Correct.

14 Q. Let's go to limitation C.

15 A. Yes. It's creating a void in the
16 posterior portion of the sacroiliac joint.

17 Q. Sorry. I should have asked this further.

18 What is your understanding of the term the
19 "sacroiliac joint"?

20 What -- exactly what does the joint
21 entail?

22 What's the SI joint?

23 A. It's from anatomical point of view, it's
24 the connection between two bones. In this case,
25 it's the sacrum and ilium, and they are articulating

1 surface in between those two bones. So that's the
2 joint. That defines a joint.

3 **Q. Is the soft tissue part of the joint?**

4 A. Soft tissue, outside of the joint. It's
5 not part of the joint. Like muscles, ligaments,
6 that could be outside the joint. Those are not part
7 of the joint.

8 **Q. So let's go back to the limitation B one**
9 **more time. So the limitation requires spreading the**
10 **posterior portion of the SI joint. Just a second**
11 **ago, you stated that the term spreading the SI joint**
12 **pertains to spreading the soft tissue.**

13 **And then when asked, What is the SI**
14 **joint? You said that soft tissue is not a part of**
15 **the SI joint. Would you clarify your understanding**
16 **of why spreading the posterior portion of the SI**
17 **joint involves spreading the soft tissue and not the**
18 **bone themselves, even though the soft tissue,**
19 **according to your statement, is not part of the**
20 **joint?**

21 A. Yes. Let me clarify. So spreading is --
22 it's separating the tissues, kind of like pushing
23 them apart, right. And then you can push apart the
24 muscles, the ligaments. You can also push apart the
25 components of the joint as well. So if somebody

1 says that the posterior portion of the joint is
2 spread apart, it's also separating, kind of
3 increasing the distance between each of the
4 components of the joint. So that would also fall
5 into that definition.

6 **Q. Including the sacrum and ilium?**

7 A. Yes. Yes. So that's the clarification,
8 yes. So rather than cutting and -- it would require
9 -- cutting is an irreversible process versus
10 spreading is, you are still preserving the anatomy
11 as much as you can by simply pushing aside, pushing
12 apart anatomical elements within the body.

13 **Q. Just so it's clear for the record, your**
14 **understanding of spreading the posterior portion of**
15 **the sacroiliac joint involves spreading the**
16 **surrounding soft tissue and the sacrum and the**
17 **ilium?**

18 **Am I correct summarizing your statement**
19 **correctly?**

20 A. Yes. That is correct.

21 **Q. Let's take a look at limitation C now.**

22 A. So limitation C is creating void in the
23 posterior portion of the sacroiliac joint.

24 Any specific questions about limitation C?

25 **Q. Could you explain to me how that would**

1 typically be performed during a method of repairing
2 the SI joint?

3 A. So a void creation could be done by using
4 surgical tools. Typically, you have cutting tools,
5 either a drill or a curette. It could be a power
6 tool. It could be just a mechanical tool, but
7 something that would be cutting the tissue away,
8 and by removing the tissue, you will be creating a
9 void.

10 Q. And which tissue are we talking about
11 here?

12 Are we talking about the bone tissue of
13 the sacrum and ilium, soft tissue? Which tissue are
14 you referring to?

15 A. So when you are describing creating the
16 void, within the sacroiliac joint, you would
17 primarily be removing the fibro cartilage tissue
18 type, because that's the most -- that's kind of the
19 articulating tissue type in that area.

20 Q. Okay. And -- sorry, not to keep coming
21 back to this limitation B, but when you are talking
22 about spreading, which involves, we already
23 established, separating the soft tissue and the
24 bones. To what extent are we separating --
25 separating the bones?

1 **What's -- what would be a normal distance**
2 **by which these bones would be spread in a surgical**
3 **procedure?**

4 A. Okay. Yes. So this would depend on the
5 implant that is going to be used in the procedure.
6 Let's say you have a screw that's going to be placed
7 there to fix the sacroiliac joint or some cases,
8 it's in patents, like, they describe wedge type
9 devices, right.

10 So it depends on the -- on the local
11 anatomy, because you don't want to spread too much
12 to have a negative impact on the ligaments that hold
13 the joint together. And you don't want to -- you
14 don't want to tear apart the soft tissue that holds
15 the joint together, right.

16 And you don't want to separate it too
17 little because then you would not have enough space
18 to place the implant. So it's a -- it's an
19 intersurgical decision, and even before you start
20 the surgery, you don't know exactly what would be
21 the best fit, right.

22 But during the surgery, you can make a
23 judgment call, and say, All right, this is the right
24 size for this particular patient, for this
25 particular anatomical location.

1 And that's why majority of the orthopedic
2 implants, spinal implants, they come in different
3 sizes. And they're typically either a millimeter
4 apart or 2 millimeters apart, depending on the
5 application. And the most suitable one is selected
6 that provides the best fit.

7 **Q. So the spreading would increase the**
8 **distance between the sacrum and the ilium by 1 or 2**
9 **millimeters; is that your understanding of the**
10 **extent of the spreading?**

11 A. It would depend on the patient's soft
12 tissue, right.

13 So if it's -- if it's greater mobility
14 there, let's say middle aged female, especially
15 after they had a baby, right. Sometimes they have
16 hypermobility in the sacroiliac joint, and the
17 spreading would be greater, right.

18 So the distance would be greater versus a
19 17th year old male who didn't have any trauma or
20 injuring the area. Then the soft tissue would be
21 holding the joint very tightly. So it's a patient-
22 to-patient variability.

23 **Q. And what would be your expectation going**
24 **into the surgery in terms of numerical ranges of**
25 **what -- obviously, it varies from patient to patient**

1 **as you said, but what -- what would be your**
2 **expectation if you are performing surgery, by how**
3 **much would you expect to spread the bones?**

4 A. So you would want to spread them by a few
5 millimeters, and you would want to spread them to a
6 degree that allows stable fixation. So whatever the
7 spread, whatever the distance that you would be
8 spreading, it's got to be the one that would provide
9 a functional recovery for the patient. That would
10 be the goal, to -- to help the patient not
11 experience pain in that joint anymore.

12 Q. Okay. So to help me visualize this, you
13 previously said that possible range for distance
14 between sacrum and ilium would be 2 to 3
15 millimeters. If we go on with this example, after
16 we spread the joint, what would you expect that
17 distance to be?

18 A. Let's say it could be 5, 7 millimeters.
19 It depends. Again, during the surgery, you're
20 making a decision.

21 Q. Okay.

22 A. Just that there are many variables.

23 Q. Okay. Thank you for that answer. Let's
24 go to limitation D.

25 A. Limitations D says:

1 Inserting a single fusion implant into the
2 void along a path that is substantially parallel to
3 articular surfaces of the sacroiliac joint.

4 **Q. Let's focus on the first part of this**
5 **limitation, "inserting a single fusion implant."**
6 **What is your understanding of this limitation?**

7 A. So it's just one piece. So when it says,
8 "single fusion implant," meaning the implant itself
9 is one piece because some designs or some other
10 implants for the SI joint, they might have two or
11 three different components, right, versus with this
12 type of implant, the fusion is achieved just by
13 using one single implant. It has one component.

14 **Q. Put some context to this.**

15 **MR. LYTVYN:** Mr. Banks, were you able to
16 provide Dr. Zaporozhan with a copy of the patent
17 10,426,539? This is Exhibit 1001.

18 **(Exhibit 1001 identified for**
19 **identification.)**

20 **BY MR. LYTVYN:**

21 **Q. Are you familiar with this document?**

22 A. Yes.

23 **Q. About how much time would you say you**
24 **spent reviewing it?**

25 A. Again, it was part of the overall --

1 **Q. Give me a guess. How much time?**

2 A. A few hours.

3 **Q. A few hours, okay.**

4 A. Yeah.

5 **Q. So let's -- if you could flip to Sheet**

6 **13?**

7 A. Okay.

8 **Q. So starting at Sheet 13 of Figure 52,**
9 **there are several different embodiments of surgical**
10 **implants described in this patent. Have you**
11 **reviewed those?**

12 A. Yes. Yeah. This one, the 52 is the
13 Hilico (phonetic) design.

14 **Q. So if we could go through embodiments**
15 **depicted in figures 52 through 70, and if you could**
16 **please let me know which of these implants you**
17 **consider to be a single fusion implant.**

18 A. Okay. So just look at the figure and say
19 single versus non-single?

20 **Q. Correct.**

21 A. Okay. All right. So 52 is a single.
22 53, single. 54, single. 55, single. 56, not
23 single. 57, not single. 58, single. 59, not
24 single.

25 **Q. I'm sorry. So just to clarify, 58 is the**

1 **same embodiment; that's 56 and 57. It just now**
2 **shows it inserted into the joint.**

3 A. Okay. It's just a very small --

4 Q. Yeah.

5 A. -- small image.

6 Q. Yes. We can refer to them in groups. So
7 **the next embodiment would be --**

8 A. Okay. All right. 56, 57, 58, I think it
9 does require some additional fixation. So I would
10 call it not singular, especially because it has this
11 element, 503, 505, the hook on the side.

12 Q. Okay. And then next embodiment is figures
13 **59 through 62.**

14 A. 59, 60, 61, 62, those are not single
15 because they have -- they have interbody fusion cage
16 with screws.

17 Q. Okay. Next one.

18 A. Then 63, 64, 65 is non-single because it's
19 got the element 703 that allows the expansion of the
20 device.

21 Q. Okay.

22 A. 66, I think is just part of the 65.

23 Q. Yeah.

24 A. It's not the implant. It's not an
25 implant. It's just a component of the implant

1 described in Figure 65.

2 Then 67, I think, is just the implanted
3 view of the 65.

4 Then 68, 69, 70.

5 **Q. That's all?**

6 A. That's all, okay.

7 **Q. So you didn't characterize it. 68 through**
8 **70.**

9 A. It's not single.

10 **Q. It's not single?**

11 A. No. Because if you look at 68, it has the
12 separate element, 805, 803, that require additional
13 adjustment and additional movement. So it's a multi
14 component type of implant.

15 **Q. Okay. Let's go back to limitation D. So**
16 **the path that is substantially parallel to**
17 **articular surfaces of the SI joint, what does that**
18 **mean?**

19 **What kind of path is that?**

20 A. It just describes the trajectory, right.
21 So if you have sacrum plane, anatomical plane and
22 ilium anatomical plane. So the insertion of the
23 implant would go in parallel anatomical plane to
24 this joint, rather than oblique or perpendicular.

25 **Q. Let's move on to limitation E, and it's a**

1 **long limitation, so just read the first part up to**
2 **the first comma.**

3 A. So 32E says, "rotating the fusion implant
4 or a portion thereof in the void, the fusion
5 implant" --

6 **Q. You can stop there. Just --**

7 A. Okay.

8 **Q. So what is your understanding of:**

9 "rotating the fusion implant or a portion
10 **thereof in the void"?**

11 A. You just turn. Turn it clockwise,
12 usually.

13 **Q. And what is the reason for turning it?**

14 A. The reason is to advance the implant in
15 their recipient space, and also because it's got the
16 cutting threads by rotating, you are able to advance
17 the implant into the proper position because if you
18 were just to push it in without rotating, it would
19 -- the threads would prevent you from advancing the
20 implant.

21 **Q. Okay. Would you read the next -- the next**
22 **part of the limitation, and I will just tell you**
23 **when to stop.**

24 A. "The fusion implant having at least one
25 fixation element that penetrates bone tissue in an

1 articular surface of at least one of an ilium, and
2 the sacrum, and the sacroiliac joint as the fusion
3 implant or a portion thereof is rotated."

4 **Q. Okay. So let's -- what is going on here?**
5 **Would you explain to me.**

6 A. So --

7 **MR. NELSON:** Objection. Vagueness.

8 **MR. LYTVYN:** Which part is in vagueness?

9 **MR. NELSON:** Asking him to explain what --
10 asking to explain what the claim language means.

11 **MR. LYTVYN:** I'm asking the expert to
12 provide his opinion as to his understanding of a
13 claim limitation as to whose patentability he
14 opined.

15 **MR. NELSON:** He answered. I don't have
16 any more to say.

17 BY MR. LYTVYN

18 **Q. So what is your understanding of that**
19 **limitation?**

20 A. So the limitation describes the
21 advancement of the fusion implant during the implant
22 insertion, and it describes their rotation of the
23 implant during their -- during the advancement
24 within the sacroiliac joint.

25 **Q. What is your understanding of the term**

1 **"fixation element"?**

2 A. Fixation is redaction in motion.

3 Redaction or elimination of motion; that's what
4 fixation means.

5 Q. And "fixation element"?

6 A. Fixation element would be the implant. It
7 would be the implant that provides the fixation.

8 Q. So is it the implant itself or a
9 particular portion of the implant?

10 A. The implant itself is the fixation. It's
11 serving the function of fixation.

12 Q. And why do you think the claim refers to
13 the implant as the fusion implant and then uses
14 fixation element to refer to the implant itself
15 again?

16 What is your understanding of that?

17 A. Because the -- I'll better provide you an
18 example, right?

19 Q. Okay.

20 A. So you have the body of the implant, and
21 you have the threads surrounding the body of the
22 implant. While the implant is rotated and advances
23 through the bone, the threads of the implant would
24 be cutting into the bone tissue, and those threads
25 would provide that stabilization, that fixation

1 function. But every component of the implant is
2 important in providing a fixation. You can't just
3 have only the threads providing -- without the body
4 of the implant.

5 **Q. And what is your understanding of the term**
6 **"thread"?**

7 A. The term "thread"?

8 **Q. Yes.**

9 A. It's a protrusion that is typically sharp,
10 that's got a sharp edge that allows for -- for
11 cutting into hard tissue such as bone.

12 **Q. And, normally, where would the thread be**
13 **located with respect to the implant?**

14 A. On its lateral sides.

15 **Q. Okay. Let's move on. "So the fixation**
16 **element that penetrates bone tissue in an articular**
17 **surface of at least one of an ilium and sacrum in**
18 **the SI joint as the fusion implant or a portion**
19 **thereof is rotated. Thereby fixing the ilium and**
20 **sacrum in relative lateral positions and the fusion**
21 **implant in the SI joint."**

22 **What is your understanding of the term**
23 **"relative lateral positions"?**

24 A. It's the -- it's the position of the --
25 after the insertion of the implant, right, because

1 when you are distracting the SI joint, you go from
2 the center towards the lateral direction, right.

3 So you have the insertion of the implant,
4 and respectively, the ilium -- the ilium bone would
5 be displaced laterally, and once you stop inserting
6 the implant, then you have the ilium in a more
7 lateral position compared to the original location.

8 **Q. And what does the term "fixing" mean?**

9 A. Fixing means you stopped the motion.

10 **Q. So as you insert the implant, you separate**
11 **the two articular bone surfaces, and then "fixing"**
12 **means that you stop the motion of those bones at**
13 **that point?**

14 A. Yes.

15 **Q. Is that correct?**

16 A. Exactly.

17 **Q. And the final part of limitation E, I will**
18 **just read it into the record. "And no further**
19 **implants of fusion devices are introduced into the**
20 **sacroiliac joint or surrounding tissues after the**
21 **insertion and rotation of the fusion implant or**
22 **portion thereof."**

23 A. Exactly.

24 **Q. So what is your understanding of this**
25 **limitation?**

1 A. Just one single implant is sufficient to
2 achieve fixation. So there is no need to add
3 another screw or another wedge or some other implant
4 to achieve the fixation.

5 **Q. And what if surgery fails?**

6 A. What is your definition of failing
7 surgery?

8 **Q. Have you ever witnessed or performed**
9 **surgery in which the fusion implant got dislodged?**

10 A. You mean during this?

11 **Q. After the implantation.**

12 A. After the implantation. I mean, things
13 happen, yes. But during the surgery, you place one
14 implant, and let's say it's not fixing the joint the
15 way it's supposed to do, you'll back it out, and you
16 use a larger size to achieve the fixation that's
17 desired.

18 **Q. But at that point, would you insert a**
19 **second implant?**

20 A. No. It would still be one implant. It
21 would just be one implant with larger size. It will
22 still be one because you will remove the first one.
23 So by definition is, the implant is the one that
24 stays within the patient, right.

25 So if you use something to try things out

1 during the surgical procedure to just get the more
2 accurate measurement, like a trial, that's not
3 considered an implant, or if you use a smaller size
4 first and see that it doesn't work out, then you
5 replace it with a larger size. And, eventually,
6 it's left in the patient's body, and that's the
7 implant. That stays there, and it's meant to
8 achieve the fixation.

9 **Q. I think that's all the questions I have**
10 **pertaining to Claim 32.**

11 **Let's move on to Claim 33.**

12 A. Claim 33. The method of Claim 32 wherein
13 they have at least one fixation element includes a
14 plurality of flux --

15 All right. So Claim 33 is the method of
16 claim 32 wherein at least one fixation element
17 includes a plurality of flukes, claws, or hooks that
18 penetrate and pull the sacrum and ilium together as
19 the fusion implant is rotated, thereby compressing
20 the sacroiliac joint and securing the fusion implant
21 in the sacroiliac joint.

22 **Q. So here I wanted to ask, what is your**
23 **understanding of "compressing the sacroiliac**
24 **joint"?**

25 A. Yes. So you can provide the compression

1 as well. It's when the vector of force is towards
2 the center; that would describe compression. So you
3 can first distract the joint. So you increase the
4 distance between the bones that are forming the
5 joint, and then you can compress. So you can push
6 it towards the center. So compression would be
7 pushing it towards the center.

8 **Q. So compression involves moving the sacrum**
9 **and ilium closer together?**

10 A. Yes. And we can go back to the example
11 that I provided earlier, right.

12 So middle-aged females after delivering
13 baby, they have hypermobile sacroiliac joints. So
14 there is laxity in the soft tissue, and the distance
15 between the bones is greater. So by compressing the
16 joint, by bringing it closer together, it
17 potentially can provide a solution of relieving the
18 patient's pain.

19 **Q. And then claim -- hold on a second.**

20 Okay. So I'm trying to wrap my head
21 around this compressing the sacroiliac joint. When
22 you are talking about Claim 32, you indicated that
23 the fusion implant is an implant that has threads on
24 the lateral surface, and as it's being driven into
25 the SI joint, it distracts the bones from one

1 **another, the sacral ilium; is that correct?**

2 A. Yes. It could be threads. It could be
3 flukes. It could be claws. It could be hooks. It
4 could be various designs.

5 Q. And after the joint is distracted, how is
6 it being compressed?

7 So as we screw it in, it pushes the bones
8 apart?

9 A. Yes.

10 Q. I follow you. And then how do you
11 compress the joint if we just spread them apart?

12 A. Yes. So you can have, like, a claw,
13 right, that could pull on there from the bone tissue
14 and provide the compression.

15 Q. And after the sacroiliac joint is
16 compressed, what would the distance be between the
17 sacrum and the ilium?

18 We started out with 2 to 3 millimeters in
19 our example, and then in Step B, we spread the joint
20 to 3 to 5 -- I think it was 5 to 7 millimeters; am I
21 correct?

22 A. Yes. Uh-huh.

23 Q. And Step E, we distracted the joint when
24 we inserted the fixation element, so it's more than
25 5 to 7 at that point, right?

1 A. No. I think it would still be at the same
2 level. This is -- compression is -- shows the
3 vector of forces that pull the joint, the bones
4 together. It's -- it doesn't -- so what I'm trying
5 to explain is, it doesn't mean that a smaller
6 millimeter of value would define a compression, no.

7 It's the direction of the force. That's
8 what would define the compression versus
9 distraction. Again, vector of the force pushing
10 outwards and pushing towards separating. It's a
11 force vector.

12 **Q. So does compressing the joint involve**
13 **changing the distance between the sacrum or ilium?**

14 A. Compressing would generally result in
15 redaction in distance.

16 **Q. Okay.**

17 A. Distraction, generally, would result in
18 increasing distance just as a general rule.

19 **Q. Okay. Claim 34. I will just read it into**
20 **the record. The method of Claim 32, wherein:**

21 **"... rotating the fusion implant or a**
22 **portion thereof, draws the articular surfaces of the**
23 **sacroiliac joint together to compress the sacroiliac**
24 **joint and secure the fusion implant in the**
25 **sacroiliac joint."**

1 So this claim uses the term, "draws the
2 articular surfaces."

3 Claim 33 talked about pulling the sacrum
4 and ilium together.

5 In your opinion, is there a difference
6 between these two terms, and if yes, what is that
7 distinction?

8 A. Okay. So I'm just trying to paraphrase.
9 So Claim 33 versus 34 description.

10 Q. Specifically, Claim 33 talks about pull
11 the sacrum and ilium together, and Claim 34 says:

12 "... draws the articular surfaces of the
13 sacroiliac joint together."

14 A. I think it's the same thing. It's just
15 anatomically, all right. So when you describe
16 pulling the sacrum and ilium, you will primarily use
17 the orientation mark, something on the bone surface
18 versus in 34, you have the reference mark or
19 reference point on the articulating surface.

20 Q. And then to compress the sacroiliac joint,
21 is that the same thing as compressing the sacroiliac
22 joint from Claim 33?

23 In claim -- sorry -- let me be clear. Let
24 me paraphrase this for the record.

25 In 34, there is a limitation to compress

1 the sacroiliac joint.

2 In claim 33, there is a limitation
3 compressing the sacroiliac joint.

4 Does the term "compress" have the same
5 meaning that we just discussed with respect to
6 compressing in Claim 33?

7 A. Yes. Compressing in 34 has the same
8 meaning as compressing in 33.

9 Q. So displacement of the sacrum and the
10 ilium toward one another?

11 A. I would not use the word "displacement."
12 I would use the word -- um -- it's a -- I would just
13 leave it with compression, rather than providing
14 interpretation of it.

15 Q. Okay.

16 A. Yeah.

17 Q. And then Claim 35, I will read it into the
18 record.

19 The method of Claim 32, wherein the
20 working channel includes at least one tang
21 protruding from a distal end of the working channel
22 for securing a position of the working channel in
23 the sacroiliac joint.

24 What is your understanding of the term
25 "tang"?

1 A. Yes. So it's another element of the
2 implant that's described as a tang, T-A-N-G. And it
3 could be protruding from the distal, means like from
4 the tip of the implant. It could be --

5 **Q. And what purpose will this tang serve?**

6 A. Sometimes they help to just guide the
7 advancement of the implant. If you have a small,
8 small little tip in front.

9 **Q. And have you ever used the implants with**
10 **tangs?**

11 A. Not built in on the implant itself, but I
12 regularly use the -- kind of like cannulated screws
13 where you have first the -- kind of like the guide.
14 You have a guide that's smaller in diameter. And
15 then you can insert the guide into the cannulated
16 screw. And then the guide would serve you in
17 finding the direction, where you want to implant
18 there, place the implant or how you want to advance
19 the implant. Yeah, it's pretty common. It's pretty
20 common.

21 **Q. Okay. Yeah. I think for this one, we**
22 **have been going for about an hour. I think it's a**
23 **good stopping point. Let's take a break?**

24 **THE COURT REPORTER:** Off the record.

25 **(Off the record at 11:09 a.m.)**

1 (On the record at 11:28 a.m.)

2 MR. LYTVYN: Back on the record.

3 THE WITNESS: Yes.

4 BY MR. LYTVYN:

5 Q. So now that we've covered your
6 understanding of claims 32 to 35 of the '539 patent,
7 which is Exhibit 1001, let's turn your attention to
8 Exhibit 1012, which is U.S. patent 8,361,152, and
9 Mr. Banks will provide you with a copy.

10 (Exhibit 1012 identified for
11 identification.)

12 (Document tendered to the witness.)

13 THE WITNESS: Thank you very much.

14 BY MR. LYTVYN:

15 Q. So do you recognize this document?

16 A. Yes, I do. It's a patent by McCormack,
17 Patent '152.

18 Q. And about how much time did you spend
19 analyzing this document, would you say?

20 A. Same, a few hours. It's always back and
21 forth when I review the documents because of
22 referencing something. Roughly a few hours without
23 a specific number.

24 Q. Let's go to Page 9 of your declaration.

25 A. Yes. I'm already there.

1 Q. So in Paragraph 23, and I will read this
2 into the record you said, McCormack discloses using
3 such wedge like implants.

4 And that paragraph also includes your
5 production of figures 38A and 38B of the McCormack
6 reference, Exhibit 1012?

7 A. Yes.

8 Q. Why did you choose to focus your attention
9 on these figures of McCormack?

10 A. Because I was looking at what McCormack is
11 trying to disclose, which is a wedge like implant,
12 so I felt that 38A and 38B was a good representation
13 of the disclosure --

14 Q. And --

15 A. -- especially because it was used for
16 their facet joint.

17 Q. Okay. And have you reviewed the arguments
18 based on McCormack that are represented in the
19 petition filed in this IPR?

20 A. Yes.

21 Q. And per these figures, the one cited by
22 petitioner?

23 A. Yes.

24 Q. Were there any other figures cited in the
25 petition that you recall with respect to McCormack?

1 A. I will have to look at the document to
2 tell you the figure numbers. I wouldn't be able to
3 tell you without looking at it.

4 **Q. If you could flip the page in McCormack**
5 **and just go to the very next page. For the record,**
6 **which figure numbers are you seeing?**

7 A. 39A.

8 **Q. Through 39D, correct?**

9 A. Yes.

10 **Q. And were these figures presented in the**
11 **petition for the IPR?**

12 A. Can I see the IPR document? Do you have a
13 copy?

14 **Q. At the top of your head, are you familiar**
15 **with these figures?**

16 A. Yeah. I'm familiar with the figures.
17 It's just there were a lot of figures in different
18 documents so it's -- it's better for me to -- to
19 double-check rather than just relying on memory
20 which figure was in which document.

21 **Q. Okay. So --**

22 A. But I'm familiar with the figure, yes.

23 **Q. Okay. Great. So let's take -- I will**
24 **read into the record Paragraph 24 of your**
25 **declaration.**

1 **It says, "Thus, McCormack does not**
2 **disclose or suggest rotating a fusion implant..."**

3 A. Yes, but you got to continue. "In a
4 sacroiliac joint" --

5 Q. "... in the sacroiliac joint to fix the
6 ilium and sacrum in relative lateral positions and
7 fix the fusion implant in the sacroiliac joint, as
8 recited in replacement Claim 32."

9 A. Yes. Because McCormack is focusing on
10 facet joint, which is a different joint in the
11 spine.

12 Q. And claim -- in Paragraph 23 of your
13 declaration, you stated:

14 "McCormack discloses using such wedge-like
15 implants to vertically raise a compressed facet
16 joint, lifting the facet joint vertically with the
17 wedge-like implant that is inserted linearly between
18 facets of adjacent vertebrae without fixing lateral
19 positions of the vertebrae, as shown in figures 38A
20 through 38B of McCormack included below."

21 Now that you are looking at the embodiment
22 of McCormack in figures 39A through 39D, what is
23 your understanding of the inversion process of this
24 implant?

25 A. It describes an inversion of an implant in

1 facet joint, which is different from sacroiliac
2 joint.

3 Secondly, it describes lifting or raising
4 of the compressed facet joint. It shows a vertical
5 change, displacement versus in the sacroiliac
6 joint, you have more of a lateral type of
7 positioning. So it's different. To me, it looks
8 different.

9 **Q. But how would you insert the implant**
10 **that's referenced by numeral 282; that's depicted in**
11 **39A to 39D?**

12 **Could you describe to me the process of**
13 **insertion?**

14 A. So the 39A to 39D most likely is rotated
15 and most likely inserted in a facet joint. I will
16 have to look at if they have a specific description
17 for that.

18 **Q. Yes. The description is provided in**
19 **Column 25 so you can flip the patent. It's up in**
20 **the drawings. Column 25, subparagraph. You can**
21 **refresh your memory. I will read this into it the**
22 **record while you read it to yourself.**

23 A. They describe the insertion of the implant
24 in between the facets, without describing their --
25 their location, actually. And then seeing 25, in

1 Column 25 that they just say, it's inserted.

2 **Q. So if you are performing surgery and you**
3 **were tasked with inserting this implant into the**
4 **facet joint, how would you insert it?**

5 A. Based on the instructions for use for
6 their -- for the implant.

7 **Q. Which is what?**

8 A. Which I don't have in front of me.

9 **MR. NELSON:** Objection. Goes for
10 speculation.

11 **THE WITNESS:** Sorry.

12 **MR. NELSON:** Objection. Goes for
13 speculation.

14 **THE WITNESS:** Yes. So what I'm trying to
15 say here, that Column 25 doesn't -- the only
16 decryption they have, they say it's inserted.

17 **BY MR. LYTVYN:**

18 **Q. Could you read Column 25, Lines 8 through**
19 **10 for the record, please. Starting with "As."**

20 A. Okay. 8 to 10.

21 **Q. Yes.**

22 A. Okay.

23 **Q. "As the screw implant."**

24 A. "As the screw implant."

25 **Q. Would you please read out loud so the**

1 **court reporter can enter this into the record.**

2 A. Okay. Sorry. Which line?

3 Q. 8.

4 A. Line 8.

5 Q. **Can you please read this out loud?**

6 A. Yes. "As the screw implant 282 is threaded
7 progressively further interior, the serrated key may
8 cut bone -- cut bore into the cortical bone of the
9 opposing facet surfaces."

10 Q. **So based on those instructions, if you**
11 **were tasked with inserting the implant depicted in**
12 **figures 39A through 39D, how would you do it?**

13 A. So it could be two ways of doing it. One
14 is by creating a void as a recipient hole, and then
15 over distracting it, and then placing the screw and
16 --

17 Q. **How would you place the screw?**

18 **Just walk me through your steps here.**

19 **There is a surgery table?**

20 A. Yes. So you secure the void, where you
21 are going to place the implant, and then you have a
22 joint distraction instrument that you separate, you
23 spread it apart. And then you can place here the
24 screw inside, and then you release the distraction
25 so the joint contracts again. And then you adjust

1 and place, adjust to its final position.

2 **Q. The motion that you are making with your**
3 **hand, the court reporter cannot transcribe. Would**
4 **you be able to describe it in words?**

5 A. Yeah. So it would be moving, let's say,
6 counterclockwise or clockwise. So that would be one
7 option, or a second option could be simply by
8 rotating the screw inward to advance it.

9 **Q. Would you be able to go to Page 4 of the**
10 **declaration?**

11 A. Yes.

12 **Q. And read Paragraph 9, please.**

13 A. Says, "I reserve the right to supplement
14 or amend this declaration if additional facts and
15 information that affect my opinions become
16 available."

17 **Q. In light of what you just read in**
18 **McCormack and the embodiment depicted in Figures 39A**
19 **and 39B, would you like to change the portion of**
20 **your statement that says:**

21 **"McCormack does not disclose or suggest**
22 **rotating a fusion implant..."**

23 A. So I would not change just because they
24 are focusing on facet joint. And the way they
25 describe the placement of the implant at this point

1 in time, I would not change.

2 **Q.** So with respect to just outside of what
3 type of joint it is, just with respect to the
4 portion of your statement, it says:

5 "McCormack does not disclose or suggest
6 rotating a fusion implant..."

7 You still maintain this position?

8 **MR. NELSON:** Objection. Misstates
9 testimony.

10 **MR. LYTVYN:** I'm providing direct quote
11 from the deposition -- from the declaration that
12 says:

13 "McCormack does not disclose or suggest
14 rotating a fusion implant..."

15 And there is additional disclosure after
16 that. Specifically, on this part of the testimony:

17 "McCormack does not disclose or suggest
18 rotating a fusion implant..."

19 Do you maintain your position?

20 **MR. NELSON:** Objection. Takes that
21 portion of the statement out of context.

22 **THE WITNESS:** Yes. So what McCormack
23 says, it's -- the threaded -- they say the screw
24 implant is threaded progressively, further interior,
25 and serrated key may cut bone.

1 So it would be an interpretation.

2 **BY MR. LYTUVYN:**

3 **Q.** So how do you interpret it?

4 That's the whole point of this deposition,
5 is to figure out how a person with ordinary skill in
6 the art would interpret this. So what is your
7 interpretation of a "screw implant is threaded
8 progressively"?

9 A. Yeah. So threading it progressively is --
10 so the reason is you can thread something
11 progressively without having to rotate the implant
12 if you prepare the surgical void.

13 **Q.** What does the term "threaded" mean?

14 A. Threaded means that --

15 **Q.** It's a verb. So it's threaded. It's a
16 verb, so what is your understanding of the English
17 word "thread"?

18 A. The thread is your --

19 **MR. NELSON:** Objection.

20 **THE WITNESS:** Sorry.

21 **MR. NELSON:** Objection. Foundation.

22 **MR. LYTUVYN:** It's a word from

23 Exhibit 1012. We are trying to figure out --

24 **MR. NELSON:** I understood you're -- I
25 understood you're pointing out the definition of the

1 term as a verb.

2 **MR. LYTVYN:** Yes.

3 **THE WITNESS:** Yes. So what they -- what
4 McCormack is describing is that the thread of the
5 screw cuts into the bone, right.

6 **BY MR. LYTVYN:**

7 **Q. And how does it do that?**

8 A. You can do it by multiple ways. So one of
9 the ways could be that you create the recipient
10 hole, you place the implant, and then you release
11 the distraction, and then the bone would be -- would
12 be -- um -- getting closer to each other, right. So
13 the joint space is going to get more narrow, and the
14 thread would be entering the bone.

15 So by threading it, it means that the
16 threaded portion of the screw would be entering the
17 bone. So it doesn't explicitly describe that you
18 have to rotate the implant in order for the thread
19 to enter the bone.

20 **Q. So the implant will stay stationary and**
21 **then as you release the joint, the joint would**
22 **compress?**

23 A. Yes.

24 **Q. And the thread would engage the bone?**

25 A. The bone -- and tap into the bone, yes.

1 **Q. And if we read claim -- if we read Column**
2 **25, the sentence says:**

3 **"...threaded progressively further**
4 **interior."**

5 **So the way of threading a screw implant**
6 **that you just described, it would not progress**
7 **further interiorly; is that correct?**

8 **A. Because it's a three dimensional**
9 **relationship between the screw and the bone and**
10 **depending on how the -- how the bone -- like the**
11 **point of contact between the bone and the threads of**
12 **the screw, it could first start, let's say, at the**
13 **tip of the screw, and then in the middle, and then**
14 **at the proximal segment, and it could approximate in**
15 **that way.**

16 **Q. And that will satisfy the threaded**
17 **progressively further interior instruction?**

18 **A. Yeah, because you can have, first, the**
19 **proximal portion, and then the portion in the**
20 **middle, and then the interior, and then that would**
21 **satisfy the progression, right, because there is a**
22 **different geometrical relationship between the bone**
23 **and the threads of the screws.**

24 **Q. So for the record, you are testifying as**
25 **a medical expert with expertise in spinal and SI**

1 joint repair procedures, and when faced with
2 instructions of threading progressively further
3 interior screw implant, you will distract the
4 facets, insert the implant, and then let the joint
5 collapse on itself as the threads cut into the
6 cortical bone; is that the surgical procedure you
7 just described?

8 A. Again, this is one of the possible
9 interpretations because the --

10 Q. How would you as an expert in a SI joint,
11 spinal joint procedure, would implant this implant?

12 I understand it could be hammered in. It
13 could be inserted in many conceivably possible ways.
14 How would you perform this surgery if you were in
15 surgery, and you had a patient lying on the table
16 with an open incision? How would you insert this
17 implant?

18 A. I would probably use a screwdriver and
19 turn the screw and expect for the threads to cut
20 into the bone; that's the most likely case scenario.
21 However, they did not explicitly describe that in
22 the patent. That's my point.

23 Q. And what standard of disclosure are you
24 using to interpret prior art when you made your
25 determinations as to what a prior art reads on a

1 **claim?**

2 **MR. NELSON:** Objection. Ambiguous.

3 **BY MR. LYTVYN:**

4 **Q.** **What is your understanding of the level of**
5 **disclosure that a prior art reference needs to make**
6 **in order to be used in anticipation, analysis of a**
7 **patent claim?**

8 **A.** Yes. So my understanding is that the
9 person of ordinary skill in the art would understand
10 the meaning and limitations, so the plain meaning
11 and the -- of the description.

12 **Q.** **And what is the plain meaning of the term**
13 **"as the screw implant is threaded progressively**
14 **further interior"?**

15 **A.** Just like what they described. That's
16 what it is.

17 **Q.** **So what hand motion would you have to make**
18 **in order to thread a screw implant progressively**
19 **further interior. You made a motion several times,**
20 **and I want you to describe it, so we have it in the**
21 **transcript.**

22 **A.** It's like a clockwise rotation.

23 **Q.** **Thank you.**

24 **Let's go back to your declaration,**
25 **Paragraph 23. It says:**

1 "... wedge-like implant that is inserted
2 linearly between facets of adjacent vertebrae
3 without fixing lateral positions of the
4 vertebrae..."

5 So your understanding, if this implant
6 were inserted into the joint, it would not fix
7 lateral positions of the vertebrae?

8 A. Yes.

9 Q. And why not?

10 A. Because it's meant to vertically raise
11 compressed facet joint the way it was described, so
12 lifting the facet joint vertically. So it's a
13 different anatomical plane. So from superior to
14 inferior anatomical plane versus lateral
15 displacement is a horizontal plane.

16 Q. So as you are performing the surgery, in
17 what plane is the patient?

18 A. Typically, the patient is in a prone
19 position.

20 Q. So in prone position, are you still
21 vertically raising a facet joint?

22 A. I don't meant with the facet joint.

23 You have anatomical variations at cervical
24 level is about 45-degree angle; at thoracic level is
25 about 60 degrees compared to horizontal plane. And

1 in the lumbar area, it's a different angel. And
2 also, there is a degree of variability between
3 individual's anatomy. So it's --

4 **Q. During this surgery itself, are you**
5 **vertically raising a facet joint if the patient is**
6 **in a prone position?**

7 A. Yes. So what I focused on here was
8 specifically Figure 38A, the way they describe it.

9 **Q. And why did you focus on this figure?**

10 A. Because -- because they describe the use
11 of a wedge-like implant as --

12 **Q. Why did you focus on this figure instead**
13 **of, let's say, Figure 39A through D?**

14 A. Because they show the distraction, so they
15 are teaching the distracting of the vertebral facet
16 joint.

17 **Q. And how is that pertinent to the '539**
18 **patent or the petition that was filed on challenging**
19 **the validity thereof?**

20 A. Because it teaches the distraction of the
21 joint; that's how it's related. The '539 teaches
22 both the distraction of the joint as well as the
23 compression of the joint versus the McCormack
24 patent focuses on distracting the facet joint.
25 That's why I felt it was relevant to show that

1 difference.

2 **Q. You didn't feel the figure -- the**
3 **embodiment of figures 39A through 39D are relevant?**

4 A. The 39, they were not showing the
5 distraction as clear as 38A. I think 38A were
6 showing the distraction in a much more obvious way.

7 **Q. So going back to fixing -- without fixing**
8 **lateral positions.**

9 If, hypothetically, the implant depicted
10 in Figures 39A through D were inserted into the
11 sacroiliac joint, would it be able to achieve the
12 objective of fixing lateral positions of this SI
13 joint?

14 A. It's hard to tell.

15 **Q. What is your opinion?**

16 The whole purpose of this deposition is to
17 get your opinions. So in your honest opinion and
18 you are under oath.

19 A. Yes.

20 **Q. If this implant hypothetically were**
21 **inserted into the SI joint, would it fix lateral**
22 **positions of this SI joint?**

23 A. So here is what I would say, that it could
24 achieve the distraction of the SI joint, however,
25 based on what's described, I don't think it would

1 achieve the compression of the SI joint.

2 **Q. What about fixing lateral positions?**

3 A. Again, it would achieve the distraction of
4 the joint, but it's unknown if it would result in
5 fixation. So that's something that does require an
6 actual testing. I used to do a lot of cadaver labs,
7 right, so the engineers would design something, even
8 based on my suggestions. And then we would have to
9 test it in a cadaver lab, in an actual setting when
10 it's inserted, and if there is no report that shows
11 that, I would not speculate.

12 **Q. So what kind of information would you need**
13 **to know about this implant in order to be able to**
14 **answer with a fair degree of certainty whether it**
15 **fixes the lateral positions of the SI joint?**

16 **What kind of testing and information would**
17 **you need?**

18 A. Yeah. I would need the biomechanical
19 testing.

20 **Q. Would you describe the steps performed as**
21 **part of this biomechanical testing?**

22 A. Yes. So you obtain donated human tissue
23 that does have the sacrum and ilium, so the SI
24 joint, and then you would advance the implant in a
25 position. And then you would perform the -- or

1 simulate the motion that could occur in the SI
2 joint.

3 And if you -- if you don't see any motion
4 after the insertion of the implant, that means it is
5 fixed.

6 **Q. And is this process usually extensive?**

7 **Does it take many trials and error, steps**
8 **in order to obtain a design to fix this lateral**
9 **position to the joint?**

10 A. Typically, you have to do three different
11 cadaver labs, and you have to have three different
12 surgeons who would try the implant, and they would
13 provide the feedback.

14 And they would say, Yeah, I think this
15 design works. It's achieving the designed purpose.

16 But it's a product development process.
17 And then there would be a report based on that.

18 **Q. So based on images alone, you would not be**
19 **able to tell whether an implant is capable of fixing**
20 **lateral positions in a SI joint?**

21 A. That particular one, from McCormack, the
22 one that -- also see -- if you look at the figure,
23 the threads are also not continuous. So they have
24 kind of like little gaps in between. If you look at
25 Figure 39, right? You see there, (pointing) the

1 threads are discontinued here. So I think they
2 purposefully designed them like this for their facet
3 joint, and that could have an impact when you are
4 looking at SI joint. (Pointing.) So that could
5 also add -- create a variability, yeah. So the only
6 thing I'm sure about, and I mentioned that, you
7 would be able to provide a distraction of the joint.
8 But I'm not sure if based on this particular design,
9 it would be able to provide a fixation in the SI
10 joint. You see the threads are discontinuous.
11 (Pointing.) So I'm not sure.

12 **Q. Could you go to the next page --**

13 A. Yes.

14 **Q. -- of Figure 41A through 41D?**

15 A. Yes.

16 **Q. Have you seen these figures before?**

17 A. Yes, I did. Yes. And also, I looked at
18 Figure 40A as well, right. You see it's got another
19 element. (Pointing.) There is another important
20 thing here. (Pointing.) They actually prevent
21 someone from rotating the implant counterclockwise.
22 So by adding this additional embodiment 288 in
23 McCormack, it actually prevents someone from
24 rotating it counterclockwise.

25 **Q. Only clockwise rotation is possible?**

1 A. Right.

2 **Q. And then what about the embodiment**
3 **depicted in figures 41A to 41D?**

4 A. Yes. So --

5 **Q. This embodiment has continuous thread.**
6 **Just by looking at these figures, would you be able**
7 **to tell me whether it would fix lateral positions of**
8 **the SI joint, if this type of implant were inserted**
9 **into this SI joint?**

10 A. In my opinion, this type of design would
11 not work because it does not have a lateral cutting
12 edge that's necessary to cut the bone. And it's
13 just going to be way too much for resistance from
14 the bone and most likely, it would crush the bone.
15 I have not seen an actual implant that has a design
16 like this, frankly. If you look at 41C, it's just
17 not going to work.

18 **Q. So in order for an implant to fix lateral**
19 **positions of the SI joint, you would need to have**
20 **sharp lateral thread?**

21 A. Okay. That's a different question from
22 the previous one.

23 **Q. Well, you said this implant is not going**
24 **to work because the thread is not sharp. So if --**
25 **it's having a sharp thread requirement to achieve**

1 **fixation lateral positions of the SI joint?**

2 A. Yeah. I just wanted to clarify that --
3 clarify that the 41C, the way it's depicted here in
4 the figure, I don't think this implant would work in
5 the SI joint, just the way it's designed. That's
6 kind of -- like, we can close the statement there.

7 Now, when you ask a different question, so
8 that would be as if we are starting over. So I
9 don't want this to be connected to the other
10 question. I want it to be treated independently.

11 Q. Sure.

12 So let's keep going. Figure 42A through
13 42C.

14 A. Yes.

15 Q. So let's assume that this thread is
16 sharp.

17 A. Yes, it is.

18 Q. Would that fix lateral positions, so the
19 SI joint is inserted into this SI joint?

20 A. Yeah. I'm not sure it's able to fix.

21 And also it has this cap, right, 298?

22 Q. Yes.

23 A. This is more of a facet joint type
24 approach. I don't think it will work in the iliac
25 joint, sacroiliac joint.

1 **Q. So if it didn't have that cap -- I'm just**
2 **trying to figure out what characteristics are**
3 **needed in an implant in order to fix lateral**
4 **positions of the SI joint. You previously stated**
5 **that the thread needs to be sharp in order to fix**
6 **lateral positions of the SI joint. Why is that a**
7 **requirement?**

8 A. Because you need the close contact
9 between the threads and the bone in the SI joint.
10 And by having a close contact, like a snug fit,
11 right, so then you can -- you can achieve a secure
12 placement.

13 While the 42A, 42B, I don't think would
14 work in the SI joint the way it's described.

15 **Q. So the lateral surface doesn't have sharp**
16 **threads, that wouldn't fix lateral positions of the**
17 **SI joint?**

18 A. I mean, that would be kind of like
19 excluding everything else. There are multiple
20 options and multiple ways of accomplishing a
21 fixation. So my preference would be to look at a
22 specific drawing and provide my feedback, rather
23 than providing a generalized statement about
24 something that would not work ever because most
25 likely, I would be wrong if I would be saying that.

1 It's one of those things where -- never
2 say never. So I prefer to focus on a specific
3 figure and a specific inscription that's referenced
4 in the prior art, so I can provide my opinion
5 specifically to that disclosure.

6 So, for example, to conclude 42A, 42B, I
7 don't think would work in SI joint because of their
8 -- the cap that it has there, the 296. That's my
9 opinion.

10 **Q. And then the embodiment figures, 39A**
11 **through 39D, that wouldn't work because the threads**
12 **are not continuous?**

13 A. (No response.)

14 **Q. So you said that embodiment figures, 41A**
15 **to 41D, would not work because the threads are not**
16 **sharp, and looking at Figures 39A through 39D, these**
17 **threads are explicitly described as cutting, boring**
18 **into the cortical bone.**

19 A. Yes. So what I said was, the implant from
20 Figure 39A, B, C and D, would provide a distraction
21 of the joint. I was certain about that.

22 **Q. Okay.**

23 A. However, I was not certain about the
24 ability of this particular design to provide
25 fixation, and I pointed to discontinuous threads in

1 the implant. So I wanted to point to differences;
2 that's all.

3 **Q. Okay. Thank you.**

4 **Let's go to Page 11, Paragraph 27 of your**
5 **declaration.**

6 A. Yes, I'm here.

7 **Q. So there is a statement that says:**

8 **"Because McCormack discloses a method of**
9 **distracting facet joints in the spine, McCormack**
10 **clearly fails to disclose or suggest compressing a**
11 **joint with a fusion implant."**

12 A. Yes. I did not see a disclosure speaking
13 about compression in the McCormack patent.

14 **Q. And can you tell whether an implant would**
15 **compress the joint just by looking at the drawing?**

16 A. With a good degree of certainty in certain
17 cases, you can tell but not always. So I will have
18 to look at a specific figure to provide my opinion.
19 But in the text, I read carefully the text of the
20 disclosure in McCormack, and I did not see a
21 description of compression.

22 **Q. So then it's your opinion that compressing**
23 **a joint and distracting a joint are two incompatible**
24 **features of a joint?**

25 A. They are not compatible. It's not

1 incompatible. It's the vector of forces that are
2 provided that prevent -- let's say if you compress
3 the joint, you prevent it from -- so it's a force
4 vector. So they are not incompatible in my
5 opinion.

6 **Q. So how do you distract the joint and**
7 **compress the joint at the same time?**

8 **We already established that distracting**
9 **the joint requires increasing the distance between**
10 **the articular surfaces?**

11 A. Yes.

12 **Q. And we established that compressing the**
13 **joint requires decreasing this distance. So how can**
14 **an implant increase that distance and decrease that**
15 **distance at the same time?**

16 A. Okay. So it all depends on what the
17 starting point is, what the reference point is,
18 right.

19 Let's say if the distance in the
20 sacroiliac joint is, let's say 4 millimeters, that
21 is the natural -- natural distance in that
22 particular patient, right. You can place the
23 implant, and let's say from 4 millimeters you can
24 reduce to 3 millimeters, and you are decompressing,
25 right.

1 So it used to be an additional laxity.
2 Let's say it was 5 millimeters, and then you reduce
3 it to 4 millimeters, so you are compressing the
4 joint.

5 **Q. So compressing requires that in a**
6 **compressed state, the distance is less than it was**
7 **originally in an uncompressed joint?**

8 A. Yes, exactly.

9 **Q. And that distracting?**

10 A. Distracting, again it's -- let's say the
11 natural distances, let's say 2 millimeters, and then
12 you increased it to 3 millimeters. So you don't
13 have a specific number, and even though we have it
14 as one excluding the other. I think they work
15 independently --

16 **Q. Okay.**

17 A. -- or they need to be looked at
18 independently.

19 **Q. Just to close the loop on this, this**
20 **statement that I just read into the record says:**

21 **"Because McCormack discloses a method of**
22 **distracting facet joints..."**

23 **Is the reason why McCormack clearly fails**
24 **to disclose or suggest compressing a joint with a**
25 **fusion implant?**

1 A. Yes, because of -- when I read the text of
2 the patent, I have not seen a description about the
3 compression in the joint, especially in the
4 sacroiliac joint. So that's why my conclusion was
5 that McCormack clearly failed to disclose or suggest
6 compressing a joint with a fusion implant.

7 **MR. LYTVYN:** I think we are at a good
8 stopping point. Let's go off record.

9 **THE COURT REPORTER:** Off the record.

10 **(Off the record at 12:17 p.m.)**

11 **(On the record at 1:14 p.m.)**

12 **MR. LYTVYN:** We are back on the record.
13 Let's move forward with this deposition.
14 Page 11.

15 **THE WITNESS:** Yes.

16 **BY MR. LYTVYN:**

17 **Q. Paragraph 29.**

18 A. Yes.

19 **Q. Before we begin for the record, just would**
20 **like to you confirm that you did not confer with the**
21 **counsel for Orthocision during the break?**

22 A. Correct. I did not.

23 **Q. So paragraph 29 pertains to the reference**
24 **entitled, "Vestgaarden II," which is U.S. Patent**
25 **Number 8,882,818, Exhibit 1013, and Mr. Banks is**

1 **going to give you a copy of this exhibit.**

2 **(Exhibit 1013 marked for identification.)**

3 **BY MR. LYTVERN:**

4 **Q. Take a look at this patent.**

5 **Does it look familiar?**

6 **A. Yes.**

7 **Q. And about how much time would you say you**
8 **spent reviewing and analyzing this patent?**

9 **A. A few hours.**

10 **Q. Okay. So could you walk me through your**
11 **understanding of the procedure that's described in**
12 **this patent?**

13 **A. Yes. Sure.**

14 So the patent discloses method, and also
15 describes the instrumentation for fusing the
16 sacroiliac joint, and it's designed to deliver a
17 multiplane implant that has a cruciform cross-
18 section which is shown in Figure 1.

19 I can show you the Figure 1. (Pointing.)
20 But the way it's shaped, it's a cruciform design.

21 **Q. Sorry to interrupt. Are you familiar with**
22 **such implants in practice?**

23 **A. In practice? I haven't seen one like**
24 **this.**

25 **Q. Okay.**

1 A. So the -- the idea is to use it as a --
2 specifically for the SI joint, and also to have two
3 stabilizers, and they are shown here with 15A and
4 15B to specifically prevent the rotation of the
5 implant along the longitudinal axis.

6 **Q. And could you describe the process of how**
7 **that implant is inserted?**

8 A. Yes. So it would be a skin incision and
9 dilation and separation of the soft tissue, access
10 to the SI joint and perforation of the insertion
11 site. Probably it would require a removal of some
12 fibrocartilage from the joint to create space, and
13 then just simply advancing -- advancing the implant
14 into the creative void.

15 So if we look at Figure 20 and 22. That
16 was in my declaration, and I can see the patent as
17 well.

18 **Q. Yes.**

19 A. If I can find it. Yes. So it will be --
20 yep. So it will be 20 and 22 and it will just be
21 advanced forward. (Pointing.) And inserted in the
22 plane.

23 So they rely on a snug fit between the
24 implant and the bones.

25 **Q. Okay. And could we look at paragraph 31**

1 **of your declaration.**

2 A. Yes.

3 **Q. So could you read the first sentence,**
4 **please.**

5 A. "There is no discussion or suggestion by
6 Vestgaarden II of (1), rotating an implant or
7 portion thereof in a void in the sacroiliac joint."

8 (Exhibit 1016 marked for identification.)

9 **Q. Okay. Have you considered reference to**
10 **referred to as Vestgaarden III -- it's Exhibit 1016**
11 **-- when rendering your opinion?**

12 With respect to the teachings of
13 **Vestgaarden II.**

14 A. I would like to see the Vestgaarden III
15 just to refresh my memory.

16 **Q. Mr. Banks is getting those.**

17 A. Thank you very much.

18 And this one was which figure?

19 **Q. Just -- have you, when you analyzing**
20 **Vestgaarden II, do you recall consulting this**
21 **reference that's in front of you? US patent**
22 **8,162,981?**

23 A. Yes. I have looked at this patent.
24 Yeah.

25 **Q. And in your understanding what are is the**

1 **relationship between this patent, which is Exhibit**
2 **1016 and Vestgaarden II, which is Exhibit 1013?**

3 A. So the design of the implant looks similar
4 so that Vestgaarden III is 2012 and -- okay. All
5 right. Let's look at patent numbers just to
6 clarify. The one that ends in '818.

7 **Q. That's referred to as Vestgaarden II, and**
8 **that is Exhibit 1013?**

9 A. Yes. That's how I do it as well. And
10 then the one that ends '981.

11 **Q. Yes. That's Vestgaarden III, and that's**
12 **Exhibit 1016.**

13 A. Okay. Because it was a little bit
14 counterintuitive because the date of the patent was
15 2014 for the Vestgaarden II. And the date of the
16 patent for the Vestgaarden III is 2012, which is
17 like two years earlier. That's all.

18 It's okay. Just wanted to clarify.

19 **Q. Yeah. I think they are numbered in the**
20 **petition this way, based on the order in which they**
21 **were produced --**

22 A. In your file, probably.

23 **Q. -- not necessarily chronological order.**

24 A. Okay.

25 **Q. So what significance did Vestgaarden III**

1 **play in your analysis?**

2 A. It has a significance of the design. If
3 you look at Figure 1, 2, and 3, it's fairly similar
4 to the one presented in the Vestgaarden II in Figure
5 1.

6 So I felt that they were very similar in
7 design.

8 **Q. Okay. So are you aware that Vestgaarden**
9 **II incorporates Vestgaarden III by reference?**

10 A. I'm not sure.

11 **Q. Do you know what the term "incorporate by**
12 **reference" means in the context of a patent**
13 **application?**

14 A. It's like everything that's in one is
15 included in the other one.

16 **Q. And if you could go to Figures 58 through**
17 **60, Vestgaarden III, Exhibit 1016.**

18 A. Yes. I'm looking there.

19 **Q. And if you could go to Column 8 of**
20 **Vestgaarden III, it's part of the drawings.**

21 A. Yes.

22 **Q. So the description of the embodiment**
23 **that's depicted in Figures 58 through 60 starts with**
24 **line 19, Column 8. Would you able to read it into**
25 **the record, please.**

1 A. Yeah.

2 It says, "15 through 16 illustrate fusion
3 implant 5, which is similar to the embodiment shown
4 in Figures 29-31, and further comprises a hole for
5 attaching the implant to the facet joint. The
6 attachment may be effected by K-wire suture, staple,
7 screw, or other fixation device."

8 **Q. Thank you.**

9 **And do you understand how this implant,**
10 **depicted in Figures 58 through 60, in light of the**
11 **description that you just read -- how it would be**
12 **implanted into the SI joint?**

13 A. Yes. So it would be advanced into the SI
14 joint space in the recipient area, and then in 58
15 they show the presence of the hole that would allow
16 the addition of the K-wire, the switcher, or
17 something that would help with fixation, or would
18 help to keep the implant in its final position.

19 **Q. And is a screw one of such example of a**
20 **fixation device provided in Vestgaarden III?**

21 A. Yes. A screw -- this would be a separate
22 component. So what it would do -- it would
23 transform the implant from being a single -- a
24 single implant type to a multicomponent type of
25 implant if that's done.

1 **Q. And that multi component implant, what**
2 **would be the insertion step with respect to this**
3 **exemplary screw?**

4 **How would you insert that screw through**
5 **this hole depicted in Figures 58 through 60?**

6 A. So once the implant is in its final
7 position, then they are -- the screw which would be
8 -- would be a component of the implant -- would be
9 inserted from proximal to distal, and it would pass
10 through the implant, and the screw would end up in
11 the bone tissue to stabilize the implant and secure
12 its position in the final location.

13 **Q. And would the process of placing the screw**
14 **through this hole into the bone involve rotation of**
15 **the screw?**

16 A. Yeah, it would. However, this screw is
17 not going to be used for the sacroiliac joint
18 fusion. It would be just an auxiliary component
19 that helps to keep the implant in place.

20 And also it would not be inserted parallel
21 to the sacroiliac joint planes, because it would
22 have to be in an angle. So based on Figure Number
23 58, you can see that it's at about 45-degree angle;
24 the way the trajectory goes.

25 **Q. And how would the implant body itself be**

1 **sort of in the trajectory for the implant body --**

2 A. The implant body --

3 **(Reporter clarification.)**

4 **Q. Yes. How would the implant body,**
5 **referenced by Numeral 5 in Exhibit 1016 -- how**
6 **would that be inserted with respect to the**
7 **trajectory?**

8 A. Yes. So the implant body shown in Figure
9 58 would be inserted parallel to the sacroiliac
10 joint planes.

11 **Q. And does the body of the implant**
12 **referenced as Numeral 5 in the '981 patent -- do you**
13 **consider that to be a single fusion implant?**

14 A. No. It has got a hole, and it's meant to
15 be used together with either suture or a screw or
16 something else to have another component that would
17 stabilize the implant in its final position. So it
18 would not be considered the single-type implant.

19 **Q. So the body itself, without the screw --**
20 **would the body be considered a single fusion**
21 **implant?**

22 A. It would be an incomplete, right?

23 So it would be no implant in that case,
24 because it's meant to be used with -- that's why
25 they place a hole there. To -- I don't think this

1 could be used without -- without stabilization.

2 It's just based on its shape. It's just
3 not going to stay in place. So I don't think it can
4 be used as a stand-alone implant.

5 **Q. Could you elaborate on that. What**
6 **specifically about the shape of this implant would**
7 **not allow it to be used by itself?**

8 A. Yeah. Like the surface is very smooth.
9 It's also got this cruciform design, and you see
10 that it's shaped in a way that would be prone to
11 motion, to movement, and I don't think it's going to
12 stay in place long enough to provide the fusion
13 that's needed.

14 So placing a hole -- it was a good idea.
15 I think they added the hole because it was
16 necessary, rather than as an add-on option.

17 **Q. Could you take a look at the Figure 29**
18 **through 31.**

19 A. Okay. Okay.

20 **Q. Could you describe to me that embodiment**
21 **of the implant.**

22 A. Okay. Yeah. So again, this one does not
23 have a hole, and based on its shape, I don't think
24 this would stay in for long periods of time in the
25 sacroiliac joint. It doesn't have the design that

1 would provide long-term stability.

2 **Q. Do you believe that this implant depicted**
3 **in Figures 29 through 31 would fix relative lateral**
4 **positions of the side joint?**

5 A. I don't think this is a good design. I
6 don't think it would do it in my opinion.

7 **Q. And what features would it need to have in**
8 **order to be able to accomplish the fixation of**
9 **lateral positions of the side joint in your**
10 **opinion?**

11 A. It would have to have a greater engagement
12 with the patient's bone.

13 **Q. Could you describe to the court reporter**
14 **what part of that implant you are pointing to. She**
15 **can't see your gestures.**

16 A. So when you look at Figure 29, there is an
17 arrow that says Number 5, and it has a small
18 protrusion here on the surface of the implant, but
19 it's very smooth surface. (Pointing.)

20 So that, that protrusion, I don't think
21 would be able to cut into the bone to provide the
22 stability of the implant.

23 **Q. So just so we are clear for the record,**
24 **what are you referring to is the lateral surface of**
25 **the implant?**

1 A. Yes. Lateral surface.

2 **Q. And your opinion is that because lateral**
3 **surface does not penetrate into the bone, this**
4 **particular implant would not be able to fix relative**
5 **lateral positions of that SI joint?**

6 A. Yes.

7 **Q. So your experience is that the**
8 **prerequisite for fixation of the lateral positions**
9 **of the SI joint -- having a sharp protrusion on the**
10 **lateral surface of the implant?**

11 A. Again, this would be a -- generalizing
12 things, and I would prefer not to generalize things,
13 but based on the implant, the way it's shown in
14 Figure 29, I think it doesn't have the element that
15 could provide the stable fixation.

16 And the other figure where it had the
17 screw, the Figure 58, I think it was a good idea for
18 them to add that hole for the screw or for the
19 suture.

20 So that one would have a greater chance of
21 being successful. But still, the design is not very
22 good.

23 **Q. And you are not familiar with an implant**
24 **of such design until you encountered this reference,**
25 **correct?**

1 A. I haven't seen in the clinical practice
2 something like this.

3 **Q. Could we reference Figure 1 of the same**
4 **exhibit, 1016.**

5 A. Yes. Figure 1?

6 **Q. Yes.**

7 A. Yes. This one is better, because it's got
8 the spikes. So it's embodiment 25. It's a little
9 spike on the lateral surface.

10 So this one has a greater chance of
11 staying in place because that spike will be
12 perforating the bone and providing potential
13 stabilization that's needed.

14 **Q. So would that implant fix relative**
15 **positions of sacrum and ilium in the SI joint?**

16 A. It will have a greater chance than the
17 other design, correct. But still I don't think it's
18 good enough.

19 And then this one, the Figure 3 would have
20 a greater chance because you can place some bone
21 graft in the middle, and partially rely on the bone
22 graft fusion between the sacrum and the ilium in
23 addition to the spikes. It's got perforations.

24 So out of Figure 1, 3, 58, probably Figure
25 3 is there. It's got the greatest chance of -- of

1 being successful.

2 **Q. Let's go to Paragraph 32 on your**
3 **declaration.**

4 A. Yes, I'm here.

5 **Q. Would you be able to read the first**
6 **sentence of that paragraph.**

7 A. "There is also no discussion or suggestion
8 by Vestgaarden II of penetrating the bone tissue of
9 the articular surfaces of the sacroiliac joint
10 through the rotation of the implant or a portion
11 thereof. The Implant 5 is inserted into preformed
12 Cavity 45 by impaction with Tool 160, and there is
13 no discussion of any structures on
14 Implant 5 penetrating bone tissue."

15 **Q. With respect to that last part, there is**
16 **no discussion of any structures on Implant 5**
17 **penetrated bone tissue?**

18 A. Yeah.

19 **Q. You just looked at Figure 3 --**

20 A. Yes.

21 **Q. -- Vestgaarden III, which is incorporated**
22 **by reference?**

23 A. Yes.

24 **Q. Do you still maintain your position that**
25 **there is it no discussion of any structures on**

1 **Implant 5 penetrating bone tissue?**

2 A. Yes. And I can provide the rationale for
3 that.

4 **Q. Figure 3 of Exhibit 1016.**

5 A. Yes. If you look at the spikes, they are
6 very small. Maybe 1 millimeter up to 2
7 millimeters, just based on the size of the implant
8 which are very small. And penetration through the
9 bone means that the full thickness of the bone would
10 be perforated.

11 That is the definition of the perforation
12 that I have in mind. Versus this spikes, they could
13 enter the bone, but they would not perforate through
14 the full thickness of the bone.

15 **Q. And what is the thickness of the bone?**

16 A. The thickness of the bone? Of the sacral
17 bone of the iliac bone there? In the area?

18 **Q. What is the thickness of each?**

19 **What is the thickness of sacral?**

20 A. It's much greater than the size of the
21 spike.

22 **Q. So what -- give me --**

23 A. Like it could be five, ten times greater
24 than what you see in terms of the spike here; the
25 length of the spike here.

1 **Q. So when you are interpreting these**
2 **figures, is it your understanding that they are**
3 **drawn to scale?**

4 A. No. They are not drawn to scale.
5 However, there is a range for an implant like this.
6 Typically an implant like this would be about 10, 12
7 millimeters in diameter, and respectively a spike
8 would be 1 or 2 millimeters.

9 So I just go by typical size of the
10 implants for the SI joint fusion.

11 **Q. And how thick is the bone? I know you**
12 **said the sacroiliac had different thicknesses.**

13 A. It would be much greater than the 2
14 millimeters. Much greater than the length of the
15 spike here.

16 **Q. Could you please give me a numerical**
17 **range of values for the typical thickness of the**
18 **bone that would need to be pierced in sacrum and**
19 **ilium?**

20 A. Yes. So it will be at least -- at least 6
21 -- 5, 6 millimeters or greater.

22 **Q. And it's your understanding of the term**
23 **"penetration" -- that it requires entry and exit?**

24 A. Oh, I agree with the definition. Yes.

25 **Q. Let's take a look at paragraph 33 on your**

1 **declaration.**

2 A. Yes. I'm looking.

3 **Q. Would you be able to read that paragraph**
4 **into the record.**

5 A. "With regard to Claim 33, it is my opinion
6 that Vestgaarden II fails to disclose or suggest
7 'compressing the sacroiliac joint and securing the
8 fusion implant in the sacroiliac joint,' as
9 Vestgaarden II is directed to distracting the
10 sacroiliac joint.

11 Thus, Vestgaarden II fails to anticipate
12 33 for at least this additional reason."

13 **Q. So this term -- "distracting" comes up**
14 **again.**

15 So why do you believe Vestgaarden II is
16 **directed to distracting the SI joint?**

17 A. Based on the shape of the implant, I
18 believe. And also because it's advanced into the
19 joint. It is meant to distract the joint.

20 **Q. And earlier we talked about your opinion**
21 **that you do not believe that that implant is well**
22 **designed to perform its intended function; is that**
23 **correct?**

24 A. Yeah; that is correct.

25 **Q. Did that play any part in your analysis of**

1 **validity of the Claims 32 through 35?**

2 A. No. No. Just because the implant in my
3 opinion doesn't have a good potential clinical
4 application or use -- that did not impact my
5 analysis, no. I was just taking the prior art
6 information as is.

7 Q. And in order for you to conclusively
8 answer whether those barbs that we see in Figures 1
9 and 3 of Vestgaarden II -- whether they penetrate
10 the bone tissue -- you would need to know the
11 dimensions of those barbs; is that correct?

12 A. I can't estimate the dimensions of those
13 barbs. So -- they just very small.

14 Q. And why do you believe that the diameter
15 of this joint is at -- I believe -- what did you --
16 I'm sorry.

17 When you described the dimensions of this
18 implant, what did you say you thought the size of
19 this implant was?

20 A. I mean, it should be around 10, 12
21 millimeters in diameter. That was my estimate.

22 Q. And why would you think it's 10 to 12
23 millimeters?

24 A. Just because the implants of similar
25 design typically have that 12 millimeter, 10, 12-

1 millimeter-type diameter of range.

2 **Q. Okay. Let's move on to the next paragraph**
3 **reference. This is Stark II.**

4 A. Yes.

5 **(Exhibit 1014 marked for identification.)**

6 **Q. U.S. Patent 8,740,912, and that is it**
7 **Exhibit 1014. Mr. Banks, if you would give Dr.**
8 **Zaporojan a copy.**

9 A. Thank you very much.

10 **(Document tendered to the witness.)**

11 **Q. Please take a look at Figure 3 of this**
12 **reference.**

13 A. Yes.

14 **Q. And please describe to me your**
15 **understanding of what you see in the figure.**

16 A. Yes. So in the figure they show a screw
17 which is marked here as 112, and its intended
18 placement is in the sacroiliac joint.

19 Did that answer your question?

20 **Q. Yes. And how would you insert that**
21 **screw?**

22 A. You would insert it by -- by rotating the
23 screw and advancing it forward to place it into the
24 joint.

25 However, the screw -- the way it's

1 designed here and shown in the picture -- it's a
2 little bit -- I will call it nonsurgical because the
3 depth of the threads is very small, and also the
4 diameter of the screw is uniform. It's the same
5 diameter along the screw length, which is unusual
6 for a screw that would be used in a fusion-type
7 setting, because those are usually tapered at the
8 top to guide the screw insertion.

9 **Q. Did you go to Column 16 of this Stark II**
10 **reference?**

11 A. And also in the patent itself, in the
12 Stark patent -- I think when they described -- I
13 just need to find the description.

14 I think they simply described it as
15 advancing the implant into the joint space, rather
16 than specifically stating rotation.

17 **Q. Okay.**

18 A. I think that's an important
19 clarification.

20 **Q. Okay. Could you go to Column 16.**

21 A. Yes.

22 **Q. Could you read -- so there is a heading**
23 **under Letter C entitled, "Immobilization elements."**

24 A. Yes.

25 **Q. And starting with Line 15, the sentence**

1 that starts with "An," would you be able to read
2 that sentence and the next one, please.

3 A. Sure. "An improved implant for the
4 sacroiliac joint is a tapered screw."

5 Q. Actually, that's sufficient.

6 So does that answer your question about
7 whether -- I guess -- sorry. Let me rephrase this.

8 Does this bring clarity to you about the
9 shape of the screw depicted in Figure 3?

10 A. Not from the figure. From the description
11 definitely it says tapered, but from the figure
12 itself, I just wanted to point out that the diameter
13 of the screw is the same. When I'm looking at the
14 figure, there is it no tapering in Figure 3. That's
15 what I wanted to point out.

16 So if there is tapering, then it's
17 probably in the invisible part where it's buried
18 into the bone or into the joint space. That's what
19 is visualized here. Yeah.

20 That's why I mentioned the way the figure
21 is presented, Figure 3, they did not show the
22 tapering that they described in the Column 16 where
23 they described the tapering.

24 So I think it's just the -- the artist
25 that drew the figure didn't capture that element.

1 Q. Is that your understanding -- let me start
2 from the beginning.

3 Let's look at Paragraph 37 of your
4 declaration.

5 A. Yes.

6 Q. Second sentence says:
7 "While Stark II mentions self-tapping
8 screws in passing, it does not provide any further
9 description of such an example."

10 Do you remember writing this sentence?

11 A. Right. Uh-huh.

12 Q. And why do you believe that for the
13 purposes of in validity analysis further description
14 or examples will be important?

15 A. Because the self-tapping screws usually
16 have much greater size of the threads, versus Figure
17 3 shows very small threads. And you would need to
18 prepare the recipient side in order to be able to
19 place the screw that's shown in Figure 3.

20 So I would not describe it as a self-
21 tapping.

22 Q. Let's read the next sentence, please.
23 Paragraph 37 of your declaration.

24 A. 37 or 39.

25 Q. 37. You just read the sentence that ends

1 **with the word "such an example."**

2 **If you can read the very next sentence,**
3 **please.**

4 A. Okay. So my declaration. 37, and then
5 which sentence I'm supposed to read?

6 **Q. The last sentence.**

7 A. "Thus, Stark II fails to disclose" -- this
8 one?

9 **Q. Yes. Yes.**

10 A. "Thus, Stark II fails to disclose rotating
11 the fusion implant or a portion thereof in the void,
12 the fusion implant having at least one fixation
13 element that penetrates bone tissue in an articular
14 surface of at least one of an ilium and a sacrum in
15 the sacroiliac joint as the fusion implant or a
16 portion thereof is rotated, thereby fixing the ilium
17 and sacrum in relative positions and the fusion
18 implant in the sacroiliac joint, as recited in the
19 replacement Claim 32."

20 **Q. So we just talked about the process of**
21 **inserting that Screw Implant 112 into the -- into**
22 **the joint. Sorry.**

23 A. Yes. And yeah. I have a comment.

24 **Q. Go ahead.**

25 A. For clarification, yeah.

1 So Stark II in that description of Figure
2 3, it talks about gripping. So gripping of the bone
3 on the either side of the joint, but they did not
4 describe the penetration of the fixation element
5 into the bone tissue.

6 So that's where I felt there was a
7 difference. So the next sentence should be taken
8 into consideration together with the part that are
9 discussing the gripping of the bone.

10 **Q. That's the sentence that pertains to self-**
11 **tapping screws, correct?**

12 A. Yes.

13 **Q. And those screws would penetrate the bone,**
14 **correct?**

15 A. Those would penetrate into the bone, yeah.

16 **Q. Have you considered any other references**
17 **outside of Stark II itself when interpreting Stark**
18 **II?**

19 A. I looked at many patents, so I would have
20 to look at specific one. And I check my files to
21 the point to a particular patent, but I have look at
22 other patents as well, as a -- as a general
23 question, general answer, yeah.

24 **Q. So in Column 16, Stark provides the**
25 **following disclosure:**

1 **"Tapered screws for sacroiliac**
2 **immobilization/fusion are also described in the**
3 **present inventor's copending U.S. patent**
4 **application, Serial Number 10,797,481, filed on**
5 **March 10, 2004, entitled, 'Sacroiliac Joint**
6 **Immobilization,' and U.S. patent application, Serial**
7 **Number 11,879,536, filed July 17, 2007, entitled,**
8 **'Bone Screws and Particular Applications to**
9 **Sacroiliac Joint Fusion,' both of which are hereby**
10 **incorporated herein by reference."**

11 **Do you recall reviewing either one of**
12 **those patent applications?**

13 A. Sorry. I don't recall any of those.
14 Whatever date mentioned that they did incorporate
15 into this one -- what was important. So that's my
16 answer.

17 **Q. You have performed any surgeries that**
18 **involved a screw-type implant?**

19 A. Yes.

20 **Q. How many would you say?**

21 A. Screw-type implants?

22 **Q. Yes.**

23 A. I would say hundreds. I mean, the
24 majority of the orthopedic surgery procedures use
25 some screws or plates with medical screws or --

1 yeah. It's very common.

2 **Q.** Out of those hundreds of procedures, how
3 many times have you inserted a screw into the joint
4 without rotating it?

5 **A.** Not that many. So it's uncommon.

6 **Q.** Thank you.

7 **MR. LYTVYN:** I think I have been going for
8 a little over an hour. Let's take a five-minute
9 break and we'll come back.

10 **THE WITNESS:** Sure.

11 **THE COURT REPORTER:** Off the record.

12 (Off the record at 2:03 p.m.)

13 (On the record at 2:10 p.m.)

14 (Exhibit 1015 marked for identification.)

15 **BY MR. LYTVYN:**

16 **Q.** So let's go to Page 19 of Dr. Zaporojan's
17 declaration.

18 **A.** Yes.

19 **Q.** One of the references that's mentioned in
20 this part of the declaration is Stoffman, which is
21 Exhibit 1015, U.S. Patent Number 9,451,986, and Mr.
22 Banks will provide you with a copy.

23 **A.** Thank you.

24 **MR. BANKS:** Which one?

25 **MR. LYTVYN:** Stoffman.

1 BY MR. LYTUVYN

2 **Q. Dr. Zaporozhan, do you recall reviewing**
3 **this reference?**

4 A. Yes.

5 **Q. And about how much time would you say you**
6 **spent reviewing this one?**

7 A. A few hours.

8 **Q. Let's go to Figure 4 of this reference.**

9 A. Yes.

10 **Q. So would you be able to describe to me the**
11 **understanding of this figure.**

12 A. Yes. So is -- it's a multicomponent-type
13 implant, and it's got two additional screws for
14 implant stabilization marked here on the 90 and 100.
15 (Pointing.)

16 And they insert it under oblique angle to
17 provide further stabilization of the implant.

18 **Q. In your opinion do these screws, 90 and**
19 **100, penetrate the bone tissue?**

20 A. This one, yes. They are long enough to
21 penetrate.

22 **Q. Would you say that this implant fixes**
23 **relative lateral positions of the sacrum and the**
24 **ilium in the SI joint?**

25 A. Yes. This one, yes. However, it's a

1 multicomponent, which is different from the one
2 described in the replacement Claims 32, which says
3 it has to be a single fusion implant.

4 So 32D talks about the single fusion
5 implant versus -- this one is a multicomponent, so
6 it's different.

7 **Q. And looking at the Figure 4, would you say**
8 **that this implant compresses the SI joint?**

9 A. No. I think it's primarily for the
10 distraction because of Number 20 being inserted and
11 providing a distraction within the joint.

12 **Q. Could you elaborate, please.**

13 A. Yes. The Number 20, which is the -- the
14 main component of the implant, right. (Pointing.)
15 So you have the main component, and then you have
16 two additional screws. So the primary mode of
17 action, right, so that's very important, too, to
18 define primary mode of action is the insertion of
19 the Number 20 into the SI joint and providing a
20 distraction. The screws are provided for
21 stabilization of the implant in its final position.

22 **Q. And --**

23 A. And to answer your question, it does not
24 described compression of the joint.

25 But based on primary mode of action, it's

1 a primarily distraction-type implant. Like
2 distracting. Like spreading apart.

3 **Q. So hypothetically if the body of this**
4 **implant -- let me ask you a different way.**

5 **Would you be able to modify this implant**
6 **in a way that it would compress the joint?**

7 A. It would be really difficult because
8 there's a limitation on each of the diameter of the
9 smallest screws, on this lateral, so you need at
10 least three times the diameter of the -- of the
11 head the screw, which is typically the greater
12 diameter, compared to the body of the screw. And it
13 has to be part of the body of the main implant as
14 well.

15 So if you shrink it, there is so much you
16 can shrink. And based on this design I don't think
17 it's going to work, because of -- it's just too much
18 hardware in one single head of the implant.

19 **Q. What would you say the diameter of the**
20 **main body 20 would have to be in order to have a**
21 **possibility of compressing the joint?**

22 A. I would say as low as 6 millimeters in
23 diameter. Yeah.

24 **Q. So anything over 6 millimeters would not**
25 **compress the joint?**

1 A. Again, this is an educated guess. It's
2 hard for me to come up with numbers without
3 biomechanical testing on this, please.

4 Q. So the next reference we would like to
5 show you is -- it's U.S. Patent Number 9,421,109.
6 And Mr. Banks, what exhibit number?

7 MR. BANKS: This will be 1019. So this is
8 '109 patent.

9 MR. LYTVYN: Yes.

10 MR. NELSON: Objection. Out of the scope
11 of the testimony.

12 THE WITNESS: Thank you.

13 MR. LYTVYN: Counsel, this reference was
14 filed by Orthocision in an IDS during prosecution of
15 the '539 patent, so by definition it is material to
16 authenticity of the claims in the '529 patent.

17 BY MR. LYTVYN:

18 Q. Would you be able to go to Figure 42M,
19 please, Dr. Zaporojan.

20 A. 42M. Yes.

21 MR. NELSON: Steve, what was the patent
22 number again?

23 THE WITNESS: 9,421,109.

24 MR. NELSON: You broke up. One more time,
25 please.

1 **THE WITNESS:** 9,421,109.

2 **MR. LYTVYN:** Counsel, Mr. Banks is about
3 to serve you this exhibit, so you'll have it in
4 front of you.

5 **MR. NELSON:** Thank you.

6 **BY MR. LYTVYN:**

7 **Q.** So we will hold off a second until you
8 have it.

9 A. And it's Figure 42M?

10 **Q.** Correct.

11 A. Sheet 30 -- 53 out of 99?

12 **Q.** Yes. Yes. That's the figure.

13 A. Out of -- curiosity question. How metal
14 screws cross each other inside in the middle and not
15 get damaged and damage each other?

16 You see the path? (Pointing.)

17 **Q.** I will help you --

18 A. Like this and like this. (Pointing.)

19 **Q.** I will help you out. The reason why some
20 of these pattern drawings that you see -- and this
21 is just for informational purposes only -- are
22 generally drawn purely schematically.

23 A. I agree.

24 **Q.** So that's why sometimes you are seeing
25 things that might not necessarily -- so it's not a

1 pictorial depiction or 3D model. It's a schematic
2 drawing, and that's why it might not have every
3 detail.

4 A. Yeah. It's just -- if two metal pieces
5 are crossing each other, they are would just cut
6 into each other, right. So we have implants like
7 that, and they were biological. They were placed
8 one implant which is made of out of bone, then they
9 would put another perpendicular, and it would cut
10 the first one. And the first one would become too
11 short, and it would pop off. It would come out, and
12 the whole procedure would fail. So --

13 **Q. And that's exactly why --**

14 A. Imagine you were the surgeon, and you are
15 trying to insert that screw. You would have a
16 really hard time.

17 **MR. NELSON:** Are we on the record?

18 **MR. LYTVYN:** We are on the record.

19 **BY MR. LYTVYN:**

20 **Q. And that is why us attorneys need experts**
21 **to help us explain exactly what is going on, because**
22 **you have expertise in the field that we just don't**
23 **have.**

24 So counsel, do you have this -- sorry.
25 **They are having internet issues. So we'll hold off**

1 **on our discussion.**

2 **MR. BANKS:** Just a second.

3 **MR. NELSON:** Can you go off the record
4 until I have the document, please.

5 **MR. LYTVYN:** Okay. Off -- we are off the
6 record.

7 **THE COURT REPORTER:** Off the record.

8 **(Off the record at 2:24 p.m.)**

9 **(On the record at 2:28 p.m.)**

10 **(Exhibit 1019 marked for identification.)**

11 **MR. LYTVYN:** Banks just served --

12 Nelson Banks -- Exhibit 1019, and that is
13 U.S. Patent 9,421,109, which Orthocision previously
14 filed in an information disclosure statement during
15 prosecution of the '539 patent.

16 **BY MR. LYTVYN:**

17 **Q.** Dr. Zaporojan, do you recall seeing this
18 patent before?

19 A. I don't recall.

20 **Q.** Could you describe to me the implant
21 depicted in Figure 42M.

22 A. Yeah. It has a central body which is
23 marked with the Number 25, and it presents two
24 screws marked a Number 15 and 30. One is Number 15,
25 and one is Number 30.

1 **Q. In your opinion do these screws penetrate**
2 **the bone tissue?**

3 A. One of them could penetrate the bone
4 tissue, but the second one would have to penetrate
5 the first screw before it can penetrate bone.

6 **Q. So that is your understanding of --**

7 A. Yeah, because it's in the same plane, and
8 you can't just go through a metal screw and expect
9 that it's going to be a free pass.

10 **Q. Is it possible that they are in a**
11 **different plane?**

12 A. The way it's pictured here, it's in one
13 plane, because you see the head of the screw -- it's
14 in the same plane.

15 We had another patent at the very
16 beginning where they would start from a lateral
17 location, and then they would go into the bone, and
18 there would be no crisscrossing.

19 **Q. Could you flip to a previous figure. I**
20 **think that might have another --**

21 A. This one?

22 **Q. 40 -- what's that one?**

23 A. 42K, 42L.

24 **Q. Yes. So that one gives a different**
25 **perspective of how the screws being implanted. Does**

1 **that give you better idea?**

2 A. This is different, yeah. This is
3 different. This is different one. This is showing
4 that it's in a different plane.

5 Q. Okay. So based on these figures, is it
6 your understanding that these screws would penetrate
7 the bone tissue?

8 A. Yes.

9 Q. And would this implant compress the
10 joint?

11 A. Unlikely.

12 Q. And why do you say that?

13 A. I think the screws are just used to
14 stabilize the main implant. That's the purpose of
15 the two additional screws, and it's multicomponent-
16 type implant which is different from the one in
17 '539, Claim 32D.

18 Q. So you don't believe -- you do not believe
19 that that implant would compress the joint?

20 A. No. Because when you are factoring the
21 diameter the screws, individual screws, and the
22 diameter of the main component of the implant.
23 (Pointing.) It's just going to be oversized.

24 Q. So as we just mentioned earlier, the
25 drawing and the patterns are not drawn to scale, and

1 **they are schematic representations of what's going**
2 **on.**

3 A. Right. Right. But in my experience there
4 is a limitation on how small things could be
5 manufactured --

6 **Q. So how --**

7 A. -- and the break because there is a
8 requirement for the screw not to break. So you
9 can't really shrink it too much to a point that it
10 would break easily.

11 So you have to have a minimum diameter,
12 and by having two screws, by having the main
13 implant, it would be unlikely to provide the
14 compression.

15 **Q. And that's because the main body of the**
16 **implant -- that's referred to 25 -- would be too**
17 **large; is that correct?**

18 A. The main body plus two screws. So you
19 have three different components. Yeah.

20 So when you factor all three components,
21 altogether it would be unlikely to provide
22 compression. That's my opinion.

23 **Q. And do you believe that this implant could**
24 **be possibly modified in some way to be able to**
25 **compress the joint?**

1 A. Not in a design like this; multi-
2 components, no.

3 **Q. Could you go to Figure 57A.**

4 A. Yes, I'm here.

5 **Q. Can you describe your understanding of**
6 **this implant.**

7 A. Yeah. It's a classical interbody fusion-
8 type design with a central pole for the bone graft.
9 (Pointing.)

10 Usually they are made out of PEEK implant
11 P-E-E-K, which stands for polyether ether ketone.
12 So this is very common.

13 **Q. Are you personally familiar with this --**

14 A. I designed this type of implants, yes.

15 **Q. And are they applicable to SI joints?**

16 A. This one?

17 I don't think so.

18 Are they describing it for the SI joint?

19 I would be very surprised.

20 **Q. And why not?**

21 **Just looking at the --**

22 A. Just looking at it, see here the way the
23 grooves on the surface here go?

24 **Q. Yes.**

25 A. It's meant to -- and the way the tip of

1 the implant is designed, it's meant to be inserted
2 in the interbody space, and you have a tool that
3 looks like a fork that holds it from here.

4 There is a similar opening on the other
5 side, and you can grab the implant, and then in the
6 middle you have a tool that connects it to the
7 delivery tool, the delivery instrument, and then use
8 a mallet to advance it. I've tested a lot of this
9 ones.

10 **Q. Let's say, hypothetically, if this**
11 **implant were inserted into the SI joint, would it**
12 **fix relative lateral positions of the sacrum and**
13 **ilium?**

14 **A. No. Because you see the direction?**

15 It's longitudinal direction of the groups,
16 right? In the order to fix it you need to be under
17 90-degree angle of this. So direction is wrong in
18 order to provide fixation.

19 **Q. And what is your understanding of the**
20 **element referenced as 30?**

21 **A. 30. Yeah. 30 is an additional**
22 **stabilization component. So when you are advancing,**
23 **the interbody divides in this direction, right?**
24 **From right to left. And then this portion, Number**
25 **30, should enter the bone to provide additional**

1 stabilization, okay.

2 **Q. So in your opinion, would that fix**
3 **relative lateral positions of sacrum and ilium in**
4 **the SI joint?**

5 A. Not in a design like this. It would be
6 too risky.

7 **Q. And what type of information would you**
8 **need in order to be able to determine whether it**
9 **would fix relative lateral positions of the SI**
10 **joint?**

11 A. This would need a complete redesign for
12 the SI joint. This is typical interbody type.

13 **Q. And do you believe that implant would be**
14 **able to compress the joint?**

15 A. No. This is a pure destruction.

16 **Q. And why do you say that?**

17 A. Because (pointing) this height is smaller
18 than the one in the middle. (Pointing.)

19 So when you are advancing, you kind of
20 just increase the space between two interbodies.

21 **Q. Can you describe this more in verbal terms**
22 **so this lady has a description in the transcript. I**
23 **see what you are doing with your hand.**

24 A. 45. So for example, where it's 45.
25 (Pointing.) The height here is typically smaller.

1 **Q. And that's the distal end, right?**

2 A. That's the distal end, correct. So at the
3 distal end, the height of the implant is typically
4 smaller than in the middle. (Pointing.)

5 And also at the proximal end, the height
6 is smaller than in the middle. So once the
7 interbody implant is placed between two vertebral
8 bodies, let's say lumbar 4, lumbar 5. Or lumbar 3,
9 lumbar 4. Then the surface here of the interbody
10 implant would match the surface of the vertebral
11 body implate and provide --

12 **(Reporter requested clarification.)**

13 A. Implate. Implate, yes, like the
14 anatomical description.

15 And the grooves here would provide the
16 stabilization. And the bone graft in the middle
17 would fuse; would provide bone infusion between two
18 vertebral bodies.

19 **Q. If inserted into the SI joint**
20 **specifically, you do not believe this implant would**
21 **compress the joint or fix relative positions of the**
22 **joint?**

23 A. Yeah. They don't do it.

24 **Q. Okay. Could you go to Figure 84, the same**
25 **reference, please. So this is a -- this is a**

1 **proximal view of this implant, I believe. You are**
2 **looking at the proximal end.**

3 **Would you be able to explain to me your**
4 **understanding of this implant and how it functions.**

5 A. Yes.

6 **MR. NELSON:** Which is this?

7 **MR. LYTVYN:** 84.

8 **THE WITNESS:** 84. Yes. So 84.

9 (Pointing.) This would be the interbody fusion
10 device or implant, and it's marked here as 7150.

11 And then in the middle they placed kind of
12 like a -- the best way to describe it is something
13 that would deploy the hooks, and the hooks are
14 marked on under 30A, and those hooks would enter the
15 bone to provide additional stabilization.

16 However, this is prone to fail because the
17 bone is hard. The vertebral body implate is the
18 also hard, and sometimes when you try to rotate here
19 in the middle, then the hooks would just break
20 simply, especially you are dealing with two hooks.
21 It requires a lot of pressure.

22 **BY MR. LYTVYN:**

23 **Q. So if hypothetically you were to insert**
24 **this implant into the SI joint and deploy the hooks,**
25 **do you believe that it would fix relative lateral**

1 **positions of the sacrum and ilium?**

2 A. The design is too different from what
3 would be suitable for the SI joint.

4 **Q. And how so?**

5 A. It is just the hooks in the middle. So
6 you imagine the surgical procedure itself, for the
7 SI joint, you ideally would want to do it for
8 continuous. You only have longitudinal access to
9 the SI joint.

10 Here you need to come from 90-degree angle
11 to turn this screw in the middle, right?

12 So you need to create the separate access,
13 surgical access. So you will have SI joint access
14 here. Then you need to cut from the other side and
15 come in under 90-degree to adjust the screw. It's
16 just not practical.

17 **Q. So would you not be able to just --**

18 A. I would not be able to justify an
19 additional incision in the patient just to provide
20 the stabilization of the implant.

21 I think it -- the risk -- it's always a
22 risk/benefit ratio. It's much greater risk than the
23 benefit of having this inside.

24 **Q. And you don't think you would be able to**
25 **insert this implant through a surgical cannula**

1 **tool?**

2 A. You can insert the implant. I agree, but
3 try to turn this, (pointing) through a cannula. You
4 can't. That's a problem. And try to turn it by
5 putting enough force for this hooks to enter the
6 bone, that -- that's practically impossible.

7 **Q. Do you think it would compress the bone if**
8 **you were to -- I mean, compress the joint if you**
9 **were to be able to turn it?**

10 A. I don't know. I don't know. I will have
11 to think more, because this is just a very different
12 design, and it's for a different anatomical
13 location.

14 **Q. And what kind of additional information**
15 **would be helpful for you in order to determine**
16 **whether this type of implant would fix relative**
17 **lateral positions of the sacrum and ilium?**

18 A. I mean, ideally it would be to have a
19 prototype built and perform a cadaver lab.

20 **Q. And what would that entail?**

21 A. Provide the CAD drawings and manufacture
22 one of these pieces, and then use the delivery tools
23 to actually implant it into a donated human tissue,
24 like a cadaveric specimen.

25 When surgeons are doing cadaver labs to

1 train and test different implants -- that's what
2 would be required to provide a reasonably good
3 answer.

4 **Q. And --**

5 **A. By looking at this, it's -- (Pointing.)**
6 The way they design is -- it would require
7 additional surgical access, which is too much.

8 **Q. Okay. All right. Thank you. I think we**
9 **are done with that exhibit. Let's take a quick**
10 **break.**

11 **THE COURT REPORTER:** Off the record.

12 **(Off the record at 2:46 p.m.)**

13 **(On the record at 2:58 p.m.)**

14 **(Exhibit 1020 marked for identification.)**

15 **MR. LYTVYN:** This is Exhibit 1020.

16 And, Dr. Zaporojan --

17 **MR. NELSON:** Objection. Outside the scope
18 of direct testimony.

19 **MR. LYTVYN:** For the record, this is
20 U.S. Patent 6,468,309. That Orthocision submitted
21 in an IDS during prosecution of the '539 patent,
22 meaning that it's by definition deemed to be
23 material to authenticity of the claims of the '539
24 patent.

25 **BY MR. LYTVYN:**

1 **Q. And, Dr. Zaporojan, do you recall seeing**
2 **this patent?**

3 A. No, but the inventor is a friend of mine.
4 But I don't recall this.

5 **(Reporter requested clarification.)**

6 A. I said the inventor, Lieberman, is a
7 friend of mine from Texas, but I don't recall seeing
8 this particular patent.

9 **Q. Small world. Can you go to Figure 1,**
10 **please.**

11 A. Yes, I'm here.

12 **Q. Would you be able to describe to us your**
13 **understanding of this implant and how it works in**
14 **the process of how it's implanted -- insertion.**

15 A. Yes. The key here is the helical
16 stabilizing component, and it's for the interbody
17 fusion, so I think it's not applicable to SI joint.

18 **Q. Why would you say that?**

19 A. It's just -- the anatomy is too
20 different.

21 **Q. And what characteristics of the implant**
22 **itself would need to be changed in order to make to**
23 **suitable for the SI joint?**

24 A. That would be an entire research project.
25 I think it's beyond the scope of this case.

1 **Q. So just by looking at a figure of this**
2 **implant as a dual helical anchor, are you able to**
3 **tell whether it would fix relative lateral positions**
4 **of the sacrum and ilium?**

5 A. I cannot tell. It would require testing.
6 This is just designed for interbody fusion; the way
7 it's shown here.

8 **Q. Which aspects specifically make you say**
9 **that?**

10 A. You see where the helix is going through
11 the cubital bodies endplates on the top and at the
12 bottom, and it perforates multiple times -- the end
13 plates, and then it returns back again to the
14 superior and then the interior.

15 For the SI joint this would be an entire
16 research project. So there is no way to tell.

17 **Q. Hypothetically, if you were to insert this**
18 **type of implant into the SI joint, would you believe**
19 **they would fix relative lateral positions of the**
20 **sacrum and the ilium?**

21 A. I wouldn't even take a guess.

22 **Q. And do you think it would compress the SI**
23 **joint?**

24 A. I don't know.

25 **Q. Why not?**

1 A. I mean, it just -- it would require
2 testing. This is just way too different.

3 **Q. And what kind of testing?**

4 A. It would be creating prototype and then
5 making sure that the helix is capable of bond
6 perforation in the SI joint settings. And it would
7 require multiple biomechanical testing and material
8 testing.

9 **Q. So which variables of this design would**
10 **you need to test in order to figure out whether it**
11 **would fix relative positions on the sacrum and the**
12 **ilium?**

13 A. Yes. Here it would require prototype, and
14 then the prototype would require cadaver lab
15 testing. It's very different.

16 **MR. LYTUVYN:** Okay. No further questions.
17 And we yield the witness.

18 **MR. NELSON:** Okay. Can we go off the
19 record and take a break.

20 **MR. LYTUVYN:** Yes. Absolutely.

21 **THE COURT REPORTER:** Off the record.

22 **(Off the record at 3:04 p.m.)**

23 **(On the record at 3:40 p.m.)**

24 **MR. LYTUVYN:** We are back on the record,
25 and Mr. Nelson, the deposition is yours.

1 **THE WITNESS:** He mentioned he will take a
2 break for a few minutes.

3 **MR. LYTVYN:** Oh. Off the record.

4 **(Off the record at 3:40 p.m.)**

5 **(On the record at 3:48 p.m.)**

6 **MR. NELSON:** We are on the record.

7 **THE COURT REPORTER:** Yes.

8 **MR. NELSON:** Okay. And, Dr. Zaporojan,
9 the motion to amend, do you already have it?

10 **THE WITNESS:** You mean Paper Number 9,
11 with the claim study 235?

12 **MR. LYTVYN:** Just the appendix.

13 Mr. Banks --

14 **MR. NELSON:** The appendix is fine.

15 That's all. That's all that's needed --

16 **MR. LYTVYN:** Okay.

17 **MR. NELSON:** -- and Exhibit 1001, the '539
18 patent.

19 **THE WITNESS:** Yes. Got it.

20 **REDIRECT EXAMINATION**

21 **BY MR. NELSON:**

22 **Q.** Okay. Dr. Zaporojan, would you please
23 read the paragraph at the bottom of Column 13.

24 **A.** Yes.

25 **Q.** The '539 patent.

1 **Refreshed your memory?**

2 A. Figures 27-32B.

3 **Q. You don't have to read it out loud.**

4 A. Okay.

5 **Q. Refresh your memory.**

6 A. Oh, I don't have to read it aloud, okay.

7 **Q. Yeah.**

8 A. Yes. I read it.

9 **Q. Now, take a look at the figures mentioned**
10 **in that paragraph, Figures 27 through 32B.**

11 A. Yes. I'm looking at Figures 27 through
12 32B.

13 **Q. Okay. And you would read aloud the Claim**
14 **35.**

15 A. So Claim 35 says:

16 The method of Claim 32 wherein the working
17 channel includes at least one tang protruding from a
18 distal end of the working channel for securing a
19 position of the working channel in the sacroiliac
20 joint.

21 **Q. Okay. Based on your reading of the '539**
22 **patent, what does the term "working channel" mean?**

23 A. The working channel is the hollow portion
24 in the middle that could be described, for example
25 in Figure 28. It's marked as 138.

1 But if you look at longitudinal axis. So
2 the working channel is inside. It's a hollow
3 portion of what's in the figure.

4 **Q. Okay. And what would you call the -- I**
5 **will rephrase that.**

6 **How would you define the term, "at least**
7 **one tang" in Claim 35?**

8 A. So at least one tang that's described in
9 the Claim 35 would correspond to 180B or 180A in the
10 Figure 32A. It would have the same numbers in
11 Figure 32B.

12 So that's the protrusion from the distal
13 end. That could be described as a tang.

14 **Q. Okay. Let's go to Claim 32.**

15 A. Yes.

16 **Q. Can you read the first six lines in**
17 **Element B for Claim 32.**

18 A. "Rotating the fusion implant for a portion
19 thereof in the void, the fusion implant, having at
20 least one fixation element that penetrates both
21 tissue in an articular surface of at least one of an
22 ilium and a sacrum in the sacroiliac joint as the
23 fusion implant or a portion thereof is rotated
24 thereby fixing the ilium."

25 **Q. What does the term "at least one fixation**

1 **element" mean to you?**

2 A. It's a design feature of the implant that
3 would provide the functional fixation of a joint.
4 And the way you define the fixation is that after it
5 does occur, there is it no motion in that joint.

6 **Q. Okay. Looking at Figures 49 through 51 of**
7 **the '539 patent.**

8 A. Yes. I'm looking.

9 **Q. Can you identify any fixation elements in**
10 **those figures?**

11 A. Yes. The helix would serve as a fixation
12 element.

13 **Q. Can you identify it by reference number.**

14 A. 405 in Figure 49.

15 **Q. And in Figures 52 through 54, the '539**
16 **patent, can you identify any fixation elements.**

17 A. It would be 403 in Figure 52, and the same
18 in Figure 53.

19 **Q. What was that number you identified, sir?**
20 **You broke up a little bit.**

21 A. 403. Sorry about that. 403A in both
22 Figures 52 and 53. And the tip of it is shown as
23 405A in both figures.

24 **Q. And in Figures 56 and 57 of the '539**
25 **patent, do you see any fixation elements in those**

1 **figures?**

2 A. Yes. In Figure 56, 57 it would be the
3 503. The hooks, the lateral hooks, would be --
4 conserve as fixation elements.

5 Q. Can you please, Dr. Zaporojan -- Exhibit
6 1012. You already have it?

7 A. Yeah, I got it. 1012.

8 Q. If you can take a look at figures
9 previously discussed with both counsel: Figures 39A
10 through 39D, Figures 41A through 41D, and I believe
11 Figures 42A through 42F, were the examples that you
12 looked at.

13 A. Yes.

14 Q. You discussed threading. The term
15 "threading" with opposing counsel?

16 A. Yes.

17 Q. Can you describe what you understand to be
18 threading.

19 A. If you look at Figure 42D, for example,
20 42E or 42F. The protrusion, the lateral protrusion
21 which firmly attached to the body of the screw,
22 represent the threads. The protrusions from the
23 body of the screw represent the threads.

24 Q. And Figures 39A to 39B. Can you identify
25 the protrusions you're referring to by reference?

1 A. That would be 284.

2 **Q. And also in Figures 41A through 41B.**

3 **Which reference number refers to threading, the**
4 **threading spread?**

5 A. Yeah. I mean, it's 292. It's such a
6 unique design of this threads that they -- kind of
7 like a different kinds of threads.

8 **Q. Okay. So let's refer to Figures 39A**
9 **through 39E.**

10 **What function does that threading serve**
11 **when the implant depicted is inserted into the facet**
12 **joint?**

13 A. So those are meant to provide a cap into
14 the facet joint bone, like the above and below.

15 **Q. And do -- does the threading bone tissue**
16 **in adjacent bones?**

17 A. Superficially, yeah, it does.

18 **Q. You can refer back Exhibit 1001, '539**
19 **patent.**

20 A. Yes. I got it.

21 **Q. Would you look at Figures 49 through 51.**

22 A. Yes. I'm looking.

23 **Q. Do you see any threading in those images?**

24 A. No. I don't see a threading here. It's
25 helix.

1 Q. Dr. Zaporojan, you previously referred to
2 fixation elements in these images. Again, what are
3 the fixation elements in these images?

4 A. In Figure 49, 50, and 51, the fixation
5 elements are the helix, which would be 405.

6 Q. Okay. Figures 52 to 54, the '539 patent -
7 - do you see any threading there? The very next
8 page of the patent.

9 Sorry. I will ask you again. Figures 52
10 through 54 of '539 patent -- do you have those in
11 front of you?

12 A. Yes.

13 Q. Do you see any threading in those images?

14 A. No.

15 Q. Do you see any fixation elements?

16 A. Yes.

17 Q. And how would you describe the fixation
18 elements?

19 A. The helix. As described at 405.

20 Q. How would the helix, this helical fixation
21 element, for instance in Figure 52 through 54,
22 interact with the bone tissue as it is inserted into
23 sacroiliac joint?

24 A. The helix could be inserted into the iliac
25 bone, and then pass through the sacral bone and

1 provide a fixation.

2 **Q. Is that manner of fixation different than**
3 **what is accomplished by threading?**

4 A. Yes, it's different.

5 **Q. How would you say it's different?**

6 A. When you use a helix, it would be very
7 difficult to get a distraction. It's more of a
8 compression-type fixation.

9 **Q. Look at Figures 56 and 57 of '539 patent.**

10 A. Yes.

11 **Q. You see any threading in those images?**

12 A. No, I don't.

13 **Q. Do you see any fixation elements?**

14 A. Yes. The 503.

15 **Q. And how would you describe those fixation**
16 **elements?**

17 A. They could be described as hooks.

18 **Q. Okay.**

19 A. And the tip of the hook, 505, could be
20 inserted into bone to provide the fixation.

21 **Q. Okay. And then how would that interact**
22 **with the bone? That hook 505?**

23 A. The 505 would enter the bone surface.

24 **Q. How would you achieve penetration of the**
25 **bone with the 505 structure?**

1 A. So first you would have to insert the
2 implant in the SI joint. Most likely you have to
3 remove the fibrocartilage tissue to just leave the
4 bone.

5 And would you distract the joint when --
6 during the insertion of the implant, and then you
7 would release the distraction, and at that time the
8 hooks would enter the bone.

9 **Q. Would you rotate this implant?**

10 A. This one, no. Because of the hooks it
11 would be really hard to rotate it.

12 **MR. NELSON:** No more questions.

13 **MR. LYTVYN:** We will take a quick break
14 and let you know if there will be recross.

15 **THE COURT REPORTER:** Off the record.

16 **(Off the record at 4:07 p.m.)**

17 **(On the record at 4:10 p.m.)**

18 **MR. LYTVYN:** No recross on our part.

19 So that concludes this deposition.

20 **THE COURT REPORTER:** Before you leave,
21 Mr. Nelson, we need to get transcript order on the
22 record.

23 **MR. NELSON:** Yes. We all -- we, Sierra
24 IP Law, needs a copy of the transcript. We don't
25 need it expedited.

1 **THE COURT REPORTER:** Okay.

2 **MR. LYTUVYN:** And Painteq needs a copy as
3 well, and we would like ours expedited within five
4 business days.

5 **THE COURT REPORTER:** Okay. We are done,
6 Counsel.

7 **(Deposition concluded at 4:11 p.m.)**

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CERTIFICATE

I, Teri Celeste Gibson, do hereby certify that I reported all proceedings adduced in the foregoing matter and that the foregoing transcript pages constitutes a full, true and accurate record of said proceedings to the best of my ability.

I further certify that I am neither related to counsel or any party to the proceedings nor have any interest in the outcome of the proceedings.

IN WITNESS WHEREOF, I have hereunto set my hand this 21st day of October, 2022.

A handwritten signature in cursive script, reading "Teri C. Gibson", is written over a horizontal line.

Teri Celeste Gibson, CSR, RPR, CRR
Notary Public - My Commission Expires 2/7/2025

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Victor Zaporozjan, MD

DECLARATION

Deposition of: Victor Zaporojan, MD Date: 10/14/22

Regarding: PAIN TEQ LLC, et al. vs. Orthocision, Inc.

Reporter: Gibson

I declare under penalty of perjury the following to
be true:

I have read my deposition and the same is true and
accurate save and except for any corrections as made
by me on the Correction Page herein.

Signed at _____, _____
on the _____ day of _____, 2022.

Signature _____

Victor Zaporojan, MD

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