

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

PRECISION PLANTING LLC,)
)
 Petitioner,) Case No.
) IPR2024-00008
vs.)
) U.S. Patent No.
MASCHIO GASPARD0, S.P.A.,) 8,770,121
)
 Patent Owner.)

VIDEO-RECORDED DEPOSITION OF HARRY DANKOWICZ
TAKEN ON BEHALF OF THE PETITIONER
SEPTEMBER 26, 2024

Precision Exhibit 1023
Precision Planting v. Maschio Gaspardo
IPR2024-00008

I N D E X

WITNESSES

ALL WITNESSES PAGE

For Petitioner

HARRY DANKOWICZ

Examination by Mr. Brown

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EXHIBITS

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(Exhibits retained by counsel.)

STENOGRAPHER'S NOTE: All quotations from exhibits are reflected in the manner in which they were read into the record and do not necessarily denote an exact quote from the document.

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VIDEO-RECORDED DEPOSITION OF WITNESS,
HARRY DANKOWICZ, produced, sworn and examined on
the 26th day of September, 2024, via Veritext
Virtual Videoconference, before Tara Schwake, a
Registered Professional Reporter, Certified
Realtime Reporter, Certified Shorthand Reporter
(IL), Certified Court Reporter (MO), and Notary
Public within and for the State of Missouri.

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1 IT IS HEREBY STIPULATED AND AGREED by and
2 between Counsel for Petitioner and Counsel for
3 Patent Owner that this deposition may be taken by
4 Tara Schwake, Notary Public and Certified Realtime
5 Reporter, thereafter transcribed into typewriting,
6 with the signature of the witness being expressly
7 reserved.

8 * * * * *

9 (Deposition commenced at 8:59 AM.)

10 THE VIDEOGRAPHER: Good morning. We
11 are on the record at 8:59 AM Central Time on
12 September 26, 2024. This is media unit one of the
13 video-recorded deposition of Harry Dankowicz, taken
14 by counsel for Petitioner in the matter of
15 Precision Planting LLC versus Maschio Gaspardo,
16 S.P.A., filed in the US Patent and Trademark Office
17 before the Patent Trial and Appeal Board, Case
18 Number IPR2024-000008.

19 And this deposition is being
20 conducted remotely using virtual technology. My
21 name is Tim Perry, Certified Legal Video
22 Specialist. Our certified court reporter is Tara
23 Schwake. We are with Veritext Legal Solutions.

24 Counsel, will you please identify
25 yourselves for the record?

1 MR. BROWN: This is Scott Brown
2 appearing on behalf of Petitioner, and I have here
3 with me today my partner, Matt Walters.

4 MR. CASEY: I'm Kevin Casey, I'm
5 counsel for the patent owner, Maschio Gaspardo, and
6 representing Mr. Dankowicz, who is an expert for my
7 client.

8 THE VIDEOGRAPHER: And thank you,
9 Counsel. Tara, will you please swear in the
10 witness?

11 HARRY DANKOWICZ,
12 Of lawful age, having been produced, sworn, and
13 examined on the part of Petitioner, testified as
14 follows:

15 EXAMINATION

16 QUESTIONS BY MR. BROWN:

17 Q Good morning, Dr. Dankowicz.

18 A Good morning.

19 Q Have you ever been deposed before?

20 A I have not.

21 Q All right. Well, let me just take a
22 moment to go over some of the ground rules to
23 hopefully make things as easy today as possible.

24 First, you understand that even
25 though we're conducting this over a video, you've

1 been sworn to tell the truth as if you were sitting
2 in a court of law?

3 A I do understand that.

4 Q Because we have a court reporter who
5 is creating a transcript of everything that we say,
6 it's important that all of your answers be audible.
7 So a nod or a shake of the head doesn't make it
8 onto the transcript.

9 So would you make sure to verbally
10 answer the questions today?

11 A I will.

12 Q I'm going to do my best to ask clear
13 questions of you, but if you don't understand one
14 of my questions, please ask me to clarify it. If
15 -- if you answer, I'm going to assume you
16 understood the question. Is that acceptable?

17 A That is acceptable.

18 Q I'm going to try and remember to take
19 a break about every hour or so, maybe a little
20 longer. But if at any time you need a break,
21 please just let me know, and as long as a question
22 isn't pending, we will take one.

23 Your counsel may object sometimes to
24 my questions, but do you understand that even if he
25 objects, you will still have to give an answer?

1 A No.

2 Q Well, we'll -- we'll see what happens
3 but I will tell you that unless he's instructed you
4 not to answer a question, you still need to make a
5 response.

6 Are you aware of any reason today why
7 you can't provide full, complete, and truthful
8 answers to my questions?

9 A I'm not aware of any such reason.

10 Q All right. Do you take medication
11 that might impair your memory?

12 A I do not.

13 Q Where are you located today?

14 A I am in Rockville, Maryland.

15 Q Is there anyone there in the room
16 with you?

17 A There is not.

18 Q Do you expect anyone to join you in
19 the room today?

20 A I do not.

21 Q Do you have any documents with you?

22 A I do not.

23 Q Do you have access to any documents
24 on the computer you're using?

25 A None that are currently on my

1 computer. None are open on my computer. But I
2 could access if instructed to do so.

3 Q Okay. I think what we'll do is kind
4 of start by screen sharing with you a document that
5 has been previously marked as Maschio Exhibit 2012,
6 which is your Declaration. Can you see that?

7 A I can.

8 Q Okay. I'm going to scroll down here
9 a little bit, and I wanted to just ask you a few
10 questions about your background and experience, if
11 I may. You say, in paragraph 9 of your
12 Declaration, that your -- well, let me ask a
13 different question maybe. I'll ask an open-ended
14 question.

15 Can you describe for me the projects
16 that you worked for that were -- or worked on that
17 were funded by Deere & Company?

18 A To a degree I can.

19 Q Okay. Let's start with what -- what
20 was the subject matter of those projects?

21 A Precision agriculture, as described
22 in the article that you're sharing with me right
23 now.

24 Q Okay. And what do you mean by
25 "precision agriculture"?

1 A So that we were investigating methods
2 and tools for collecting reliable and precise data,
3 as is described here, for planting and harvesting
4 equipment. Mostly, in our case, harvesting
5 equipment.

6 Q And what types of data were you
7 collecting?

8 A In the case of a combine, the data of
9 interest is the flow of mass through the combine
10 for yield mapping.

11 Q You said you also had some
12 involvement with planting. Is that right?

13 A So the paragraph here describes the
14 meaning of the word "precision agriculture." The
15 work that we did for planting wasn't specifically
16 precision agriculture but I think it's mentioned
17 further down on the -- in the same article if you
18 want to scroll to the next page. Work that we did
19 on autonomous planter seed-refilling system towards
20 the end of that paragraph.

21 Q What is an autonomous planter
22 seed-refilling system?

23 A So a seed -- a planter is a tractor
24 that's pulling a seed drill. A seed drill has
25 seeds in tanks that are then passed through a

1 mechanical system to plant the seeds in the ground.
2 When the tank's empty, it becomes necessary to
3 refill the tanks.

4 An autonomous system is one that acts
5 without direct control of a human operator. And so
6 an autonomous planter seed-filling system is a
7 system that can refill those tanks autonomously.

8 Q Did your work -- well, what kind of
9 -- let me ask a different question.

10 When you say "seed drill," can you
11 generally describe what you mean by that?

12 A My understanding is that it's the
13 mechanism that's pulled behind the tractor that
14 consists of many, many row units that plant seeds
15 in the field.

16 Q And did you -- did your involvement
17 in that project include using seed drills that had
18 seed meters?

19 A No.

20 Q What type -- what type of mechanism
21 on those seed drills spread the seeds?

22 A So the research we did, did not
23 actually involve any actual seed drill. It was
24 done through the concept of a tank that needs to be
25 refilled autonomously.

1 Q And then earlier you talked about
2 mass flow meters for a combine. A combine does not
3 have seed meters on it. Is that correct?

4 A Combine is a harvesting device. That
5 is correct.

6 Q And so does any of the work that you
7 did with Deere & Company relate in any way to seed
8 meters themselves?

9 A So some of the work with Deere I
10 cannot disclose due to confidentiality so I will
11 not be able to respond to this question.

12 Q Okay. With regard to what you have
13 referred to in your Declaration, does any of that
14 work relate to seed meters?

15 A Yes. The last sentence of article 9
16 refers to an invention disclosure that I filed with
17 the University of Illinois for a brush design of a
18 seed-delivery system. Which is a seed meter.

19 Q So what type of seed meter was
20 involved in the invention disclosure that you're
21 referring to there?

22 A So I can only give you, again, due to
23 confidentiality, very little detail. No specific
24 seed meter was described in that disclosure.
25 Instead, it was the concept of a brush design that

1 was disclosed.

2 Q And when you say "a brush design,"
3 what was the function of the brush?

4 A To deliver the seeds in the desired
5 fashion.

6 Q Okay. Fair to say that the invention
7 disclosure that you refer to in the last sentence
8 of paragraph 9 was not a pneumatic seed meter?

9 A The disclosure did not concern the
10 pneumatics or any other mechanism. It solely
11 concerned the brush design.

12 Q Okay. And what did the brush
13 interact with, if you can tell me?

14 A Seeds.

15 Q Was the brush responsible for
16 collecting seeds out of a pool?

17 A I can't recall.

18 Q Have you ever had any involvement in
19 the design of a pneumatic seed meter?

20 A I have not.

21 Q Have you ever worked directly on a
22 project that included a device that uses or used a
23 pneumatic seed meter?

24 A Yes.

25 Q Can you tell me when that was?

1 A This would have been the work a
2 decade ago.

3 Q What work was that?

4 A The work that is referred to in this
5 paragraph.

6 Q Are you talking --

7 A Article 9.

8 Q Which part of -- which part of the
9 paragraph refers to that work?

10 A Which part of the paragraph refers to
11 which work?

12 Q I thought you just said that you had
13 involvement with a pneumatic seed meter, and that
14 it's the work that was related to that is mentioned
15 in this paragraph. Is that correct?

16 A I think I need to qualify or at least
17 get some clarity on what you are implying when
18 you're saying I have involvement. Could you be
19 more specific as to what you mean by involvement?

20 Q Okay. So I -- you previously said
21 that you've never designed a pneumatic seed meter;
22 is that correct?

23 A Yes.

24 Q Okay. So now I'm just asking more
25 generally. Have any of your projects included

1 working with a pneumatic seed meter?

2 A Not directly.

3 Q When did you first become familiar
4 with the operations of a pneumatic seed meter?

5 A I can't recall the exact date, but
6 this would have been around 2014 probably.

7 Q And did that relate to your projects
8 for modeling, or the autonomous -- I'm sorry, let
9 me find the words. The autonomous planter
10 seed-refilling system?

11 A It would have preceded that.

12 Q What was the circumstance in 2014
13 that you became familiar with pneumatic seed
14 meters?

15 A That would have been in the context
16 of the last sentence of that article, having to do
17 with the invention disclosure. And the work that
18 we did to develop that idea.

19 Q Did the -- did the invention
20 disclosure ever result in the filing of a patent
21 application?

22 A Not to my knowledge.

23 Q Did -- did you prepare this
24 Declaration yourself?

25 A I prepared portions of it entirely by

1 myself. I had portions suggested to me by
2 Mr. Casey and his assistant. We talked it through
3 at great length, I provided suggestions and edits
4 and finally arrived at a version that was
5 consistent with my understanding of circumstances.

6 Q Did you and counsel for Maschio
7 Gaspardo trade back and forth versions of the
8 Declaration?

9 A We did.

10 Q There is a section in the report
11 called Legal Standards. Do you recall that?

12 A I do.

13 Q Did counsel provide for you the legal
14 standards that are recited in the Declaration?

15 A Yes. As well as some of the
16 references that are cited above. Having to do with
17 legal standards.

18 Q You say that you have -- in paragraph
19 15 you say (quote as read):

20 I have endeavored to faithfully
21 apply these legal standards.

22 Did you discuss how to apply the
23 legal standards with counsel?

24 A Yes.

25 Q Did you -- I know in one of your

1 materials referenced -- let me go back up and look
2 at it. So in the final bullet point shown on the
3 screen here, I believe it would be paragraph 14,
4 you mention a "PTO memorandum dated March 18,
5 2024." Did you read that memorandum?

6 A I did.

7 Q You also refer to, it looks like an
8 article, "Inter Partes Review: Expert
9 Considerations, Practical Law Practice Note."

10 Did you read that?

11 A At this point, I can't recall.

12 Q And you also refer to a book titled
13 Patent Law in a Nutshell. Did you read that?

14 A I read selected chapters from that
15 book.

16 Q Do you recall what the subject of the
17 selected chapters was that you read?

18 A I believe they have to do with claims
19 construction, anticipation, and obviousness.

20 Q What is your understanding of what is
21 required to find that a prior art reference
22 anticipates a claim?

23 A My understanding is as described in
24 this paragraph 27. That it needs to be done in a
25 single prior art reference and that it should be

1 described exactly or, you know, in the way that the
2 claim arranges these limitations.

3 Q Does the reference have to use the
4 exact words that are discussed in the claim of the
5 patent that's being challenged?

6 A I think so.

7 Q And is that how you performed your
8 analysis to determine anticipation?

9 A Sorry, could you be more clear about
10 your question?

11 Q Yes. You said that you understand
12 for a prior art reference to anticipate, it has to
13 use the exact language that's used in the patent
14 that's being challenged.

15 I'm just asking if that's how you
16 applied the law when you performed your analysis
17 that's reflected in this Declaration.

18 A So you just paraphrased something and
19 asked me to say yes or no to it, but your
20 paraphrasing is incorrect. I did not say that it
21 had to contain the exact language. In fact, to
22 your question, I said it did not.

23 Q Okay. Well, what's your
24 understanding of what's required, then, for there
25 to be an anticipation? Does the prior art

1 reference need to use the same language that's used
2 in the patent that's being challenged?

3 A No.

4 Q In paragraph 9 -- I'm sorry,
5 paragraph 29, you discuss obviousness. And in
6 particular, I want to focus on a portion where you
7 say, (quote as read):

8 I understand that references
9 qualify as prior art for an
10 obviousness determination only
11 when they are analogous to the
12 claimed invention.

13 Do you see that?

14 A I do.

15 Q Then you say, (quote as read):

16 Two separate tests define the
17 scope of analogous prior art:
18 (1) whether the art is from the
19 same field of endeavor,
20 regardless of the problem
21 addressed.

22 Do you see that?

23 A I do.

24 Q You are familiar with the prior art
25 reference to VenHuizen; is that correct?

1 A That is correct.

2 Q Would you agree with me that the
3 VenHuizen references analogous prior art based on
4 this definition that you've recited your
5 declaration?

6 A It does indeed appear to be, yes.

7 Q Would you also agree with me that the
8 Fiorido reference is analogous prior art?

9 A Yes.

10 Q And would you agree with me that the
11 Amazone reference is analogous prior art?

12 A I would.

13 Q What is your understanding of what it
14 means for a prior art reference to teach away?

15 A My understanding, I believe, is
16 described a little further down in the text. There
17 are a number of different examples that are listed
18 having to do with giving instructions that either
19 suggest the opposition to what a subsequent
20 invention proposes or provide a suggestion that
21 would make a device inoperable. Those are some of
22 the examples that I recall.

23 Q Is it your understanding that for a
24 prior art reference to teach away, it must
25 disparage the -- the concept that it's teaching

1 away from?

2 A No.

3 Q When analyzing making a combination
4 between two references, an obviousness combination,
5 is it your understanding that the -- the
6 disclosures have to be fit together like puzzle
7 pieces?

8 A No.

9 Q Can -- are you -- are you familiar
10 with the term "person of ordinary skill in the
11 art"?

12 A I am.

13 Q Okay. I might shorthand that
14 occasionally today and refer to a "POSA." If I say
15 "POSA," I mean person of ordinary skill in the art.
16 Okay?

17 A Okay.

18 Q Can a person of ordinary skill in the
19 art making a combination between two references,
20 are they allowed to modify one of the references to
21 make it work with the other reference?

22 A I don't know.

23 Q Can the feature of one reference be
24 modified so that it would work with the features of
25 another reference as part of an obviousness

1 challenge?

2 A Don't know that I can answer these
3 questions with yes or no. If you wanted me to sort
4 of imagine things, I would be happy to talk about
5 that, but when you're asking me yes or no
6 questions, as I'm not an attorney, I'm going to go
7 with what I wrote in the text here where I don't
8 believe I made any such assumptions about the
9 answer being either yes or no to this question.

10 Q What is your understanding or your
11 opinion about the level of ordinary skill in the
12 art with respect to the '121 patent?

13 A That's also explained in the
14 document. I think that we've articulated -- I have
15 articulated in the document that I agree with the
16 statement that has been made by Precision as to
17 what constitutes a person of ordinary skill in the
18 arts.

19 Q Do you recall what Precision said?

20 A Partially.

21 Q What -- what do you remember?

22 A Well, let me put it this way. I
23 believe that my qualifications meet and to a
24 significant degree exceed those basic expectations
25 of a person of ordinary skill in the art.

1 Q I'm sure they do. What -- what is
2 your understanding, though, when making the
3 obviousness determination, how are you supposed to
4 consider or include the person of ordinary skill in
5 the art in that analysis?

6 A I would look at the experience that I
7 have as a mechanical engineer or someone who has
8 worked in design of mechanical devices. My degree,
9 of course, as you know, is not mechanical
10 engineering, but I have worked in departments that
11 educate and research mechanical engineering.

12 I would apply my understanding of
13 parts and components. I would apply my
14 understanding of the mechanics that's involved, the
15 science of mechanics. I would apply my
16 understanding of the types of tools of the trade
17 that exist in terms of different components that
18 are used, the language that's used to describe
19 them, and the natural way in which components can
20 be applied after they've been designed in a variety
21 contexts.

22 In this case I would also apply some
23 of my understanding of Precision agriculture and
24 the machines that we've discussed earlier.

25 Q Is a person of ordinary skill

1 understood to be able to use ordinary creativity in
2 his job when analyzing obviousness?

3 A That needs to be qualified by the
4 notion that hindsight really shouldn't govern the
5 decision of obviousness. Something may appear
6 obvious to a person of ordinary skill after it's
7 been presented to them, but the -- one would not be
8 able to take that into -- or one would have to sort
9 of exclude that in analyzing the -- the question at
10 hand.

11 Q So I understand that you're not
12 supposed to use hindsight in determining whether
13 something's obvious. My question, though, was in
14 analyzing whether something would be obvious to a
15 person of ordinary skill, do you assume that they
16 have some level of creativity when they are
17 assessing the problem?

18 A I would not assume that they apply
19 creativity. I would assume that they apply the
20 skills and training that they have received and the
21 experience they have in how ideas may be combined,
22 as to looking at a variety of sources and seeing
23 what a possible natural way of combining those
24 components might be in order to arrive at the
25 suggested invention.

1 Q Have you ever personally worked on
2 the mechanical design of any piece of agricultural
3 equipment?

4 A I have.

5 Q What equipment was that?

6 A A yield flow. A yield map sensor. A
7 mass flow sensor.

8 Q And what was the principle of
9 operation of the mass flow sensor?

10 A In a harvest combine, grains that
11 have been harvested and separated from the chaff
12 are passed through a mechanism that throws the
13 grains against a plate. That plate deflects due to
14 the impact of the grains onto the plate. The
15 deflection of the plate is then measured by an
16 electromagnetic sensor which determines the amount
17 of deflection and then that reading of that sensor
18 is related back to the amount of mass flow through
19 the sensor. That is the function.

20 Q And what aspects of the mechanical
21 part of that mass flow sensor that you just
22 described did you work on?

23 A I'm sorry, what parts of the
24 mechanical design? Is that what the question is?

25 Q Yes.

1 A The specific aspect of mechanical
2 design was an invention that included an embodiment
3 in which the plate would be able to rotate
4 mechanically in time.

5 Q I've scrolled down to paragraph 38 of
6 your Declaration, which is the section where you
7 describe the '121 patent. Can you see that?

8 A Yes.

9 Q In this paragraph you're describing
10 the operation of the disclosed pneumatic seed
11 meter, and I want to focus first on a sentence
12 where you say, (quote as read):

13 In practice, a strong air suction
14 is exerted on one of the faces of
15 the sowing disc which retains the
16 seeds on the opposite face in the
17 region of the respective holes.

18 Do you see that?

19 A I do.

20 Q Now, when you say, "in practice," are
21 you referring generally to the way that pneumatic
22 seed meters operate?

23 A It is my recollection that this
24 sentence is close to, if not verbatim from the '121
25 patent, and I am using that information in this

1 paragraph 38. I believe much of this text, in
2 fact, is from the '121 patent.

3 Q Is it your understanding that
4 pneumatic seed meters, in general, apply a strong
5 air suction on one of the faces of the sowing disc?

6 A It is my understanding based on the
7 patent and information that has been given to me.

8 Q And what do you understand "strong
9 air suction" means?

10 A I don't have an answer to that
11 question other than that it's air suction. In
12 terms of "strong," I guess that would mean
13 sufficiently strong but exactly how strong, I don't
14 know.

15 Q Would you agree that the strong air
16 suction would lead to a strong force on the seed
17 disc?

18 A In much the same way as we're now
19 using the word "strong," without a qualification of
20 what exactly that means, I would agree that air
21 suction would result in a force on the sowing disc.

22 Q When were you first hired for -- to
23 work for Maschio Gaspardo?

24 A I believe the first contact was made
25 in December of 2023, and the actual agreement was

1 signed I believe in January of 2024.

2 Q Have you done, as part of your
3 analysis, have you made any effort to assess the
4 strength of the vacuum forces that are used in a
5 pneumatic seed meter?

6 A I have not.

7 MR. CASEY: Let me interject one
8 brief thing, Mr. Brown, here. Paragraph 11 of
9 the document that you're going through with
10 Dr. Dankowicz refers to previously not being
11 retained as an expert, and that is correct, but I
12 thought I, in response to your previous question,
13 seek clarification that what I think Dr. Dankowicz
14 means in paragraph 11 is that he's been retained
15 both in this IPR proceeding and in the related
16 litigation. But in nothing else.

17 But I thought it would be helpful to
18 clarify that.

19 Q (BY MR. BROWN) Is that accurate,
20 Dr. Dankowicz?

21 A That is accurate.

22 Q Thank you. Have you done any
23 analysis of the vSet meters that are accused of
24 infringement by Maschio Gaspardo in the lawsuit?

25 A No.

1 Q Have you ever seen a vSet meter
2 accused of infringement by Maschio Gaspardo?

3 A Could you clarify what you mean by
4 "seen"?

5 Q Visually laid eyes on?

6 A In an image, or in real life?

7 Q In real life.

8 A No.

9 Q In an image?

10 A I believe so. At least I believe
11 I've seen, at the end of this -- and I'm going to
12 qualify my answer by suggesting that at the end of
13 this document, there are some images from a manual,
14 and that's the extent to which I've seen the vSet
15 devices.

16 Q Okay. So the manual that you
17 attached to your Declaration.

18 A Correct.

19 Q You say in your Declaration that
20 (quote as read):

21 For the correct functioning of
22 such seed distribution elements,
23 it is necessary to ensure an
24 effective pneumatic seal between
25 the face of the sowing disc that

1 is subjected to suction and a
2 seal (24) which delimits the
3 pneumatic suction chamber (17).

4 Do you see that?

5 A I do.

6 Q What -- what do you mean, "an
7 effective seal," in that sentence?

8 A Apologize for the dog. I'm hoping
9 that it's not disturbing you. The seal in this
10 case, the chamber is meant to provide a lower
11 pressure on one side of the disc than the other.
12 If there is not an effective pneumatic seal, then
13 that lower pressure will not be sufficient to
14 retain the seeds against the sowing disc.

15 Q And you go on to say that (quote as
16 read):

17 The suction effects a substantial
18 compression of the sowing disc
19 against the seal.

20 Do you see that?

21 A I do.

22 Q What do you mean by "substantial
23 compression"?

24 A Again, this sentence, as well as the
25 preceding one, I believe, are from the '121 patent.

1 I have no particular way of understanding
2 "substantial compression," the adjective
3 "substantial," other than to suggest that it's
4 something that one needs to take into account.

5 Q Will the substantial compression
6 cause a deformation in the seal?

7 A If the disc is indeed pushing against
8 the seal, then -- and the seal is typically a
9 material that can deform in some measurable way,
10 then yes.

11 Q Would you agree with me that the '121
12 patent discloses that the problem of where on the
13 seal was a known problem prior to the '121 patent?

14 A Yes.

15 Q And that the solution of providing a
16 thrust bearing element was also a known solution in
17 the prior art?

18 A I am -- I am informed by the '121
19 patent to that effect. I am only able to go with
20 what the '121 patent says. I am not otherwise
21 informed of that.

22 Q Okay. So you don't have any
23 independent knowledge of that, but you agree that
24 the '121 patent says that thrust bearing elements
25 were known before the '121 patent?

1 A I do.

2 Q And the '121 patent says that the
3 thrust bearing elements were on the fixed side of
4 the housing in the prior art. Correct?

5 A I believe the patent elaborates a
6 little more on that topic than just that simple
7 sentence, but I do recall, in effect, that being
8 true. Correct.

9 Q Okay. And it would have to be on the
10 fixed side, because the vacuum was on the fixed
11 side of the housing in the prior art. Correct?

12 A Again, this is information that I
13 received from the patent '121. At this moment I
14 don't recall the exact wording. If you wanted to
15 bring it up, I could certainly refer to it, and I
16 believe it's probably mentioned somewhere in this
17 text as well, if you scroll down a little bit, but
18 I can't recall the exact wording at this time.

19 Q Do you recall that -- well, let me
20 ask it a different way. Isn't it true that the
21 thrust bearing element would have to be mounted to
22 the side where the vacuum is in order for it to
23 perform its function of relieving some of the axial
24 force on the seal?

25 A Are you asking me whether it is true,

1 or in fact you're saying isn't it true, so can you
2 be a little clearer about what exactly I'm
3 answering?

4 Q I'll try and restate the question.

5 A Okay.

6 Q Isn't it true --

7 A Can we not do a double negation here
8 and just do an is it true?

9 Q Okay, let me try it that way.

10 A Yeah.

11 Q Do you agree that the thrust bearing
12 element would have to be mounted so that it is on
13 the side of the vacuum in order to relieve axial
14 force being applied to the seal by the disc?

15 A No.

16 Q What's incorrect in that statement?

17 A Okay. Let's start, I'm sorry. I
18 have to -- well, let me suggest the following. And
19 you're asking me to now be creative as an engineer.
20 I can imagine an attachment mechanism that is not
21 positioned on the side of the pneumatic chamber
22 that reduces the amount of deformation of the disc
23 against -- or the amount of the compression of the
24 disc against a seal. Without that mechanism being
25 positioned in the pneumatic chamber area.

1 Q You have quoted some language here, I
2 believe, coming from the specification of the '121
3 patent. And it says, (quote as read):

4 ...seed drills have been
5 developed which are equipped with
6 a thrust-bearing element which
7 relieves the heavy load on the
8 seal. In all cases, however, the
9 thrust-bearing element, which
10 must be rotated with the disc, is
11 mounted on the fixed portion of
12 the housing.

13 Do you see it?

14 A I do.

15 Q Okay. So is it accurate that
16 rotatable thrust-bearing elements were known in
17 the prior art?

18 A I am only able to infer from this
19 paragraph what the inventor understood to be the
20 prior art at the time that this was filed,
21 including the -- when it says "in all cases,"
22 referring to the seed drills that are being
23 described in the first sentence of that paragraph.
24 I have no other knowledge of -- of these types of
25 devices other than what's informed in this

1 paragraph.

2 Q Is it your understanding from reading
3 what the inventor has said, that thrust-bearing
4 elements which rotated with the disc were known in
5 the prior art?

6 A I am led to infer that that is indeed
7 correct per that paragraph.

8 Q And the inventor says that they were
9 mounted on the fixed portion of the housing.
10 Right?

11 A That is correct.

12 Q And one of ordinary skill would
13 understand that they were on that side in order to
14 relieve the axial load of the disc against the
15 seal. Correct?

16 A Indeed.

17 Q And one of ordinary skill would know
18 that a rotatable thrust-bearing element of the type
19 being described by the inventor here would have to
20 be on the same side as the vacuum.

21 A No.

22 Q Why is that wrong?

23 A As I was responding to earlier, were
24 I to be creative as an engineer, I might imagine a
25 mechanism, a structure that would be attached to

1 the sowing disc from the other side, not the side
2 where the pneumatic chamber resides, that would
3 minimize or reduce the amount of compression
4 applied by the sowing disc on the seal.

5 That's not what the inventor is
6 saying here, but you're asking me an opinion that's
7 outside of what the inventor is saying.

8 Q Well, my question was, would one of
9 ordinary skill, prior to the '121 invention, have
10 understood that a -- if he was going to use a
11 rotatable thrust-bearing element as being described
12 by the inventor here, that rotatable element would
13 have to be on the side of the disc that was exposed
14 to the vacuum?

15 A If I've answered this question -- if
16 you had approached me at the time that this patent
17 was filed and asked whether the only way to bear --
18 or to have a thrust-bearing element that can rotate
19 with the disc in order to limit the compression of
20 the disc against a seal required that
21 thrust-bearing element to be in the part of the
22 mechanism that has the vacuum or the pneumatic
23 chamber, I would not automatically have said yes to
24 that question.

25 Rather, I would have thought

1 carefully about the possibility of doing it other
2 ways, and as I am -- as I was asked to do that now,
3 I imagine that it might be possible to do it other
4 ways. Which is why I said no to your question.

5 Q And in that response, are you using,
6 in your mind, the definition of one of ordinary
7 skill in the art at the time --

8 A I believe so.

9 Q -- invention --

10 A I believe so, yes. I'm certainly not
11 applying any knowledge I gained since 2000 -- you
12 know, whenever this was filed in the late aughts.

13 Q And when this was filed, would you
14 consider yourself at that point in time to have
15 been one of ordinary skill in the art, or to have
16 more than ordinary skill in the art?

17 A I'm comfortable saying I was of
18 ordinary skill in the art at the time that this was
19 filed.

20 Q At the bottom of this quotation that
21 you have cited here there's a paragraph that begins
22 "Furthermore." Do you see that?

23 A I do.

24 Q Can you tell me what -- what is being
25 referred to there? What drawbacks are being

1 referred to?

2 A It's my understanding of these
3 several paragraphs, that they highlight the
4 inventor's sense of the state of the art at the
5 time of the invention, that they highlight certain
6 challenges that the inventor has identified with
7 the state of the art, involving the complexity of
8 replacing the sowing disc. Or for that matter,
9 replacing the seal. If -- if there is a way around
10 either one of the two or the sowing disc needs to
11 be replaced, one of the two might need to be
12 replaced.

13 The complexity of doing so might
14 involve removing parts, might involve un -- the
15 attach -- disattaching, you know, unattaching
16 parts, sorry, I'm not using the correct language
17 here, and adjusting other things, maybe moving
18 things out of the way, in order to be able to
19 remove the parts that need to be replaced.

20 And it is my understanding that the
21 inventor is highlighting the fact that such
22 complexity is not desirable because it slows down
23 the process of doing the replacement and, you know,
24 could lead to other implications, I suppose,
25 consequences to the device.

1 That last paragraph, I believe,
2 refers to parts of the distributor, the -- the
3 selector and the ejector of the seeds that also
4 might then have to be removed in order to replace
5 the sowing disc in the state of the art as the
6 inventor understands it at the time of the
7 invention.

8 Q What is the seed -- adjustable seed
9 selector that the inventor is referring to?

10 A I believe the seed selector refers to
11 the mechanism that in some inventions will separate
12 out individual seeds from the tank so that they can
13 get sucked onto the sowing disc.

14 Q What is the seed ejector that's being
15 referred to?

16 A My understanding is that as the seeds
17 travel around the perimeter of the vacuum chamber
18 area, the pneumatic chamber area, they arrive at a
19 location where that vacuum is removed and there is
20 then an ejector component that the seeds fall into.
21 And the ejector may consist of something that also
22 removes them from that hole in the event that they
23 have gotten stuck there.

24 Q If the vacuum is placed on the
25 movable side, that would mean that the seed hopper

1 which dispenses seeds into the meter would be on
2 the fixed side. Is that correct?

3 A If the vacuum -- say that again. If
4 the vacuum is on?

5 Q If the vacuum is on the movable side.

6 A Okay.

7 Q That would mean that the seed hopper
8 and the seed pool would be on the fixed side.

9 Correct?

10 A That is correct. Or at least it
11 would mean that it's on the opposite side of the
12 sowing disc. Whatever you want to refer to it as.

13 Q And so if the vacuum is on the
14 movable side, then one of ordinary skill would know
15 they could avoid the problem of having to remove
16 the seed hopper in order to service the meter. Is
17 that correct?

18 A I think you're using various terms
19 which I, in principle, am in agreement with, but
20 since we haven't qualified the meaning of these
21 terms, they are qualified in my Declaration but we
22 haven't qualified them in this discussion, I'm not
23 sure, you know, what assumptions we're applying to
24 these terms.

25 So let me try to understand your

1 question better. You were describing a movable
2 side and a fixed side. My understanding of your
3 terminology is that you are differentiating two
4 sides of the sowing disc. My understanding is also
5 that you're using the term "movable" in the way
6 that I have understood it in my Declaration as
7 something that can be moved relative to the fixed
8 side but not necessarily removed.

9 And you are describing a pneumatic
10 vacuum chamber that is now, when the two parts are
11 closed together, present in the portion that is
12 referred to as the movable side, and then, because
13 of my previous answer and, of course, my
14 Declaration, the seeds are on the opposite side of
15 the sowing disc. That opposite side we then refer
16 to as the fixed side for reasons that are also
17 explained in my Declaration.

18 And because that's the side that has
19 the seeds and that's the side that receives the
20 seeds from the seed tank and the seed selector
21 mechanism and so forth, it's also the side that
22 contains the seed ejecting mechanism.

23 Then having made that clarification,
24 I believe the answer to your question is yes, one
25 would not need to remove those parts in order to

1 service the sowing disc.

2 Q And a person of ordinary skill in the
3 art would have understood that at the time of the
4 filing of the '121 patent. Correct?

5 A Yes.

6 Q In paragraph 39, you have a quotation
7 towards the bottom of the paragraph, I believe,
8 from the specification of the '121 patent that
9 says, (quote as read):

10 ...the whole of the movable
11 portion 12 complete with
12 thrust-bearing element 26 and
13 seal 24 lends itself
14 advantageously to the production
15 of a kit for retrofitting of
16 existing seed drills.

17 Do you see that?

18 A I do.

19 Q And so retrofitting existing seed
20 drills, the seed drill refers to the whole farm
21 implement. Correct?

22 A Correct.

23 Q And so this kit could be replacing an
24 entire meter, and it would still be retrofitting
25 the seed drill. Correct?

1 A This kit couldn't, but a kit could.

2 Q A kit could. Not this kit.

3 Understood.

4 A I mean, the use of the term "a kit
5 for retrofitting," could mean replacing something
6 other than just the seed distribution element.

7 MR. BROWN: All right. Looks like
8 we've been going just about an hour, now would be a
9 good time for a short break. Ten minutes okay with
10 everybody?

11 MR. CASEY: Okay for me, but you're
12 the star, Dr. Dankowicz. Is that good for you?

13 THE WITNESS: Ten minutes is plenty.
14 I'm actually happy to take a shorter break but ten
15 minutes is fine.

16 THE VIDEOGRAPHER: We are off the
17 record at 9:58 Central Time.

18 (Off the record.)

19 THE VIDEOGRAPHER: We are back on the
20 record. This is media unit number two. The time
21 is 10:08 Central.

22 Q (BY MR. BROWN) Okay. Dr. Dankowicz,
23 I have still on the screen your Declaration. In
24 paragraph 50, you are discussing the thrust-bearing
25 element. Do you see that?

1 A I do.

2 Q And in your Declaration you use as a
3 shorthand TBE for thrust-bearing element; correct?

4 A I think we used TBE for the claimed
5 thrust-bearing element.

6 Q Okay. Thank you for that
7 clarification. You say, (quote as read):

8 The claimed TBE is modified by
9 functional language, namely, "to
10 withstand at least some of the
11 axial load produced by the disc
12 on the seal."

13 Do you see that?

14 A Yes.

15 Q That is the only functional language
16 that you are relying on for the purpose of
17 understanding the claim limitation thrust-bearing
18 element. Is that correct?

19 A That is the purpose and function,
20 yes. And that is the only language of such sort.

21 Q Okay. So for instance, the claim
22 also describes the location of the thrust-bearing
23 element, but "location" is not the functional
24 language. Correct?

25 A That is my understanding.

1 Q And the claim language also requires
2 that it be rotatably mounted. "Rotatable mounting"
3 is not functional language; correct?

4 A That is a way in which the function
5 is achieved.

6 Q But it is not functional language
7 itself, rotatable mounting; correct?

8 A It's not the function of this device.
9 That is correct.

10 Q I've now put on the screen the
11 document that was given Maschio Exhibit Number
12 2015. Do you recognize Exhibit 2015?

13 A I do.

14 Q Why were you given this memorandum?

15 A Counsel Casey gave this memorandum to
16 me as a result of discussions we have had about the
17 claim limitations and the arguments put forward by
18 petition -- by the petitioner.

19 Q Do you know if this memorandum is
20 discussing any sort of change in law for the
21 application of Section 112(f) of the Patent Act?

22 A I -- you know, before I started
23 looking at the text in front of me, I would have
24 answered I do not recall. The last sentence of the
25 first paragraph says, (quote as read):

1 This memorandum does not present
2 a change in practice.

3 And I am going to then be informed by
4 seeing that sentence, and answer your question as
5 my understanding it does not present such a change
6 in practice.

7 Q Is it your understanding that the
8 Patent Trial and Appeal Board is bound in any way
9 by what this memo advises?

10 A I have no such knowledge.

11 Q Are you aware that in the District
12 Court litigation, Maschio Gaspardo never before
13 asserted that the thrust-bearing element was a
14 means plus function limitation under Section
15 112(f)?

16 A I have no direct knowledge of what
17 they may have claimed or not claimed. We have
18 talked about this with Counsel Casey as a potential
19 way of presenting an understanding of what the
20 limitations imply. That's my -- that's the extent
21 of my knowledge.

22 Q Have you ever read what Maschio
23 Gaspardo previously argued to the District Court
24 what the -- how that term should be interpreted?

25 A I recall reading many documents and I

1 recall there being discussions on the topic of the
2 thrust-bearing element. I cannot recall the exact
3 statement that were made by either Maschio or the
4 petitioner.

5 Q Why was there a change in the way
6 Maschio Gaspardo construed thrust-bearing element
7 between the District Court action and this one?

8 A I cannot answer the -- to the extent
9 of why Maschio may have made a change or decided to
10 pursue a certain path. I can only describe my
11 interactions with Counsel Casey which involved, at
12 great length, discussing the nature of the claimed
13 limitation, the function of such a thrust-bearing
14 element, the necessary structure, the extent to
15 which the language in the patent explained the
16 structure, either in the limitations or, as it
17 turned out in this case, in the specification.

18 And I assume that those discussions
19 led to a decision to present this as the best
20 response to the concerns that were raised by
21 petitioner.

22 Q I'm going to focus on a sentence
23 which is at the top of the second page of the
24 memorandum. You see where my cursor is, it begins
25 "Under this statutory construction"?

1 A I see your cursor, yes.

2 Q Okay. That sentence says, (quote as
3 read):

4 Under this statutory
5 construction, when an examiner
6 determines the broadest
7 reasonable interpretation of a
8 claim, a limitation that invokes
9 Section 112(f) must be limited to
10 the structure, material, or acts
11 described in the specification as
12 performing the entire claimed
13 function and equivalents of the
14 disclosed structure, material, or
15 acts.

16 Do you see that?

17 A I do see that.

18 Q In your analysis, were you following
19 that and applying the broadest reasonable
20 interpretation of the claim?

21 A My understanding of the sentence that
22 you read is that in order to invoke 112(f), one
23 cannot assume structure, material, or acts that are
24 not described in the specification or their
25 equivalents.

1 Q My question was, were you applying a
2 broadest reasonable interpretation standard when
3 you did your analysis of the attacks made by
4 petitioner against the claims of the '121 patent?

5 A I was applying my understanding as a
6 person of ordinary skills in the art. My
7 understanding, as informed by counsel, and as well
8 as informed by the book that was referred to
9 earlier as to what constitutes means plus function
10 limitations. I applied that understanding in
11 arriving at the conclusions that I stated in my
12 Declaration.

13 This paragraph, or this sentence that
14 you're referring to, at least in my reading,
15 imposes the notion of using the broadest reasonable
16 interpretation of a claim upon an examiner. I
17 don't know that I am an examiner. I am certainly
18 not an experienced patent examiner, nor am I an
19 attorney.

20 So what I did was to do precisely
21 what I shared; namely, to look at whether the
22 language in the limitation declared any type of
23 structure, which I found that it did not. Then to
24 look in the specification, as is instructed here,
25 to see whether a structure was described there,

1 which it was.

2 And using those two facts, I was able
3 to arrive at an interpretation of the claim, which
4 appeared very reasonable, and that's the extent to
5 which I can respond to your question.

6 Q I've put on the screen the '121
7 patent, which is Exhibit 1001. Do you see that?

8 A Yes.

9 Q And that's the -- that's the patent
10 that's the subject of this dispute. Correct?

11 A Correct.

12 Q I want to focus on some of the claim
13 language here. Is there a way I can blow this up?
14 Got it. I'm just going to make it hopefully big
15 enough so we can both read it. Can you see the
16 language of Claim 1 on the screen?

17 A Yes.

18 Q Okay. I just want to confirm with
19 you, when we're talking about the thrust-bearing
20 element, that's the language that appears in this
21 wherein clause where my cursor is. Correct?

22 A So this would be the clause that
23 says, (quote as read):

24 ...where the seed distribution
25 element further comprises a

1 thrust-bearing element of the
2 sowing disc.

3 That is correct.

4 Q Okay. And would you just -- you can
5 read this to yourself but just confirm for me that
6 the word "means" is not used in -- anywhere in this
7 limitation.

8 A I can confirm that I -- that the word
9 "means" is not used anywhere in this limitation.

10 Q Okay. Same question in Claim 10,
11 which is the other independent claim, and the
12 thrust-bearing element again appears in the final
13 clause.

14 Would you confirm for me that also in
15 Claim 10 the word "means" is not used in the
16 thrust-bearing element language?

17 A This final clause is the one that
18 starts, "Wherein the kit comprises," and I will
19 confirm that the word "means" does not appear
20 anywhere in this language.

21 Q Okay. Now, if we go back to the
22 USPTO memo, there is a section called Claim
23 Interpretation. Do you see that?

24 A I do.

25 Q And there's a sentence where my

1 cursor is that says, (quote as read):

2 By contrast, a claim limitation
3 that does not use the term
4 "means" or "step" triggers the
5 presumption that Section 112(f)
6 does not apply.

7 Do you see that?

8 A I do.

9 Q You did not apply such a presumption
10 in your analysis; correct? You did not -- you did
11 not presume that 112(f) does not apply?

12 A That's a double negation. Could you
13 restate that, please?

14 Q When performing your interpretation
15 of the -- of the thrust-bearing element, you did
16 not apply a presumption that, in the words of the
17 memo, "112(f) does not apply"?

18 A That is still a double negation.
19 You're saying I did not do something that something
20 does not apply. Could you restate that without the
21 double negation, please?

22 Q Oh, maybe I'll ask an open-ended
23 question.

24 A No, please -- please just restate.
25 You're asking me to say I did not do something

1 twice. I did not do something that does not. So
2 surely that can be stated without the double
3 negation. I find double negations a bit confusing
4 to respond to.

5 Q I'll try my best. I'm trying to
6 parrot the words. A --

7 A But the words do not refer to me not
8 doing something.

9 Q Well, they do, though. Let me read
10 the sentence for you.

11 A Mm-hmm.

12 Q It says, (quote as read):
13 By contrast, a claim limitation
14 that does not use the term
15 "means" or "step" triggers the
16 presumption that Section 112(f)
17 does not apply.

18 A Right.

19 Q So I'm talking about that
20 presumption, "112" --

21 A Correct.

22 Q -- "(f) does not apply." Do you
23 understand that?

24 A Right. I do understand that, but
25 you're applying the word "did not" to me, and that

1 sentence does not refer to a negation applied to
2 the person examining the remainder of the sentence.

3 So I'm simply asking that you not use
4 the word "did not" at the beginning of your
5 question. I'm happy to respond to the question
6 about presumption does not apply.

7 Q Okay. You, in your analysis, made no
8 presumption that 112(f) does not apply?

9 A That is still a double negation. I
10 will try to help you here. I did, in fact, in my
11 analysis, recognize the fact that the term "means"
12 did not appear in the language. This did in fact
13 trigger a further analysis in my Declaration in
14 order to establish that 112(f) does apply.

15 Q Where in your Declaration do you say
16 that you presumed that 112(f) does not apply?

17 A I don't think the sentence appears
18 verbatim the way you just stated it, but I do
19 believe there is language a little bit right there,
20 in fact, in 50, that talks about a generic element
21 -- generic term, sorry, "element," and I think
22 somewhere else, maybe not in this Declaration but
23 in other wording, the word nons words appears.
24 So I'm -- my understanding is that the term
25 "element" here is a nons word.

1 If you go back to the PTO memorandum
2 following the sentence you asked me to comment on,
3 there is a language explaining how one might, after
4 having been triggered, to question whether 112(f)
5 indeed does apply, nevertheless conclude that it
6 does because there are nons words such as "element"
7 taking the same function as the word "means" in the
8 sentence.

9 Q In describing your analysis in your
10 Declaration, you do not note that there is a
11 presumption against 112(f). Correct?

12 A I can't recall doing that. That is
13 correct. That is -- what is correct is I can't
14 recall doing it.

15 Q And you said you -- how did you
16 consider the fact that there was a presumption
17 against 112(f) as you performed your analysis?

18 MR. CASEY: Objection, asked and
19 answered. But you can go ahead.

20 A So again, going back to the PTO
21 memorandum, which, if you don't mind, you could
22 share back on the screen? Following the sentence
23 that indicates that a presumption of
24 inapplicability is triggered by the absence of the
25 word "means," it says that in then judging whether

1 this applies or not, one should look at the
2 language of the claim to see if the presumption
3 that it does not apply has been overcome.

4 This text goes on to give examples of
5 when such a presumption could be overcome and
6 specifically the notion that it could be a
7 functional language along with a generic
8 placeholder term instead of "means."

9 And so in the Declaration we use
10 precisely that language. That formulation of
11 functional language and generic placeholder term as
12 a way to indicate that we are addressing this
13 triggered presumption due to the absence of the
14 word "means." And when I say "we," I mean myself,
15 of course, with the discussions that I had with
16 Counsel Casey.

17 Q (BY MR. BROWN) I've scrolled to
18 paragraph 43 of your Declaration. Do you see that?

19 A Yes.

20 Q And in this part of your Declaration,
21 you are discussing what the '121 patent discloses
22 to be a thrust-bearing element. Is that correct?

23 A This is a quote from the patent, and
24 the paragraph 43 describes how this thrust-bearing
25 element solves problems, and that the specification

1 illustrates the thrust-bearing element in the
2 figure and in the text that's quoted here, which
3 includes a structure that describes the
4 thrust-bearing element.

5 Q And the indented quote comes from the
6 specification of the '121 patent. Correct?

7 A That is my recollection.

8 Q So I have on the screen from the '121
9 patent Figures 1 and 2. Do you see that?

10 A Yes, I see portions of Figure 1.
11 Some things are cut off. I do see Figure 2.

12 Q Okay. Let me see if I can just make
13 it a little smaller. Now can you see all of
14 Figure 1?

15 A I believe so.

16 Q Okay. Now, the -- as quoted by you
17 in your Declaration, the '121 says, (quote as
18 read):

19 In order to limit the wear on the
20 seal resulting from sliding
21 against the surface of the disc
22 16, a thrust-bearing element
23 indicated as a whole by 26 is
24 mounted on the movable portion.

25 Did I read that correctly?

1 A You did.

2 Q And if we look at Figure 2, Figure 2
3 shows 26. Is that correct?

4 A Indeed.

5 Q And so the specification says that
6 the thrust-bearing element is indicated by the
7 structures that are bracketed by 26. Correct?

8 A Sorry, could you restate that? Or --
9 yeah. Say it again, please?

10 MR. BROWN: Could you read the
11 question back, please?

12 THE REPORTER: "And so the
13 specification says that the thrust-bearing element
14 is indicated by the structures that are bracketed
15 by 26. Correct?"

16 A My understanding from the
17 specification is that it refers to the
18 thrust-bearing element (26) and then makes
19 reference to Figure 2.

20 Q (BY MR. BROWN) And so every -- the
21 spec says that everything that is bracketed by 26
22 is the part of the thrust-bearing element; correct?

23 A I don't believe the text says
24 everything that's bracketed by 26 is part of the
25 thrust-bearing element. I do believe that the

1 number 26, you know, there's a sentence there that
2 says "a thrust-bearing element indicated as a whole
3 by 26," but I don't see anywhere where it says that
4 everything in 26 must be part of the thrust-bearing
5 element.

6 Q So indicated as a whole by 26 doesn't
7 to you mean that the structures that have the
8 bracket 26 are the thrust-bearing element?

9 A It could mean that. But since I have
10 read the remainder of the specification, I have
11 been informed also by this -- by the limitations
12 that parts of what is enclosed here by 26 are
13 optional elements.

14 Therefore, I conclude from the
15 totality of the text, both in the specification and
16 the limitations, that not all parts of 26 are
17 required in order for 26 to be a thrust-bearing
18 element.

19 Q Okay. We'll come to the other pieces
20 that you're talking about in a moment. This
21 passage in the spec that you've quoted says that
22 the structures indicated by 26 are the
23 thrust-bearing element. Would you agree with that?

24 A I mean I'm only able to agree with
25 exact language of the specification; right? So if

1 we're literally just restating the specification,
2 then I'm in full agreement with the fact that the
3 specification says (quote as read):

4 ...a thrust-bearing element
5 indicated as a whole by 26 is
6 mounted on the movable portion.

7 I will agree with that entirely.

8 Q And so surely one of skill is
9 supposed to understand, having read that, that the
10 bracketed structures are the thrust-bearing
11 element; right?

12 A It is indeed supposed to conclude
13 something as being able to read, you know, the text
14 is written, but, you know, being one of ordinary
15 skills, I also know to read more text and to be
16 informed by the totality of what I'm reading and
17 not just by a single sentence since I might
18 misunderstand it.

19 And so my understanding is that 26
20 refers to a -- an embodiment of the thrust-bearing
21 element, but that there are simpler embodiments of
22 the thrust-bearing elements that exclude some of
23 the optional parts that are shown in Figure 2.

24 Q Okay. Now, the next sentence says a
25 thrust-bearing -- I'm sorry. (Quote as read):

1 The thrust-bearing element 26
2 comprises a shaft 27 --

3 Do you see that?

4 A Indeed.

5 Q And if we look back at Figure 2, the
6 shaft 27 is depicted as being part of the bracketed
7 thrust-bearing element 26. Correct?

8 A Yes.

9 Q Now, the sentence that you quoted
10 continues, (quote as read):

11 -- rotatably mounted by means of
12 bearings 28 in a seat 29 of the
13 movable portion 12.

14 Do you see that?

15 A I do.

16 Q So isn't it accurate to say that
17 "comprises" modifies the word "shaft," which is
18 part of the disclosed thrust-bearing element, and
19 the bearings in the seat 29 are just being
20 described as to how that particular shaft is
21 mounted in the device?

22 A You used a term "modifies" as a sort
23 of grammatical term here. My understanding is that
24 the word "comprises" modifies "thrust-bearing
25 element."

1 Q Yes. Thrust-bearing element
2 comprises the shaft 27?

3 A Yes. So in other words, the word
4 "comprises" is used to describe the thrust-bearing
5 element. And what follows the word "comprises" are
6 the things that the thrust-bearing element
7 comprises. And that's the entirety of what
8 follows. That's my understanding.

9 Q And what do you base that
10 understanding on?

11 A There are no commas, no other periods
12 to suggest that we're done. That, you know, the
13 modification of the word "thrust-bearing element"
14 has somehow concluded prior to reaching the end of
15 that sentence.

16 Q Would you agree with me that neither
17 the bearings 28 nor the seat 29 are shown to be
18 part of the thrust-bearing element 26 in Figure 2?

19 A I would agree with that. Well, at
20 the very least, I cannot see them. So I would
21 agree with it. I can see them in Figure 1, of
22 course.

23 Q But the numeral 26 doesn't appear
24 anywhere in Figure 1, does it?

25 A The 27 does. But you're correct, 26

1 does not.

2 Q Now, what is your basis for saying
3 that of the structures shown in 26, the only
4 structure that forms part of the thrust-bearing
5 element is the shaft 27?

6 MR. CASEY: Objection,
7 mischaracterizes testimony.

8 THE WITNESS: Do I still answer?

9 MR. CASEY: Yes.

10 A Um, let's see. So your question,
11 could you kindly restate it?

12 Q (BY MR. BROWN) Is it your testimony
13 that the disclosed structure of the thrust-bearing
14 element is comprised solely of the shaft 27, the
15 bearings 28, and the seat 29?

16 A It is my testimony that the
17 thrust-bearing element is a term that describes a
18 function that's achieved by a mechanism onto the
19 sowing disc by bearing thrust, that it has a
20 structure, and that that structure is described in
21 the specification as consisting of a shaft, which
22 is 27, that in order to achieve the function is
23 supported rotatably.

24 The way to achieve it being supported
25 rotatably is to include the ball bearings 28, or

1 the bearings 28, which have to be residing in a
2 seat 29.

3 In the absence of any one of these
4 three things, 27, 28, or 29, the thrust-bearing
5 element, as understood as a function achieved by a
6 structure, would not function.

7 For that reason, it is my testimony
8 that 27, 28, and 29 are the structural components
9 required in order to have a thrust-bearing element
10 as disclosed by the inventor.

11 Q So just so we're on same page, in
12 order to interpret a means plus function
13 limitation, which you have found the thrust-bearing
14 element to be, one needs to identify the claimed
15 function and then the structure disclosed in the
16 specification to perform that function. Do we
17 agree with that?

18 A Yes.

19 Q And that second piece, your
20 identification of the structure disclosed to
21 perform the claim function, is limited to the shaft
22 27, the bearings 28, and the seat 29. Is that
23 correct?

24 A Yes.

25 Q Okay. What is your basis for

1 excluding the elements -- element 30?

2 A So element 30 is a geometric shape of
3 a shaft by attaching, welding, however you attach
4 30 to 27, you're simply changing the geometry of a
5 shaft. A shaft need not be something that is just
6 a narrow cylinder. It can have geometry. And
7 that's what I'm seeing with 30.

8 So it's just a way of describing the
9 geometry of the shaft in the text. In the
10 specification.

11 Q Does the specification refer to 30 as
12 a particular type of structure?

13 A I believe it refers to it as a
14 flanging.

15 Q Okay. So you don't include the
16 flanging 30 as part of the disclosed structure. Is
17 that correct?

18 A I'm sorry, I don't quite understand
19 what you mean by that. It is, of course, disclosed
20 in the specification. However, I don't include it
21 in the requirement for the structure in order to
22 apply the means plus function interpretation.

23 Q Yeah. So you do not include the
24 flange 30 as part of the structure disclosed for
25 performing the claim function.

1 A As required to perform the claim
2 function.

3 Q And how about 35? What is 35?

4 A 35 is --

5 Q Actually, what is 32?

6 A Yes. So 32, as I recall, and I'd be
7 happy to -- to have that confirmed by going back to
8 the patent text, but 32, as I recall, is a -- an
9 optional component that can be introduced in order
10 for the drive shaft, which is extending out from
11 the fixed member, which I think is called the
12 transmission shaft, to engage with 32. That's why
13 the 35 has this toothed structure, or the
14 octagonal, orthogonal structure, much like the
15 drive shaft tip does in Figure 1. It's an optional
16 component that would allow the drive shaft to
17 intentionally rotate this thrust-bearing element.

18 Q So without some form of engaging with
19 the drive shaft, the element wouldn't rotate?

20 A Well, the -- my understanding is that
21 the element is in contact with the sowing disc.
22 And it is through that contact, which is a contact
23 that is, in fact, exacerbated by the presence of
24 vacuum, that the thrust-bearing element and the
25 sowing disc are rotating together. And allowing

1 for the drive shaft to connect, you know, makes
2 that even more possible. Or more likely.

3 Q What is 31?

4 A 31. 31 is this plate that is pressed
5 against the sowing disc, in this particular
6 embodiment that's shown in Figure 2.

7 Q And it's actually the plate that
8 contacts the sowing disc. Correct?

9 A Indeed.

10 Q So without that plate, the disc would
11 -- well, the plate in this disclosed embodiment is
12 the actual thing that is absorbing axial thrust
13 from the disc, isn't it?

14 A No, I disagree with that
15 characterization.

16 Q What's wrong with that
17 characterization?

18 A Well, the -- it's true that the
19 contact between the sowing disc and the
20 thrust-bearing element occurs on the surface of 31.
21 This is true. There is a contact force between the
22 sowing disc and 31. 31 then applies a force onto
23 the other members of the structure, in this case
24 presumably in this particular embodiment the flange
25 30. In fact, there are what appears to be an

1 attachment mechanism between 30 and 31, which also
2 carries load.

3 So the load is transmitted from the
4 sowing disc, which applies the load onto 31, then
5 transmitted through the bolts and other contacts to
6 the flange, which in turn transmits the load onto
7 the shaft, which in turn transmits the load onto
8 the ball bearings.

9 And one might therefore argue that
10 it's the ball bearings that are carrying the thrust
11 and all of these mechanisms in between are simply
12 transmitting that load to the final element which
13 are the bearings that are pressed against the seat.
14 And so in effect the seat is carrying that load.

15 So mechanically speaking, one needs
16 to understand that there's an entire chain here of
17 action and reaction.

18 Q And if you excluded everything but
19 27, 28, and 29, the structure would not function to
20 relieve the axial force on the seal. Correct?

21 A I disagree with that statement.

22 Q What's wrong with that statement?

23 A 27 is described as a shaft, as I
24 explained previously. To my understanding, it does
25 not limit me to a particular shape of that shaft.

1 The shaft could have a cylindrical end which sits
2 between the bearings and the seat, but it could
3 then have a additional geometry, flanging, you
4 know, some other sort of shape that spreads out the
5 contact area and reaches all the way to the sowing
6 disc.

7 And so from that perspective, I'm not
8 making a distinction between shaft here and
9 something that has more geometry. So to that end,
10 I'm comfortable suggesting that even with 27 alone,
11 one would be able to, if one had additional
12 flanging or additional sort of shaping, which I
13 include under the terminology shaft, to my -- to
14 the best of my ability, one would be able to carry
15 load.

16 Q So you would have to have structures
17 akin to the shapes disclosed for 30 and 31, at
18 least, in order to perform the function, wouldn't
19 you?

20 A But I am including geometry of the
21 shaft, and I could imagine creating a shaft through
22 the manufacturing process that has geometry that
23 doesn't require me to add any additional
24 components.

25 I will -- you know, as you're asking

1 me this question and as I'm thinking it over, um,
2 maybe it would be a good idea to see whether I am
3 correctly interpreting the word "shaft," but my
4 understanding of "shaft" does not limit it to
5 something that is purely cylindrical.

6 Q Yes, but the statute calls for you to
7 look to see what structure is actually disclosed by
8 the patentee; correct?

9 A Correct. Which is a shaft. And
10 then, of course, the bearings.

11 Q Which the shaft and additional
12 elements to create the shapes to receive the load;
13 correct?

14 A But again, the -- if you kindly go
15 back to the patent text, to the specification --
16 no, I think in this -- in this document, in the
17 specification, if you just go down to where this
18 text first appears that we were just discussing, it
19 says in the sentence following the one we were just
20 discussing, (quote as read):

21 The shaft has flanging.

22 It doesn't say flanging is attached
23 to the shaft. It doesn't say additional members 30
24 are attached to the shaft to create a new
25 mechanism. It just says the shaft has flanging.

1 To me that means that the word "shaft" includes
2 geometry. The geometry is here described as
3 flanging. So this could be, for all practical
4 purposes, one solid piece rather than multiple
5 components.

6 Q But that's not what the patentee
7 disclosed in the specification. Correct? He
8 disclosed multiple components.

9 A I don't see that. I see the term
10 "flanging" as being a property of the shaft. And
11 the number 30 as referring to that flanging.

12 Q I guess my question is doesn't, in
13 Figure 2, the patent disclose multiple components?

14 A I see a component that is the
15 leftmost element. I see a middle element, and I
16 see a rightmost element. So, and if one wishes to
17 use the term "component," I see three components in
18 Figure 2. I think you're asking me to
19 differentiate between the cylindrical portion, the
20 narrow cylindrical portion, which has the number 27
21 added to it, or line drawn towards it, and the
22 wider circular element, or portion, that has the
23 number 30 drawn to it. And you're asking me to
24 suggest that those are two separate components.

25 And looking at the image, one can

1 certainly reasonably assume that 30 was
2 manufactured separately from the cylindrical, from
3 the narrow cylindrical component, and that they
4 were then attached to one another to form one solid
5 component. One welded or rigid element. Not
6 something that is, you know, attached and removed
7 separately, but in fact they look like to me as
8 being one -- one component with two portions. This
9 narrow cylindrical portion, and the large circular
10 portion.

11 In the text it explains that the
12 large circular portion is a property of 27. So I
13 am therefore drawn to conclude that 27 refers to
14 this entire component rather than just the narrow
15 cylindrical part because of the way the text
16 describes this.

17 Q As disclose --

18 (Simultaneous speaking - inaudible.)

19 Q -- as disclosed by the patentee, the
20 plate that actually contacts the seed disc is shown
21 as a separate component?

22 A That is correct. 31. In this
23 particular embodiment, that is correct.

24 Q Now, you mentioned that some of the
25 components would not be part of the thrust-bearing

1 element because of the dependent claims. Do you
2 recall that?

3 A In the Declaration I make that
4 statement, yes. I didn't make that statement today
5 but in the Declaration I did. And today I simply
6 referred to them as optional.

7 Q Okay. Explain to me what your
8 understanding is of how the dependent claims are
9 informing your interpretation of what the
10 thrust-bearing element is.

11 A Let's go ahead and, if you don't
12 mind, scroll to the dependent claims, 2, 3, 4, and
13 so on.

14 Q And if you want me to blow this up,
15 just let me know.

16 A Thank you. So in dependent Claim 3,
17 it is in addition to what has been claimed already
18 and disclosed, if you wish, in Claim 1, there is
19 the added statement that the thrust-bearing element
20 could, in addition to what has been disclosed,
21 comprise a thrust-bearing plate.

22 It is my understanding that the
23 thrust-bearing plate in this case refers to element
24 31, the component 31, and my understanding from
25 that -- of that is guided by the specification,

1 which, if you scroll up a little bit, makes
2 reference precisely to the thrust-bearing plate 31.

3 So because that appears as its own
4 claim dependent on Claim 1, I am assuming that the
5 terminology "thrust-bearing element" and the
6 structure that it relies on need not include the
7 thrust-bearing element in order to satisfy
8 limitation 1.

9 Q Okay.

10 A Similarly --

11 Q And there's --

12 A If I may continue, because this was
13 one of the questions, there was another one here,
14 in 4 it refers to the drive element and the
15 coupling between the two. That is also discussed
16 as a -- therefore, as an optional element. This is
17 element 32 with a polygonal profile 35 in the
18 specification on the left.

19 This is in addition to the structure
20 that must be understood in order to have a
21 thrust-bearing element for Claim 1. Therefore,
22 it's optional and can be added to make a more --
23 you know, a different way of achieving the desired
24 function, or an expanded way of achieving the
25 desired function.

1 There is also mentioned in dependent
2 Claim 5 of a particular way in which this drive
3 element engages with the rest of the mechanism as
4 being self-centering. This is something that, you
5 know, need not be true of a drive element and the
6 particular drive element that's shown in Figure 2
7 has this polygonal profile and it -- and chamfers
8 on the drive shaft and those embodiments of the way
9 one might realize this mechanism achieve this new
10 way of having engagement as disclosed in Claim 5,
11 which is only optional relative to independent
12 Claim 1.

13 For that reason, referring back to
14 Figure 2, I am concluding that neither 31 nor 32
15 are required to understand the limitation of a
16 thrust-bearing element as described in Claim 1.

17 Q Is there anything in the claim
18 language itself, or Claim 1, that establishes a
19 requirement that the support for thrust-bearing
20 element must be in the movable portion?

21 A The only language that you and I both
22 can see, of course, in Claim 1 is the term "is
23 supported rotatably in the movable portion."

24 Q What in that language requires that
25 the support be in the movable portion as opposed to

1 the thrust-bearing element?

2 A Well, I guess we're -- we're trying
3 to parse English, so I see that the sentence begins
4 with describing the thrust-bearing element. The
5 word "is" here is going to be followed by an
6 adjective phrase, is how I understand it. An
7 adjectival or adjective phrase that describes the
8 thrust-bearing element. So everything that follows
9 prior to the word -- and even including the word
10 "in order to withstand," all of the stuff that
11 follows, is an adjective phrase that describes
12 thrust-bearing element.

13 That adjective phrase appears to be
14 broken into parts. There is a part that starts
15 with "supported" and ends with "portion" because it
16 has the prepositional phrase following the word
17 "rotatably." Then there is a functional sort of
18 conjunction, "in order to," which then obviously
19 subsequently describes the function.

20 So if we just look at the portion
21 between the verb "is" and the "in" preposition
22 right before "order," "supported rotatably in the
23 movable portion" does not suggest to me that the
24 thrust-bearing element is in the movable portion,
25 but it suggests to me that the rotatable support is

1 in the movable portion. Simply by combining words
2 that are close to each other and -- and sort of
3 understanding their -- their belonging.

4 So as far as I'm concerned, this
5 phrase describes the support being in the movable
6 portion.

7 Q And so you said "supported rotatably"
8 is adjectival; correct?

9 A I said -- I'm suggesting that the
10 entire "supported rotatably in the movable portion"
11 is adjectival.

12 Q Right. And so the noun is the
13 thrust-bearing element; correct?

14 A That is correct.

15 Q And so --

16 A Of course, "movable portion" is also
17 a noun, but it's part of this adjectival phrase.

18 Q And so nothing in that that says that
19 the support must be in the movable portion. It
20 says the thrust-bearing element must be in the
21 movable portion, if we take that phrase as
22 adjectival; correct?

23 A Well, that's -- I disagree. I
24 believe that the sentence says that the way in
25 which the thrust-bearing element is able to achieve

1 its function is by being "supported rotatably in
2 the movable portion," not by being in the movable
3 portion; although, I believe it says that
4 elsewhere, simply by the fact that the structure is
5 all located in the movable portion as described in
6 our previous discussion, but here is talking about
7 the way in which the function is achieved and the
8 way in which the function is achieved is by being
9 supported rotatably in the movable portion.

10 Q In paragraph 55 of your Declaration,
11 you are discussing the adjective and hyphenated
12 term "thrust-bearing." Do you see that?

13 A Yes.

14 Q And you state at the bottom of page
15 24, (quote as read):

16 The word "bearing" also refers to
17 the bearings 28 that form part of
18 the structure of the
19 thrust-bearing element and that
20 reduce the friction of motion
21 between the shaft and the seat.

22 Do you see that?

23 A I do.

24 Q So you're saying that the word
25 "bearing" in the claim phrase "thrust-bearing

1 element" connotes the structure of a bearing. The
2 known structure of a bearing.

3 A Sorry, is that a question?

4 Q Yes.

5 A Could you state it as a question?

6 Q Isn't it correct that you are saying
7 that the word "bearing" in the claim phrase
8 "thrust-bearing element" connotes a known structure
9 of a bearing?

10 A Um, not the way you just stated it.
11 I don't believe that's correct.

12 Q Well, you say, (quote as read):
13 The word "bearing" also refers to
14 the bearings 28 that form part of
15 the structure of the TBE and that
16 reduce the friction of motion
17 between the shaft and the seat.

18 Right?

19 A That is correct. Yes.

20 Q So you're -- when you say "bearing"
21 there in quotes, you're referring to the bearing as
22 used in the claim phrase "thrust-bearing element."
23 Correct?

24 A That is correct.

25 Q So you're saying that the

1 thrust-bearing element is referring to the
2 bearings.

3 A No, I'm saying precisely what I'm
4 saying. You are paraphrasing me and asking me to
5 reformulate what I've already said, but I'm saying
6 precisely what I'm saying here, which I'm happy to,
7 if it's not clear, I'm certainly happy to explain
8 it, but I'm not saying it the way you are stating
9 it.

10 Q Well, my question is, aren't you
11 saying that the "bearing" in "thrust-bearing
12 element" refers to bearings 28, as disclosed in the
13 specification?

14 A I think the sentence that we are
15 analyzing quite explicitly says "also refers to."

16 Q And so the use of "thrust-bearing
17 element," the "bearing" in that phrase connotes
18 structure to one of ordinary skill. Correct?

19 A No, I believe it confers an
20 understanding of a way in which thrust is carried.
21 A way in which thrust is borne. So the sentence
22 starts with suggesting that the word "bear" can be
23 a verb, and to bear thrust, "thrust" being a noun
24 in this case, the word "bear" can be a verb. And
25 that I think is how one, you know, could simply

1 interpret the word if one didn't wish to analyze it
2 to the depths that we are doing.

3 But I'm also pointing out that the
4 word "bearing" can be a noun. Not just a verb.
5 Not just a gerund form of a verb, but in fact a
6 noun. And there are indeed bearings that form part
7 of the structure. Those bearings are 28, which in
8 Figure 2 -- or sorry, Figure 1, appear to be some
9 type of ball bearings.

10 And really, the most important part
11 of the presence of bearings is then explained in
12 the remainder of the sentence, that as there is
13 motion between the shaft and the seat, there is a
14 reduction in friction.

15 So if you look at bearings,
16 thrust-bearings, radial bearings, for example, this
17 is precisely their function. They achieve -- they
18 bear thrust so they do the verb part, but they also
19 have a structural component that reduces friction
20 of motion between two moving parts.

21 And I'm pointing out in this sentence
22 that the term "thrust-bearing element" encompasses
23 those functional ideas of being able to bear
24 thrust, as well as allow motion, without there
25 being a significant amount of friction.

1 Q And so as used in the claim term
2 "thrust-bearing element," one of ordinary skill
3 would understand that that's naming a
4 classification of structures.

5 A I disagree for two reasons. For the
6 first reason is the one I simply -- I just
7 explained, which is that "thrust-bearing" to me
8 describes a component or a system or a device that
9 -- or an element in this case, that seeks to bear
10 thrust while allowing relative motion with a
11 reduction of friction. That's the first reason I
12 disagree with your statement.

13 The second reason I disagree with
14 your statement is that it appears in contradiction,
15 but maybe I'm wrong, to what petitioner has claimed
16 and what the expert of petitioner claimed, to my
17 recollection anyway, in their Declaration.

18 Q Sorry, I don't understand that last
19 point. Are you saying you agree with -- with the
20 expert, petitioner's expert?

21 A I'm saying that what you claimed,
22 what you said, asked me to agree to, would be --
23 you asked me to say a person of ordinary skills in
24 the art would draw a certain conclusion, and my
25 recollection of what the expert did for the

1 petitioner was to not draw that conclusion. And
2 since I have no qualms with the idea that the
3 expert for petitioner is a person of ordinary
4 skills in the art, my answer to your question must
5 therefore be no.

6 Q So my question is, does the use of
7 thrust-bearing element connote a classification of
8 structure that include bearings to one of ordinary
9 skill?

10 A And I believe I said no for two
11 reasons. One was the reason that I just shared
12 here, and the second reason was because in -- in
13 the documents that I have read that I believe
14 included the Declaration of the -- of the expert
15 and, you know, various other documents filed by
16 petitioner, it was suggested that thrust-bearing
17 need not describe any type of structure as long as
18 thrust is borne. So for those two reasons, I
19 disagree with your statement.

20 Q Does the presence of the hyphen in
21 the phrase make the term different if the same
22 words were used without a hyphen?

23 A It's a wonderful question. As I
24 state in the response here in article 55, one can,
25 of course, use it without hyphen as a simple noun

1 structure. A "thrust-bearing" as a noun, without
2 hyphen.

3 In this particular patent, to my
4 recollection, the occurrence of "thrust-bearing
5 element" is always accompanied by a hyphen, but
6 there are other examples that I don't think I
7 mentioned here but I've certainly seen people use
8 terms like "thrust-bearing" followed by something
9 without a hyphen, and definitely I've seen terms
10 like "radial-bearing" without a hyphen.

11 And I've seen things like
12 "thrust-bearing" with a hyphen and "radial-bearing"
13 without a hyphen in the same document, as is
14 described in paragraph 56, suggesting that the
15 hyphenation is not really differentiating the
16 intent of the word, whether it's present or not
17 present.

18 Q Well, if we look at your paragraph
19 56, I think that's what you were just referring to
20 as another document where you've seen these types
21 uses; is that correct?

22 A Yes, it's a document that I included
23 in my Declaration that uses these similar types
24 terms in some cases with hyphen and in other cases
25 without.

1 Q Okay. The second sentence of
2 paragraph 56 says, (quote as read):

3 As used in the '708 patent, the
4 terms "thrust-bearing apparatus"
5 and "thrust-bearing assembly"
6 connote structures that achieve
7 support against an axial load
8 while being supported in a way
9 that reduces friction between
10 stationary and rotating machine
11 parts, consistent with the means
12 plus function interpretation of
13 TBE.

14 Do you see that?

15 A I do.

16 Q So this '708 patent is informing you
17 that the use of "thrust-bearing" connotes a type of
18 structure to one of skill in the art. Is that
19 accurate?

20 A It's my understanding that it -- that
21 the word "apparatus" refers to there being a
22 structure, that the word "assembly" refers to there
23 being a structure, and that "thrust-bearing" in
24 this case, of course including the word "bearing"
25 to describe a portion of what that -- how that

1 apparatus works, that the "thrust-bearing" then
2 describes the function that is achieved by that
3 apparatus.

4 So yes. You know, you asked me
5 before what a person of ordinary skills in the art
6 would say. If you ask me whether I believe that
7 the term "thrust-bearing element" connotes
8 something that includes a structure, I would, of
9 course, have said yes, because I believe that the
10 term describes a means plus function. There has to
11 be a structure in order to achieve this function,
12 in this case, supporting against an axial load.

13 If you keep reading, it says, (quote
14 as read):

15 ...while being supported in a way
16 that reduces friction between
17 stationary and rotating machine
18 parts.

19 This is part of the way in which that
20 support is achieved and that way is realized
21 through the structure, whether it's an apparatus or
22 an assembly or an element, and so in that sense I
23 consider this all to be very consistent with what I
24 just said.

25 Reducing friction between stationary

1 and rotating machine parts is typically achieved,
2 for example, using ball bearings. There is another
3 way in which the term "bearing" appears here to
4 describe something that does two things: carry
5 load, and allow relative motion.

6 MR. BROWN: Okay. We've been going
7 about an hour. Why don't we take a short break.

8 THE VIDEOGRAPHER: We are off the
9 record at 11:08 Central Time.

10 (Off the record.)

11 THE VIDEOGRAPHER: And we are back on
12 the record. This is media unit number three. The
13 time is 11:18 Central.

14 Q (BY MR. BROWN) Okay, Dr. Dankowicz,
15 I have put on the screen Exhibit 1006, which is the
16 VenHuizen patent. You're familiar with this;
17 correct?

18 A Yes, I am.

19 Q You have opined that the VenHuizen
20 patent does not anticipate Claim 1 or Claim 10 of
21 the '121 patent; is that correct?

22 A It is.

23 Q And the reason that you give that
24 VenHuizen does not anticipate is because it lacks a
25 thrust-bearing element in your opinion. Is that

1 correct?

2 A It lacks the claimed thrust-bearing
3 element.

4 Q And the reason that it lacks the
5 claimed thrust-bearing element is because, in your
6 interpretation, the thrust-bearing element is a
7 means plus function limitation, and VenHuizen lacks
8 the structure disclosed in the '121 patent for
9 performing that function?

10 A I believe that's correct.

11 Q So because, in your interpretation,
12 the thrust-bearing element is a means plus function
13 limitation, certain structure is required to meet
14 the limitation; correct?

15 A Yes, that is correct.

16 Q And VenHuizen lacks that structure?

17 A As described in 121, yes.

18 Q Now, if the Board adopts its present
19 interpretation of thrust-bearing element, you agree
20 that VenHuizen anticipates?

21 A Would you remind me of what the
22 Board's interpretation of thrust-bearing element
23 is?

24 Q Let's see if we can find it in your
25 Declaration.

1 Okay, so I'm going to read to you
2 what the Board said. (Quote as read):

3 Accordingly, on this preliminary
4 record, we agree with
5 Petitioner's construction of
6 thrust-bearing element as an
7 element that provides support
8 against an axial force.

9 With that understanding, do you agree
10 that if the Board maintains that interpretation,
11 then VenHuizen anticipates?

12 A Yes. If the need -- if the
13 requirement is that there be something that carries
14 a load from the sowing disc that otherwise would be
15 applied to the -- to the seal, then VenHuizen
16 includes a component that carries such load. I
17 believe if you scroll down in my Declaration, you
18 will find a paragraph where I refer to this
19 interpretation as being overly broad.

20 Q I've put up on the screen -- I've put
21 VenHuizen back up on the screen. Can you see
22 Figure 6?

23 A Yes. It's a little cut off. If you
24 shrunk it, I could see the entirety of Figure 6.

25 Q Can you see it now?

1 A I believe I can, yes.

2 Q Okay. So Figure 6 shows that there
3 is a seed disc 60. Correct?

4 A Correct.

5 Q And that seed disc is mounted on a
6 hub 56?

7 A That is how I recall it being
8 described, yes.

9 Q All right. And then there is
10 disclosed a shaft 55. Correct?

11 A Indeed.

12 Q And this shaft is going to be mounted
13 in a seat where there are bearings, where these X's
14 are indicated in the figure; is that correct?

15 A That is correct.

16 Q And those bearings would permit the
17 unrestricted rotation of the shaft relative to the
18 seat?

19 A I don't recall whether, and, in fact,
20 I'm sort of saying that in a very positive way, I
21 can't recall, not simply because of forgetfulness,
22 but I literally don't think that there is mention
23 of bearings or a seat in the VenHuizen disclosure.

24 Q But that's your understanding of what
25 would be here where these X's are; correct?

1 A That understanding is partially
2 informed by what seems reasonable and partially
3 informed by the deposition of the expert of
4 Petitioner which spoke to the presence of these X's
5 as being a generic way of describing the presence
6 of bearings. Which makes perfect sense to me.

7 Q And so bearings there would allow the
8 rotation of the shaft relative to the seat.
9 Correct?

10 A That is correct, yes. If the seat --
11 if by seat, you mean the hatched area that is sort
12 of the bottom extension of 50. The number 50
13 appears higher up in the image.

14 Q Okay, I see this, yes. That's what I
15 mean, yes.

16 A Yeah. Mm-hmm.

17 Q VenHuizen also discloses there is a
18 handle 58?

19 A Correct.

20 Q And that handle is rotatably mounted?

21 A Um, the handle is able to rotate some
22 distance, I don't know how much, relative to 56.
23 Or -- yeah, 56. The hub. Right:

24 Q Right. So it will rotate some
25 distance in order to hold the seed disc onto the

1 hub?

2 A Onto the -- so I'm not sure I'm using
3 the terminology correctly anymore. So 56 is the
4 hatched area that's the hub that the disc is
5 pressed against; correct?

6 Q Yes.

7 A I don't know what that cylinder is
8 called. Right below your marker there is a
9 cylinder that, extends out from 55. Maybe that's
10 also called 55, in which case the 58 is able to
11 rotate relative to 55, if that's the correct
12 number. And yes, it -- the ability to rotate it is
13 what allows one to release the disc from being
14 pressed against the hub.

15 Or do the opposite, namely, to fix it
16 against the hub. Hold on a second, my ear phones
17 just fell out. So give me a second. Yes, I'm
18 back.

19 Q Okay. Now, 60 is the disc, and do
20 you see --

21 A Yes.

22 Q -- that the disc is also in contact
23 with the hub 58 when it's been mounted?

24 A Indeed it would need to be, and yes,
25 it does appear to be. So not only does it appear

1 to be in the image but that would be the way it
2 would be able to hold it in place.

3 Q Okay. And during operation, the hub
4 -- the handle 58 will rotate with the disc.
5 Correct?

6 A Yes, indeed, they are effectively
7 clutched against one another.

8 Q And then vacuum is going to be
9 applied in the movable portion of this housing
10 which would be on the right-hand side?

11 MR. CASEY: Objection, foundation.

12 A I don't understand that objection.
13 Should I nevertheless go on?

14 Q (BY MR. BROWN) Yes.

15 A That is my understanding, that the
16 rightmost portion here is the movable portion in
17 which the vacuum is applied.

18 Q And then I'm just going to scroll up
19 for a second, I'm looking for a different figure --
20 I scrolled in the wrong direction. Hold on.
21 Included in the right hand or movable portion of
22 the housing, there is a seal 99. Do you see that?

23 A I see 99, and it's a little bit hard
24 to make out from the image, but I believe the text
25 does refer to it as a seal.

1 Q And that seal will be pressed against
2 the rotating disc during operation. Correct?

3 A I frankly don't know if in this
4 particular invention 99 has that function, but one
5 would assume so based on the need to maintain a,
6 you know, a pneumatic vacuum or a lower pressure in
7 that area. But whether 99 is what does that, I
8 can't make out from Figure 6 because 99 is not
9 included in Figure 6.

10 Q Understood. But it is your
11 understanding that there would be a seal, whether
12 it's depicted in Figure 6 or not?

13 A Indeed.

14 Q And when vacuum is applied, the
15 handle 58 will withstand at least some of the axial
16 load produced by the disc on the seal?

17 A So that's a complex question. So the
18 handle, of course, because it's being pressed
19 against the disc, is already applying a load, or
20 already, if you wish, bearing a thrust. Not
21 because of the presence of vacuum but simply
22 because of the way that the two members are, or
23 elements are pressed against one another.

24 When the vacuum is applied, that
25 vacuum is particularly applying a force on the

1 portions of the disc that are exposed to the
2 pressure differential. So there is a vacuum on the
3 right, there is a portion on the left that is of a
4 higher pressure, and those portions of the disc are
5 feeling this pressure differential which ultimately
6 seeks to deform the disc.

7 That deformation then translates into
8 restoring forces in the disc that wish to
9 straighten it out and those forces will add, to
10 some degree, I cannot quantify how much, to the
11 force experienced in the interface between 58 and
12 the disc. That is correct.

13 Q Now, in your Declaration, you did not
14 provide any testimony assessing whether the
15 structures disclosed in VenHuizen are equivalent to
16 the structure disclosed in the '121 patent.
17 Correct?

18 A That doesn't sound like a
19 characterization I would agree with.

20 Q Did you provide any analysis in your
21 Declaration as to why the structure disclosed in
22 VenHuizen is not equivalent to the structure
23 disclosed in the '121 patent?

24 MR. CASEY: Objection, Declaration
25 speaks for itself.

1 A So indeed I believe that the
2 Declaration states that the components that
3 thrust-bearing -- the claimed thrust-bearing
4 element is comprised of, a shaft, ball -- bearings,
5 or ball bearings, but just to say bearings, and --
6 and the seat, all in the movable portion, are not
7 realized here.

8 There are no bearings. While there
9 is a shaft, that shaft is the drive shaft that
10 extends into the fixed portion. Not a shaft that
11 sits mediated through bearings in a seat in the
12 movable portion.

13 Q (BY MR. BROWN) So those are reasons
14 why the structure disclosed in the '121 patent, as
15 you understand it, are different from the
16 structures disclosed in VenHuizen. My question
17 was, where do you analyze that what VenHuizen
18 discloses is not equivalent to the structure
19 disclosed in the '121 patent?

20 A I am not sure how to answer that
21 question. My understanding was that my task was to
22 interpret the claims, to present my understanding
23 of the claims and the limitations. That in doing
24 so, I understood, based on the documents that we
25 have discussed previously, that the most reasonable

1 interpretation of the limitations and the claims
2 was the means plus function interpretation.

3 That the function was clear, it is
4 meant to support thrust that otherwise would make
5 the sowing disc push up against the seal and
6 possibly wear it down too -- too fast, and that the
7 means that achieve that function were not disclosed
8 in the limitation other than to suggest that they
9 had some of the functional attributes of being
10 supported rotatably in the movable portion and the
11 word "bearing" being used to describe something
12 that can also move in addition to carrying load,
13 and that the structure then was described in the
14 specification of the patent which talked
15 specifically to the existence of certain kinds of
16 components that are located in a certain location.

17 I did not understand that -- it to be
18 equivalent to that meant that one could find a
19 structure elsewhere on a mechanism that achieved
20 the same function. That would be sort of avoiding
21 the question of means and simply concerning one's
22 self with function, and my understanding was that
23 in the means plus function interpretation, one
24 needs to be concerned with both.

25 Q And so you did not provide any

1 assessment about whether the structure disclosed in
2 VenHuizen that we've just been discussing performs
3 substantially the same function in substantially
4 the same way to achieve substantially the same
5 result. Correct?

6 A I think that's also not correct. I
7 believe that in the Declaration there is reference
8 made to 58 acting as a nut, that was a
9 colloquialism, if you wish, to describe, you know,
10 something that one rotates in order to push two
11 things together.

12 In this case, a nut that pushes the
13 sowing disc against the hub. And, of course, a nut
14 does achieve the function of carrying thrust.
15 That's precisely its function is to prevent axial
16 motion. And so I believe I did analyze that
17 component of the understanding; in other words,
18 that function, was indeed analyzed. And it was
19 referred to 58 acting as a nut.

20 I did not analyze the structure by
21 which that component then achieves the ability to
22 rotate with the disc and so on. That was not
23 analyzed, but I believe it was quoted from
24 VenHuizen, or at least referred to in some way.
25 There was mention, I do recall, and I'm happy to be

1 corrected on this, but my recollection is that
2 there's also mention of a shaft in -- there are two
3 shafts here. There's the shaft in the '121 patent
4 which is connected or seated in a seat mediated
5 through bearings, and then there's the shaft in the
6 VenHuizen description here and I may be conflating
7 VenHuizen and Fiorido, so you feel free to correct
8 me on this but I believe that this shaft shown here
9 is the drive shaft.

10 And so we make that distinction
11 somewhere in the Declaration, but at this moment I
12 can't recall exactly where.

13 Q Okay. I've now put on the screen
14 Exhibit 1007 which is the Fiorido patent
15 application. Can you see that?

16 A Yes.

17 Q And you are familiar with this patent
18 application; correct?

19 A It's been some time since I looked at
20 it, but yes.

21 Q I'll scroll down to the figures. Are
22 you familiar with these figures?

23 A I am.

24 Q I'm sorry, did you respond? I didn't
25 hear it.

1 A I said I am, yes.

2 Q Thank you. I've put Figure 3, and
3 Figure 3 shows a housing with two halves. Would
4 you agree with that?

5 A Figure 3 shows many things that do
6 appear to include a left part and a right part and
7 some smaller components in between.

8 Q Okay. Well, Figure 3 includes a
9 housing that has two separate halves. Would you
10 agree with that?

11 A I, you know, I think -- I don't know
12 what -- what I'm agreeing to, frankly. I think I
13 observe that there is a left part that I think is
14 labeled 12. There is a right part I think that's
15 labeled 11. If you wish to call those halves,
16 that's your characterization, but they are
17 definitely two parts, and I do recall that parts 11
18 and 12 are joined, bolted together to form 10,
19 which is considered one whole seed distribution
20 element.

21 Q Okay. And in -- I'm going to go to
22 paragraph 67 -- do this quicker -- of your
23 Declaration, where you're discussing Fiorido. And
24 you say in the second sentence of this Declaration,
25

1 Neither housing component is
2 movable relative to the other
3 (fixed) housing component.
4 Instead, Fiorido bolts the
5 housing components together into
6 a fixed position.

7 Do you see that?

8 A I do.

9 Q And is -- is that what informs your
10 opinion that Fiorido lacks a housing with a fixed
11 portion and a movable portion?

12 A Well, that sentence, or the
13 corresponding discussion in the text of Fiorido and
14 a separate discussion in my Declaration that
15 distinguishes words like "movable" from
16 "removable," all of those things together inform
17 the opinion that you just paraphrased.

18 Q Okay. And so because Fiorido, the
19 housing components are fixed together, or as, in
20 your words, Fiorido bolts the housing components
21 together into a fixed position, that is what
22 ultimately, based on your analysis, means that
23 Fiorido does not have a fixed portion and a movable
24 portion.

25 A I think I answered this one already,

1 and as I explained, it's that observation plus my
2 observation of the terms "movable" and "removable"
3 that leads me to that conclusion.

4 Q Okay. And what is your understanding
5 of the terms "movable" and "removable"?

6 A So if you're willing to bring me back
7 to that portion of the Declaration, I'm certainly
8 happy to make reference to the way I very carefully
9 explained it there.

10 "Removable" would appear to mean
11 something that can be literally taken off and that
12 that is the main sort of idea behind it. We're
13 using the word "removable" to suggest that this can
14 be removed. It can be taken from one location and
15 just removed and placed somewhere else not in
16 conjunction with the device itself.

17 The word "movable" is a little more
18 delicate. In my professional understanding, as
19 someone who is both an engineer and an instructor
20 of engineering and an educator, try to be very
21 careful with, you know, using words like "movable"
22 and understand what that means, and what's really
23 important about the word "movable" is to describe
24 what is in -- what it is in relation to.

25 And so it's clear, of course, that

1 the whole seed drill, of course, is movable because
2 it moves relative to you, yet we would not
3 necessarily refer to it as, you know, having --
4 well, I would say when we describe the seed drill's
5 motion relative to you, we would say it's movable.
6 We wouldn't call it removable because it's simply
7 translating or maybe rotating relative to you.

8 So in this case, my understanding of
9 the term "movable," as used by the patentee, by the
10 inventor, is trying to describe inconsistently, I
11 believe, with VenHuizen, a type of movability that
12 is a relative movability between two elements. Not
13 removability but movability. In other words, that
14 one can be understood to be able to rotate or
15 translate relative to the other as part of the
16 design of the mechanism.

17 Clearly, when you remove something,
18 you're also moving it, but that is not my
19 understanding of the word "movable" relative to
20 here. Rather, I understand the movable portion to
21 refer to a portion that can be moved relative to,
22 in this case, the other portion.

23 So this is the distinction I'm
24 making, and it is my understanding that both
25 VenHuizen and the '121 patent have considered a

1 system that consists of one portion which is fixed
2 relative to the housing and one portion which is
3 movable around a hinge joint, because that design
4 allows access to the interior without having to
5 remove the second portion.

6 So the movability here is mediated
7 through the hinge joint. And taking that all in
8 totality, that's why I conclude that Fiorido
9 doesn't have these features. Fiorido is not
10 describing a housing that, as part of its design,
11 wants -- allows one to sort of rotate things
12 without removing them.

13 Rather, Fiorido requires removal of
14 one part in order to access the interior, and so
15 this distinction is what I used to interpret the
16 difference between removability and movability and,
17 in this case, the idea that Fiorido doesn't have
18 the latter.

19 Q What's your understanding of how the
20 entire structure gets mounted to a seed drill? And
21 I mean the entire structure of Fiorido.

22 A I -- I have no firsthand knowledge of
23 how the entire structure shown here is mounted to
24 the seed drill. I do understand that 15 is where
25 seeds come in, but exactly how that's connected, I

1 don't know. I also see shaft 22, but exactly how
2 that's connected, I don't know.

3 Q So we look now at Figure 2, perhaps I
4 could blow that up a little bit so it's a little
5 easier to see. Can you see Figure 2?

6 A Yes.

7 Q Figure 2 shows a seed disc. Correct?

8 A Indeed it appears that that would be
9 38. Am I -- no, not 38. Um --

10 Q I'm not sure it's given a number --

11 A Yeah, maybe it's not given a number,
12 but it's that thing where the seeds are attaching
13 themselves to.

14 Q Yeah. And, for instance, 34 is
15 described by the specification as an aperture?

16 A As a hole, yes, mm-hmm.

17 Q So this structure would be, that my
18 cursor is on, would be the seed disc; correct?

19 A That would be correct. That would be
20 my understanding, yeah.

21 Q Okay. And there is a part of this
22 housing that is made up of this casing 12?

23 A Yes.

24 Q And a part of it is made up by the
25 other side which is given -- I think we might call

1 it container 11?

2 A 11, yes, I agree 11 is the other way.

3 Q Okay. And then it's disclosed that
4 there's a hollow sealing ring 39. Right?

5 A Indeed.

6 Q And that hollow sealing ring is going
7 to be the -- on the upper-hand side of Figure 2, it
8 shows that there is an opening which is going to
9 create or apply a vacuum to the disc; right?

10 A Sorry, on the up -- could you explain
11 what you meant by that?

12 Q I'll rephrase the question.

13 Hollow sealing ring in this cross
14 section is shown both at the top side of the figure
15 and also at the bottom side; is that correct?

16 A I think that's correct. I'm not 100
17 percent sure, but it seems very reasonable.

18 Q Okay. And the sealing ring at the
19 top, there's shown to be an opening in the position
20 of the aperture 34 on the seed disc; right?

21 A Yes.

22 Q And so vacuum will be applied within
23 the sealing ring and then through that opening to
24 the disc as the disc rotates?

25 A That opening extends not just in the

1 small little area, but, of course, throughout a
2 segment of the arc, yes. That is where the
3 pressure differential exists.

4 Q Okay.

5 A Which appears not to be the case at
6 the bottom presumably because that's where the
7 release occurs.

8 Q Right. So the pressure differential
9 will exist in the top half, at least, of this
10 figure and not at the bottom half; right?

11 A Yeah, I think -- I think we're saying
12 the same thing, so yes. I'll go with it. You use
13 terms like "half," so I can't be quite that
14 precise, but...

15 Q I'll say portion. Top portion versus
16 bottom portion; is that --

17 A Maybe not even top or bottom. Just
18 say significant portion of the arc, of the circular
19 circumference, as the vacuum differential, and the
20 other portion doesn't. And exactly how long that
21 is I think is different between different
22 realizations of this type of a system.

23 Q Okay. And So where there is an
24 opening, force will be applied against the disc, at
25 least in Figure 2, it would be in a direction from

1 right to left.

2 A That is correct.

3 Q And that right to left force would
4 not be present at the bottom of Figure 2.

5 A That's correct. Where there is --
6 where there's no opening, there is no pressure
7 differential; therefore, right there, there is no
8 force. That is correct.

9 Q The hollow sealing ring will compress
10 when this vacuum is applied. Correct?

11 A I'm sorry, are you saying it'll
12 compress -- and so -- so the hollow sealing ring
13 deforms; is that what you're saying? I didn't
14 quite understand.

15 Q I used the word "compress," but if
16 you prefer "deforms," we can --

17 A Okay. Yeah. So -- so I think the
18 hollow sealing ring -- the right side of the hollow
19 sealing ring, as shown in this image, is going to
20 feel the pressure from the seed sowing disc and
21 most likely deform somewhat. More importantly, I
22 think, is the fact that the sealing ring is
23 stationary. The sealing ring is not moving.
24 Whereas, the sowing disc is moving.

25 And so that contact, whether it leads

1 to deformation or not, is abrasive, and that's the
2 concern here. Not so much the deformation of the
3 sealing ring, but the abrasiveness of those
4 contacts.

5 Q In Figure 3, there is shown --
6 there's a driving disc 31. Do you see that?

7 A Yeah, I can't recall if that's called
8 a driving disc or not, but I do see element 31.

9 Q And then there is a centering dowel
10 32?

11 A Yes.

12 Q And then there's a pin 33.

13 A Correct.

14 Q And those are somehow connected to a
15 shaft 29?

16 A Indeed. That appears to be the case.

17 Q And that shaft 29 will be seated
18 where these bearings 28 are?

19 A That's correct. The shaft is, I
20 believe, the driving shaft, and those bearings
21 shown there are effectively acting, I would guess,
22 as radial bearings.

23 Q And then if we go back to Figure 2,
24 this cross section shows those parts assembled
25 essentially; is that correct?

1 A Yes, it is correct. I think the
2 things that are numbered 28 here would be possibly
3 those bearings that we were just discussing. As
4 you can see in the image, shaft 29 just runs
5 through that section and then makes contact with
6 something on the left there which is not described
7 by a number. That's where, if there were a load, a
8 thrust load, an axial load, it would appear from
9 the image that it would be borne by that element if
10 there were such an axial load. Not by the bearings
11 in this case.

12 But I'm just judging it from what I'm
13 seeing.

14 Q Well, okay, let's talk about that for
15 a second. If -- if there's an axial load from the
16 disc onto the shaft, that would translate all the
17 way to this unnumbered thing which you would call a
18 seat?

19 A I -- I wouldn't. This -- I don't
20 know what to call that at all because I don't even
21 understand. It would appear to me that that's
22 omitting a portion of the driving mechanism where
23 there is maybe some connection to the motor of the
24 vehicle or the wheels, you know, there's more going
25 on here than what we're seeing and there's -- my

1 judgment is that they are omitting that detail.

2 The only seat that I see here is the
3 seat of the ball bearings, which would be 27, which
4 the 28 ball bearings are sort of seated in. And
5 that seat is preventing radial motion. Right? So
6 if there were radial loads for some reason
7 appearing here, those ball bearings would prevent
8 radial motion while still allowing rotations of the
9 shaft, which is, of course, what you want of a
10 drive shaft.

11 Q If there is force translated through
12 the drive disc, an axial force from right to left,
13 at least the top ball bearings would also receive
14 some of that axial force. Wouldn't they?

15 A That is quite difficult to judge from
16 this image. You'll notice, for example, that 27,
17 which is that hatched area right above the
18 uppermost ball bearings? That 27 has a T shape, an
19 inverted T shape, and the hat, so to speak, the top
20 of that T shape extends almost all the way -- I
21 mean, for all I know in the picture it appears that
22 it extends all the way out to where that angle
23 piece is that you refer to as the driving disc, and
24 I can't judge from this image whether there is
25 contact between 27 and the driving disc.

1 I would assume there wasn't. Because
2 if there were, you would have friction and that
3 friction would resist rotations and that would be a
4 bad thing for a drive shaft.

5 So judging from the image, I cannot
6 tell whether there is contact. My judgment, as a
7 person of ordinary skills in the art, would say
8 there is not contact between them. Now, I turn to
9 your question, which is, isn't there contact
10 between the driving disc and the ball bearing, and
11 I would say, well, in the image it appears that
12 there might be, but in much the same way as there
13 might would be 27, I just concluded that there
14 isn't with 27. So I'm a bit at a loss for how to
15 -- what to determine from this image because of
16 this, you know, slight confusion in the way it's
17 drawn.

18 So I'm left with having to read the
19 text, I suppose, to understand what is going on
20 here, and the text makes no mention of this.

21 Q So do you see -- do you see this
22 structure here where my cursor is? It doesn't have
23 a number but it appears to be the pin --

24 A Yes, I do see that.

25 Q -- coming through the disc. Do you

1 agree that that's what that is?

2 A I -- I am comfortable agreeing that
3 that is what it is.

4 Q Okay.

5 A I think it's probably better in
6 Figure 3, the one you were showing before. Right?
7 But I know you want to look here, so we'll keep
8 looking here.

9 Q Well, we can look at 3.

10 A Yeah.

11 Q I'm not saying that I think that
12 that --

13 A Yeah, I agree.

14 Q -- 33 -- okay.

15 A Yeah. I think that makes a lot of
16 sense, yeah.

17 Q Okay. And then the driving disc
18 31 --

19 A Right.

20 Q -- would appear to also have the hub.
21 The centering hub. Right?

22 A The centering, was it called a dowel
23 or something like that?

24 Q Yeah, I'm sorry, you're correct.
25 It's the centering --

1 A Yeah.

2 Q -- dowel 32.

3 A Yeah. All of those things seem to be
4 sort of connected in some single piece, yes.

5 Q Okay. And so that's the structure
6 that we're looking at here. This is the driving
7 disc, the centering dowel, and then the pin;
8 correct?

9 A Right. So -- so actually, if I may,
10 31 and 32 in this image are shown as one solid
11 body.

12 Q Yes. Agreed. Okay. Now, as drawn
13 in this figure, isn't the seed disc shown touching
14 the driving disc?

15 A Well, I think we're back to where I
16 was a few minutes ago. It certainly appears to be,
17 but it also appears that the, at least from this
18 two-dimensional cross section, it also appears that
19 31, the disc, is in contact with 27. I mean, I
20 don't think that's the case, but it certainly
21 appears to be.

22 But I'm happy to exclude that
23 possibility, and I'm also happy to say that from
24 this image, and quite reasonably so, if these are
25 designed in a certain way, then the driving disc

1 might be in contact with the sowing disc and that
2 would be a good idea.

3 Q Okay. In fact, if we look here, the
4 driving disc 31 has a much smaller diameter than
5 the -- the entire housing. Is that correct?

6 A That is -- well, it certainly is
7 smaller, yes. It looks like it might be half, at
8 the very least.

9 Q Okay. And then the bearings 28 are
10 shown to be in contact with the driving disc and
11 you would expect that, wouldn't you?

12 A I don't know. If those bearings
13 serve only the purpose of working against radial
14 loads, then I wouldn't expect it. But if they had
15 a thrust-bearing purpose, then I would expect it.
16 And I don't know because of what I just said before
17 having to do with 27.

18 I will admit that I hadn't previously
19 looked at 27, but since you brought my attention to
20 this image, I am doing my very best to interpret it
21 and, you know, if I wanted to have the bearings
22 carry thrust, then I would expect contact. But the
23 text makes no mention of this so I am speculating,
24 frankly, based on an image that is at times a
25 little bit difficult to interpret.

1 Q And the bearings 28 are shown to be
2 in contact with the shaft 29?

3 A Indeed. Indeed. And that would be
4 what one would expect for a radial bearing.

5 Q But these could also -- you're saying
6 these could also be a thrust-bearing and not a
7 radial bearing?

8 A So a radial bearing is meant to carry
9 loads that sort of try to move this shaft
10 laterally. But if you -- so if you have that, then
11 you need contact; right? Because that's the only
12 way you're going to carry load.

13 If you're trying to carry thrust
14 load, then you may not even need contact between
15 the shaft and the bearings because the thrust load
16 is axial; right? And it can be borne, for example,
17 by having 31 make contact with the ball bearings
18 without them making contact with the shaft.

19 So -- so I -- I don't know. I mean
20 I'm -- you know, we're both interpreting a drawing
21 neither of us made, so that's all I can -- I can
22 offer you.

23 Q Could those bearings be doing both
24 functions, absorbing both axial and radial thrust?

25 A I think that might be a little bit

1 complicated by the fact that they have to rotate.
2 You know, the bearings are rolling; right? That's
3 sort of the way they function. And if they are
4 rolling -- I'm trying to think about they could
5 roll, um, but then they're not -- they're not
6 rolling against both surfaces; right? You can't --
7 I think -- well, at least I'm having trouble seeing
8 how they could be rolling against both surfaces
9 simultaneously.

10 So if they're not rolling against
11 both surfaces, then I'm drawn to imagine that there
12 would be friction, unwanted, undesired friction.
13 So the purpose of rolling is that you sort of
14 eliminate sliding between elements, and by
15 eliminating sliding, you eliminate friction.

16 And in this case, if you wanted to do
17 both, and I'm certainly willing to spend hours
18 thinking about this, but just, you know, based on
19 my immediate thinking, I -- I would have to do the
20 analysis, frankly. It doesn't come to me naturally
21 to say it can rotate relative to both.

22 Q Would you agree with me that if the
23 driving disc is in contact with the seed disc when
24 vacuum is applied, the driving disc would withstand
25 simply some of the axial load that is being applied

1 to the sealing ring?

2 A I think I would agree to the extent
3 that the driving disc, the drive shaft, and
4 whatever other mechanism is keeping the drive shaft
5 from moving axially, that that totality of a
6 device, of a mechanism, is carrying a portion of
7 that load. Yes.

8 We're back to the conversation we had
9 earlier about whether it's -- whether the load is
10 carried only by the two contact -- the two surfaces
11 in contact, or whether it's an entire mechanism,
12 and I would argue it's really the entire mechanism.

13 Q Okay. And so prior to the invention
14 of the '121 patent, one of ordinary skill in the
15 art, looking at Figure 2, would know that if the
16 seed disc was in contact with the driving disc,
17 then the combination of the driving disc and the
18 shaft and perhaps the bearings would absorb at
19 least some of the axial load that is applied to the
20 sealing ring. Correct?

21 A Yes.

22 Q Now, there is some discussion of this
23 driving disc. I want to go to that in the
24 specification. It says, starting at about line 49,
25 and I believe this is column 5, (quote as read):

1 The casing 12 is also provided
2 with a perforated hub 27 (Figure
3 2) through which passes, as
4 supported by bearings 28, a shaft
5 29 that may for instance be
6 driven through a cog-wheel 30 to
7 rotatably drive the disc 13 --

8 Did I read that accurately?

9 A I believe you did.

10 Q Okay. It continues, (quote as read):
11 -- to which it is connected by
12 means of a driving disc 31.

13 Do you see that?

14 A I do.

15 Q And the "it" in that sentence is the
16 shaft. Right?

17 A Hold on, give me a second. A shaft
18 that may for instance --

19 Q I misstated --

20 A 29, I think it's 29 and 13, so it's
21 describing 29 being connected to 13 through 31. I
22 believe that is how I'm reading it. So -- so I
23 think you're -- I believe that's what you were
24 saying but I can't remember.

25 Q Yeah, I think I misstated. My

1 question is, isn't the "it" in that sentence the
2 disc 13?

3 A No, I think that's the shaft.

4 Q So it says --

5 A I think "which" is the disc and "it"
6 is the shaft.

7 Q Well, it says (quote as read):
8 ...a shaft may be for instance --
9 a shaft 29 that may for instance
10 be driven through a cog-wheel 30
11 to rotatably drive the disc 13 --

12 A "To which."

13 Q (Quote as read):
14 -- to which it is connected by
15 means of a driving disc 31.

16 A Right. So the "which" refers to the
17 disc, and "it" refers to the shaft.

18 Q Yes. So that is saying that the
19 driving disc is connected to the disc. Right?

20 A The -- sorry. The driving disc is --

21 Q Driving disc --

22 A -- is the means -- is the means for
23 achieving connection between 29 and 13.

24 Q And 13 is the seed disc; right?

25 A I -- yes, I believe that's true, yes.

1 Mm-hmm. I don't recall, but I think that makes a
2 lot of sense. I'm sure it's higher up in the
3 document, but yes. Yeah, 13, yes, in the Figure 1
4 it shows 13 pointing at the sowing disc, yes.

5 Q So doesn't that say that the driving
6 disc is connected to the seed disc 13 and that's
7 how the shaft imparts force on seed disc 13?

8 A No, it didn't say that. You stopped
9 -- you stopped reading after the -- before the
10 comma there. You should probably read the entire
11 paragraph to see what the means are for that
12 connection.

13 Q Well, okay, so (quote as read):
14 ...to which it is connected by
15 means of a driving disc 31, a
16 centering dowel 32 and a driving
17 pin 33.

18 So all three of --

19 A Right.

20 Q -- the things are connected to --

21 A No. No, all -- no, that's not
22 correct. All three of those things are part of the
23 means that achieves the connection between 29 and
24 13. But there is a chain of components here.

25 Q Now, when the -- when the disc is

1 rotating and vacuum is applied, there will be
2 portions of the disc that will receive a force from
3 the vacuum and portions that won't. Correct?

4 A Yes.

5 Q So that will cause there to be a
6 force on part of the disc and not on another part
7 of the disc as it rotates. Correct?

8 A Yes.

9 Q And so that will cause an angular
10 moment on the disc, won't it?

11 A I'm sorry, what's an angular moment?

12 Q Well, let me try it a different way.
13 If there were nothing to support the disc in that
14 circumstance --

15 A Uh-huh.

16 Q -- the disc wobbled, wouldn't it?

17 A Um, oh, I see what you mean by
18 wobble. It would have some sort of a shape that
19 keeps changing as it goes around. Um, yes, that
20 seems reasonable, yes.

21 Q Yes. And this driving disc 31 is
22 shaped like a seed disc. Has the same shape;
23 correct?

24 A I don't know what you mean by having
25 the same shape. You mean both are discs?

1 Q Yes. Both are discs.

2 A This is true, both are discs.

3 Q And there's no reason for 31 to be a
4 disc unless it's helping to stabilize seed disc 13.
5 Correct?

6 A That's an excellent question. One
7 that I actually spent some time thinking about. If
8 I may, it appears to me that, at least initially in
9 the discussion, the presence of 31 is intended to
10 allow 33 to be offset from the center of the
11 driving shaft.

12 By having 33 offset from the center
13 of the driving shaft, 33, as it goes through the
14 hole in 13, is able to apply an azimuthal force;
15 right? A force that is sort of in the angular
16 direction, which then, of course, produces a torque
17 about the driving shaft, which is what drives the
18 sowing disc in rotation.

19 So 31, as I read it, is mediating
20 from between the driving shaft and the pin in order
21 for the rotations of the driving shaft to impose
22 rotations of the sowing disc.

23 If my understanding is accurate, then
24 the question you raised is -- is quite relevant.
25 Is it necessary for 31 to be disc shaped in order

1 to achieve that outcome? And one might say could
2 one achieve it by having a different shape. Maybe
3 an oblong, very narrow strip or something like
4 that. And I think one could achieve it in other
5 ways.

6 Is it easy to build a disc? Is it
7 easy to manufacture a disc? Yes. It is definitely
8 easy to manufacture discs. That could be a reason
9 why one would go with a disc.

10 It's also reasonable to imagine that,
11 you know, having something that has a larger
12 surface area could be useful for other purposes.
13 Of course, we're both speculating here because the
14 Fiorido patent doesn't actually refer to the
15 purpose of that disc-shaped geometry of 31. It
16 only says that 31, 32, and 33 are there to mediate
17 the connection between the drive shaft and the
18 sowing disc.

19 So we're interpreting, and really
20 speculating, and I can only go as far with my
21 speculation as I just did.

22 Q Would one of ordinary skill in the
23 art, reading Fiorido prior to the '121 patent, have
24 understood that if it were in contact with the
25 disc, the seed disc 13, the driving disc 31 could

1 help stabilize seed disc 13 against axial thrust?

2 A I have answered that question before.
3 If there is contact between the sowing disc and 31,
4 then 31 will carry a portion of the load that is
5 experienced by the sowing disc. If you allow me, I
6 will point you to the fact that there are two facts
7 that do not -- that sort of teach away from that
8 conclusion at the very least.

9 There is one discussion in the patent
10 that refers to the sealing ring as being present in
11 order to position the sowing disc. That statement
12 of positioning the sowing disc, in other words,
13 resisting axial motion, is not made in Fiorido
14 regarding 31. But it is made in Fiorido regarding
15 the sealing ring, as we were discussing before.

16 So there is in fact in Fiorido a
17 discussion of an element that bears thrust, while
18 the sowing disc is rotating, in order to prevent
19 those types deformations that you're referring to.
20 There's only one such mention in the Fiorido patent
21 and it doesn't actually say anything about, you
22 know, the kind of deformations that you mentioned.
23 It doesn't say anything about axial load at all,
24 but it does talk about positioning, and we've been
25 discussing I think the notion of position as the

1 potential for contact between two things.

2 And so in Figure 2, which we're not
3 looking at right now, one can see that the sealing
4 ring and the sowing disc are in fact in contact and
5 reading the text, one understands that at least
6 Fiorido describes the sealing ring as having the
7 purpose of carrying load as the seed disc gets
8 pressed up against it.

9 Fiorido does not refer to 31 in that
10 way but I totally am willing to agree with you that
11 if there is contact between the sowing disc and 31,
12 then some load will also be carried by 31.

13 Q Okay. And I think my question was
14 one of ordinary skill in the art looking at this
15 figure would understand that possibility if 31 was
16 in contact with the disc, that it would have that
17 additional function of withstanding axial force.
18 Correct?

19 A There were many parts to your -- your
20 statement that you're asking me to agree to as a
21 person of ordinary skills in the art. I -- I've
22 agreed to the fact that if there is contact, load
23 will be applied and 31 will carry an axial load.

24 You used the term "will have the
25 function" as if it was intentional. That is a --

1 not obvious to me, and one of reasons that's not
2 obvious to me is because Fiorido also describes the
3 possibility of having 29, 32, 31, and 33 coming
4 from the other side, being inserted through 40, and
5 moving, you know -- and then being connected to the
6 sowing disc.

7 In that event, when it's coming from
8 the other side, the pressure is now away from 31.
9 The pressure of the pressure differential, the
10 vacuum. And so if I read -- you know, I can look
11 at the picture and I can try to draw conclusions
12 from what I see in the picture, but I also have to,
13 you know, not jump to conclusions about what the
14 intent is or what a person of ordinary skills in
15 the art would sort of assume is going on here.

16 So if I jump to the conclusion that
17 there is contact, and then I read the rest of the
18 text where it says the whole mechanism could be
19 inserted from the right, from member 11, then I
20 might have to revisit my conclusion that in fact
21 there is contact. That's what I have done.

22 Q I guess my question wasn't, would one
23 of skill conclude there was contact.

24 A Okay.

25 Q My question was, would one of skill,

1 looking at Fiorido prior to the '121 patent,
2 understand that if there was contact, then the
3 driving disc 31 would absorb some of the axial load
4 when the vacuum is applied.

5 MR. CASEY: I think that was the
6 question he just answered.

7 MR. BROWN: I disagree.

8 MR. CASEY: Go ahead and answer
9 again.

10 A I can answer again, yes, absolutely.
11 So -- so you said if a person -- a person of
12 ordinary skills in the art looks at Fiorido. So
13 when you say "looks at Fiorido," I assume you mean
14 looking at the entire patent disclosure. Not
15 simply looking at Figure 3. Am I correct?

16 Q (BY MR. BROWN) Sure.

17 A Okay. So when I look at the entire
18 patent disclosure, I -- I am led to not draw or not
19 imagine that possibility, but I am certainly
20 willing, by looking at Figure 3 alone, to say that
21 -- and also Figure 2, as you showed me before, that
22 if in fact 31 is positioned on the vacuum side, and
23 if there is contact between 31 and 34, as a person
24 of ordinary skill in the art, I would assume that
25 there was load between them if they are in contact.

1 Absolutely, I would.

2 But reading Fiorido in total, I am
3 led to believe that there is no such assumption
4 made by Fiorido.

5 And if he had drawn the picture the
6 way he talks about elsewhere, then I would not have
7 drawn that or come to that understanding.

8 MR. BROWN: Okay. Looks like it's
9 time for our last break.

10 THE VIDEOGRAPHER: We are off the
11 record at 12:20 Central Time.

12 (Off the record.)

13 THE VIDEOGRAPHER: We are back on the
14 record. This is media unit number four. The time
15 is 12:31 Central Time.

16 Q (BY MR. BROWN) Okay, Dr. Dankowicz,
17 you -- I believe you testified earlier that wear on
18 the seal was a known problem according to the '121
19 patent. Right?

20 A That is correct.

21 Q Yes. And the applicant also admitted
22 that a thrust-bearing element was a known solution
23 to that problem. Correct?

24 A Yes.

25 Q And he also admitted that a rotatable

1 thrust-bearing element was a known solution to that
2 problem. Correct?

3 A I don't recall the exact wording, but
4 certainly seems consistent with my understanding.

5 Q Okay. I'm going to show you the
6 Petition that was filed in this matter. You -- you
7 read the Petition; is that correct?

8 A Um, I -- I frankly -- if it's listed
9 under the documents that I read, then I did indeed
10 read it, but it would have happened probably back
11 in the spring. Not any time recently.

12 Q All right.

13 A But yes, now I do recognize parts of
14 it, thank you.

15 Q I'm scrolling down to page 82, I
16 believe. Which is in a section on the Amazone
17 reference. Can you see the reproduction of Figure
18 227 from the Amazone reference here on this page?

19 A I see in the page Figure 227, which
20 is a reproduction only of the rectangular image,
21 and then I see some added text and arrows that I
22 believe Petitioner added to this image.

23 Q Correct. Do you -- do you recognize
24 that as a view of the seed meter from the Amazone
25 product?

1 A I have no firsthand knowledge of the
2 Amazon product. Some of the images that appear in
3 my Declaration were created by someone working with
4 Counsel Casey. So my only knowledge of the Amazon
5 product is through these images and the images
6 included in my Declaration.

7 Q Okay. So you didn't actually
8 physically hold one of those Amazon products in
9 your own hands?

10 A That is correct.

11 Q Your knowledge of them comes from
12 images and descriptions forwarded to you by
13 counsel?

14 A I think entirely images, frankly.

15 Q Okay. Now --

16 A Actually, let me -- let me clarify.
17 Images and text that counsel and I worked on
18 together to describe those images.

19 Q Okay. Did you ever ask to get one of
20 those meters?

21 A I did not.

22 Q Why not?

23 A I don't know how to answer a question
24 like why not. I was not asked to ask to get one of
25 those meters, so I didn't ask to. I did the things

1 that I was instructed to do, which was to evaluate
2 the matter at hand.

3 Q Would it have been more helpful to
4 you to have one of those meters in hand, do you
5 think?

6 A Based on the images that were shared
7 with me, including the exploded images that showed
8 the parts being added to the thing that is here
9 referred to as the movable portion, you know,
10 showing individual elements being added
11 consecutively, I was quite able to understand the
12 design that was shown to me and the text that we
13 included and it seemed to suffice for the purpose
14 of doing my -- you know, the thing I was asked to
15 do, which is to evaluate these claims.

16 Q Okay. And there is, um, there is
17 shown here an open seed meter. Would you agree
18 with that?

19 A Well, I see a sowing disc on the
20 left, I think that's number 1 in this image, and I
21 see an organization portion on the right which is
22 referred to as the movable portion, which quite
23 reasonably is something that can move relative to
24 something on the left which is obscured by the
25 sowing disc.

1 So I'm -- it's definitely open in the
2 sense that the movable portion is entirely visible
3 and the interior of it is entirely exposed.

4 Q Okay. And is it your understanding
5 that the structure that the manual labeled 2 is a
6 seal to create a vacuum portion on the disc?

7 A It's a seal to enclose the vacuum
8 portion on the disc, yes, to maintain that vacuum,
9 yes.

10 Q And during operation, the seed disc 1
11 will be in contact with the seal 2. Is that
12 correct?

13 A For the same reasons that we
14 described earlier because of the pressure
15 differential.

16 Q And a person of ordinary skill in the
17 art, prior to the '121 patent, would have
18 understood that seal wear could occur on structure
19 2 in this figure. Correct?

20 A Yes, both from the knowledge outside
21 of '121 and, of course, '121 also mentions it as --
22 as an occurrence.

23 Q And one of ordinary skill in the art
24 would know, prior to the '121 patent, that
25 rotatable thrust-bearing elements had been used to

1 address or alleviate seal wear. Correct?

2 A Um, I'm going to have to qualify my
3 answer here. I don't recall that person of
4 ordinary skills in the art implied that one had
5 direct knowledge of this particular device. Or
6 this particular system. And so to then conclude
7 that a thrust-bearing element would be used to
8 alleviate this would require one to actually know
9 the state of the art of this specific technology,
10 which POSA does not require.

11 Q Okay. Well, I want you to assume for
12 the purposes of this question that a POSA is in
13 fact required to know all of the prior art that
14 existed before the invention of the '121 patent.
15 Do you understand what I'm asking you to assume?

16 MR. CASEY: So objection that it
17 calls for speculation, but you can go ahead.

18 A Okay. So you're asking me to
19 characterize a POSA differently than the way it's
20 characterized in the previously agreed to
21 documents?

22 Q (BY MR. BROWN) I'm asking you to
23 assume that legally a POSA is understood to know
24 all of the prior art that exists. Do you
25 understand what I'm asking you to assume?

1 A I understand what you're asking me to
2 do. Are you requiring me to agree to it?

3 Q No, I'm asking you to make that
4 assumption, not asking you to comment whether you
5 agree with it or not.

6 A I see. Can -- would you agree to not
7 calling a person who has that knowledge a POSA?
8 Can we just call it a person who has that
9 knowledge?

10 Q No. No, my question, very
11 specifically --

12 A I see.

13 Q -- I want you to assume that a person
14 with ordinary skill in the art --

15 A Yeah.

16 Q -- is presumed to know all of the
17 prior art that existed. Okay?

18 A Okay. I'll assume that a POSA is
19 someone who knows all the prior art that existed.

20 Q Okay. So a POSA, looking at the
21 Amazon manual and in particular this figure, would
22 know that seal wear was a potential problem.
23 Correct?

24 A That would be true under your
25 assumption; it would also be true under my

1 assumption.

2 Q And would know that one way seal wear
3 had been addressed in the prior art was to use a
4 rotatable thrust-bearing element. Correct?

5 A Under your assumption, that is
6 correct.

7 Q And so there would be a reason for a
8 person of skill in the art to mount a rotatable
9 thrust-bearing element on the orange side of this
10 housing to relieve the known problem of seal wear.
11 Correct?

12 A Well, I think that is qualification
13 too. You are pointing out a -- an issue. Whether
14 it arises -- or rises, sorry, to the level of a
15 problem is a business decision. A business
16 decision that someone manufacturing this would have
17 to make as to the investment of components and
18 design to address a problem that might not be
19 significant relative to other issues that occur in
20 a system like this, and so I can't speak to what
21 that business decision would be.

22 Q Okay. I want you to set business
23 decisions aside in answering this question. Do you
24 agree with me that a person of ordinary skill in
25 the art, looking at the Amazone figure, would

1 understand, or would have a reason to address seal
2 wear prior to the '121 patent?

3 A Yes.

4 Q And that same individual would know
5 that rotatable thrust-bearing elements had been a
6 prior solution to that problem. Correct?

7 A Yes.

8 Q Now, would it be within the skill of
9 a person of ordinary skill in the art to adapt the
10 disc shaft and bearings disclosed in Fiorido to be
11 used on the orange side of the housing of the
12 Amazone figure?

13 A Kindly restate that or read it back
14 to me again, please?

15 MR. BROWN: Could the court reporter
16 read it back, please?

17 THE REPORTER: "Would it be within
18 the skill of a person of ordinary skill in the art
19 to adapt the disc shaft and bearings disclosed in
20 Fiorido to be used on the orange side of the
21 housing of the Amazone figure?"

22 A Um, so I think my answer will have to
23 be no, even though I sort of imagine where you're
24 going but I won't presume anything. So I'll leave
25 it at no, and if you want more, I'll happily

1 describe more detail.

2 Q (BY MR. BROWN) Why do you say no?

3 A My understanding of the Amazone
4 design is that the teeth on the outside of the
5 sowing disc are engaging with some type of a gear
6 that drives the sowing disc in rotation.

7 In the Fiorido patent, it is the
8 drive shaft connected to the sowing disc through
9 the driving disc, the centering dowel and that pin
10 that achieve that driving mechanism.

11 So from Fiorido, I would assume that
12 I need to design something that drives the disc.
13 Not that I need to design something that bears
14 thrust. And the solution to driving the disc in
15 Amazone is the teeth and the gearing mechanism.

16 So for that reason, I say no.

17 Q So it's your understanding that to
18 make the combination, one has to take the structure
19 as it exists in Fiorido and graft it onto the
20 Amazone product?

21 A No. I'm saying if one wants to take
22 Fiorido's solution, Fiorido's solution is for
23 driving. And there is already a solution to
24 driving. You're asking can Fiorido's solution for
25 driving, if one interprets it as something that

1 carries load, be put on the outside gear in the
2 movable portion in order to carry load.

3 You know, that, I think requires one
4 to make that decision. Can one? Yes. Would one?
5 That depends on whether one wishes to use that
6 particular solution with a centering dowel and a
7 driving disc and a pin, you know, all those
8 different components which were there for the
9 purpose of driving.

10 So I don't dispute the fact that the
11 solution that has been offered in '121 is a good
12 solution. I mean, at least it appears to me to
13 solve the problem, and you're asking me, I think,
14 whether someone would come to that solution simply
15 by looking at a number of different existing prior
16 art and combining them.

17 And my only sense of the prior art is
18 that it requires me to make inventive insights. I
19 have to have inventive insights to take something
20 from one patent which wasn't intended to carry
21 thrust, to carry load, and which, by the way, is
22 driven by the drive shaft for which the bearings,
23 as we discussed earlier, aren't necessarily
24 thrust-bearing but potentially radial-bearings,
25 there's a lot of inventive steps I have to take to

1 take that realization in Fiorido and now say that's
2 what I'm going to use over here.

3 Q I think you're answering a different
4 question than I asked.

5 A Okay.

6 Q I think you're answering does Fiorido
7 tell someone of ordinary skill to do that.

8 A I'm not-- that's not my understanding
9 of my own answer. I didn't believe, I don't
10 believe -- Fiorido obviously doesn't tell -- I
11 think we are in agreement that it doesn't speak to
12 that at all.

13 But my point being, in the absence of
14 Fiorido, speaking to anything, and in the presence
15 of figures that very clearly and language that very
16 clearly speaks to the purpose of the drive shaft,
17 the centering dowell, the driving disc and the
18 dowel -- I'm sorry, the pin, as being for the
19 purpose of driving. I mean, after all, every --
20 every one of those components has the adjective
21 driving in it.

22 For me now to say, oh, that is
23 exactly what I need to put on the movable portion
24 in order to carry thrust requires me to take a leap
25 of imagination. A leap of imagination to me, it's

1 not a big leap. I'm not arguing that it's, you
2 know, out of the imagine -- you know, like no one
3 would ever imagine it.

4 Obviously someone did imagine it.
5 They had a particular problem to solve and they did
6 come up with a solution, which was not to take
7 Fiorido's drive shaft and driving pin and driving
8 disc and so on, but rather to move this
9 thrust-bearing element that they mention in the
10 patent had been a solution, as you and I already
11 discussed in the past.

12 I don't know what they're referring
13 to, by the way, of that because the patent does not
14 explicitly state which references it's making when
15 it says that the prior art has used thrust-bearing
16 elements. I don't know if it's referring to any of
17 the ones we -- we've discussed.

18 But I'm trusting that, you know, they
19 are describing the -- the circumstances as they
20 were at the time, and I am simply just telling you
21 that, you know, it doesn't just leap out at me that
22 I should now take a driving mechanism and convert
23 it into a thrust-bearing mechanism and put it on
24 the opposite side, by the way.

25 So that's all I'm telling you.

1 Q Okay. Well, my question was, would a
2 person of ordinary skill in the art at the time
3 have been capable of taking the structure disclosed
4 in Fiorido and putting it into the orange portion
5 of the Amazone figure to act as a thrust-bearing
6 element? Not whether they would have done so,
7 but --

8 A I understand. Yeah. I understand
9 your question. Um, so, um, would -- I'll -- if I
10 may rephrase your question and see if it's the same
11 question or not, how about if I start by asking
12 would a person of ordinary skills in the art at the
13 time of the invention be capable of inserting a
14 thrust-bearing element on the movable portion that
15 would carry the load on the sowing disc using
16 bearings and so forth.

17 And that the answer to that question,
18 of course, is yes, obviously, because the inventor
19 of the '121 patent was clearly capable of doing so
20 and was a person of ordinary skill in the art. But
21 it required an inventive leap which no one had done
22 -- had made previously.

23 So, you know, you can be capable of
24 something. It doesn't mean you do it just by
25 automatically. And, sorry, I lost my headphone

1 again. Just one second.

2 Can you still hear me?

3 Q Yes.

4 A Okay. So then I think you, you know,
5 if I take it one step further and say would a
6 person of ordinary skills in the art be capable of
7 taking Fiorido's solution specifically and moving
8 it over, that's actually a bigger step to take, a
9 much larger step to take than simply to say can
10 one, is one capable of inserting a thrust-bearing
11 structure and so forth in the right-hand side.

12 Because Fiorido's solution
13 potentially requires rethinking how is this going
14 to be done. As we discussed when we looked at the
15 images for Fiorido, which I will admit I can only
16 judge what I see on the screen and I don't know
17 what was in the mind of the person who drew the
18 image, but it was quite difficult to understand
19 whether the bearings, for example, were carrying
20 axial load or only radial load. It was quite
21 difficult to understand which things were in
22 contact and which things were not in contact or
23 just appeared to be in contact.

24 So, capable? Of course. People are
25 capable. These are not complicated things. This

1 is not like impossible things that someone has all
2 of a sudden done. But it is not something that
3 someone automatically will do just based on, you
4 know, simple assignment, here, go and do this and
5 they just do it.

6 It requires a realization and I think
7 the inventor had one kind of realization that
8 allowed them to do this. But doing what you asked,
9 taking Fiorido's particular design and somehow
10 converting it to something that bears thrust on the
11 movable portion requires more inventive or more
12 steps, more complex steps than doing the former.

13 That's the best I can offer you in
14 the form of an answer.

15 Q Would a person of ordinary skill in
16 the art, prior to the '121 patent, have had a
17 reasonable expectation that they could modify the
18 driving disc, shaft, and bearings disclosed in
19 Fiorido to seat them in the orange portion of the
20 Amazone seed meter shown here?

21 A And by the way, just for clarity
22 here, is this person of ordinary skill in the art
23 someone that meets your assumptions about knowing
24 everything about the prior art?

25 Q Yes.

1 A Okay. So the question I think is
2 would they have a reasonable assumption of success?
3 Is that sort of what you're asking? If they made
4 those --

5 Q Yeah.

6 A -- modifications, or if they -- if
7 they understood that there could be modifications
8 made that could achieve this outcome.

9 It feels a bit contorted, I will have
10 to say, to imagine that someone would take Fiorido
11 to do this. I -- I think that the -- you know,
12 like why take Fiorido to do this. It seems
13 unnecessary to go to Fiorido once you realize that
14 you want to put a thrust-bearing element on the
15 movable portion.

16 Once you have that inventive
17 realization that there is a need and the solution
18 is to have the portions delineated in the way that
19 the patent does and to decide that you need to
20 introduce a thrust-bearing element, and it needs to
21 be supported rotatably, and it needs to have, you
22 know, the ability to do various things, once you
23 realize those things, after that the solution is
24 probably not that complicated, you know. They're
25 using existing knowledge. Right? You're using

1 bearings, you're using shafts, you're using, you
2 know, flanges and bolts and whatnot.

3 So much of that, at least in the
4 first claim, once you made that realization that
5 you need to have this inventive separation, to then
6 go to Fiorido to find a prior art that I can
7 modify, there's no justification for that. There
8 is no -- no reason to go to Fioridos.

9 I mean, I am not, by the way, the
10 POSA that you describe because I don't know all the
11 prior art in this area. Right? I never -- never
12 claimed I did.

13 So -- so I can't necessarily speak to
14 what someone who has done this for their entire
15 life and knows all the prior art going back 150
16 years would have said, but I can tell you that for
17 me, as an engineer, I see no obvious reason why I
18 would, seeing something in Fiorido, as we have
19 discussed, would seek to modify that.

20 It's unnecessary to modify that
21 because I already understand once you tell me here
22 is the inventive idea, let's move this over here,
23 let's put the thrust-bearing element here, let's
24 let it be supported rotatably, I already have a
25 pretty good idea of how I might do that and I don't

1 need to do that by modifying some other prior art.

2 Q Okay. Now I want you to assume that
3 this person of ordinary skill actually looks at
4 Fiorido, the structure there. Would they have a
5 reasonable expectation of success in modifying the
6 driving disc, the shaft, and the bearings such that
7 they could act as a thrust-bearing element on the
8 orange section of the seed meter in the Amazone
9 product?

10 A I'll try to be very specific in my
11 answer. I'm doing my very best to respond to your
12 questions and I appreciate them.

13 The modifications would be
14 significant, but if they made those modifications
15 so that they literally became the kind of structure
16 that you're seeing in the '121 patent, then they
17 would have a reasonable assumption of success.
18 Indeed, it would succeed. But the modifications
19 would be really quite dramatic, and I'm not sure I
20 would refer to them as modifications at that point.

21 Q I want to focus on a section of your
22 Declaration titled Objective Indicia of
23 Non-Obviousness Support Patentability, i.e.,
24 Non-Obviousness (Grounds 3 and 4).

25 In paragraph 92, which is the first

1 paragraph after that heading, you state,
2 (quote as read):

3 Precision has advertised the
4 interchangeability of its vSet
5 devices with seed meters
6 manufactured by Maschio and has
7 provided instructions for
8 retrofitting Maschio's sowing
9 element by replacing the original
10 seed meter of Maschio with a
11 Precision seed meter.

12 Did I read that correctly?

13 A Yes.

14 Q Okay. What is the significance of
15 that to you? Why -- why is that in this section on
16 secondary considerations of non-obviousness?

17 A That's a good question. I don't
18 recall off the top of my head the criteria for
19 non-obviousness. I do know it having to do with
20 something being long considered to be a problem,
21 you know, things that people have sought a solution
22 to, maybe people using the equipment, you know,
23 subsequently or -- or assuming its existence and --
24 and relying on it in some way, and so I think this
25 paragraph is not really making a hugely significant

1 observation but more or less adding to this sense
2 that, you know, Precision is aware of the Maschio
3 seed meters, it's aware of its way of implementing
4 a solution, and it offers its own device to
5 effectively do the same thing.

6 Q Will the fact that a vSet meter is
7 interchangeable onto a Gaspardo seed drill doesn't
8 say anything about the internal --

9 A This is true.

10 Q -- operation; correct?

11 A That's accurate, yes, and I will
12 withdraw any such implications from my previous
13 statement if I may.

14 Q Have you seen any evidence in your
15 work on this case that supports the idea that
16 Maschio Gaspardo has ever commercialized the
17 invention of the '121 patent?

18 A I have no knowledge of that.

19 Q Are you making any allegation here
20 that Precision has copied Maschio Gaspardo?

21 A I do not.

22 MR. BROWN: Let's take a final break.
23 If you give me ten more minutes, I just need to go
24 over my notes, but we might be done.

25 THE VIDEOGRAPHER: We are off the

1 record at 12:58 Central Time.

2 (Off the record.)

3 THE VIDEOGRAPHER: We are back on the
4 record. This is media unit number five. The time
5 is 1:05 Central.

6 MR. BROWN: I have no further
7 questions.

8 MR. CASEY: I have no questions.

9 MR. BROWN: All right, you're free to
10 go.

11 THE REPORTER: What would you like to
12 do about signature?

13 MR. CASEY: How soon, Tara, can you
14 get us the -- the transcript? We want to ask is
15 we're working against an October 11 deadline for
16 the petitioners to file their next document for the
17 Patent and Trademark Office. So we need to get the
18 transcript to us so we can review it and do the
19 errata sheet, and then have that errata sheet be in
20 time for Mr. Brown to consider it.

21 THE VIDEOGRAPHER: Do you want to go
22 off the video record at this point?

23 MR. BROWN: Yes, please.

24 THE VIDEOGRAPHER: We are off the
25 video record at 1:06 Central Time.

1 (Wherein, the taking of the instant
2 deposition ceased at 1:06 PM.)

3 (Deposition to be read and signed by
4 the witness.)
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CERTIFICATE OF REPORTER

I, TARA SCHWAKE, a Registered Professional Reporter and Notary Public within and for the State of Missouri, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.



Notary Public in and for
The State of Missouri

Veritext Legal Solutions
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Cleveland, Ohio 44114
Phone: 216-523-1313

September 30, 2024

To: Kevin Casey, Esq.

Case Name: Precision Planting LLC v. Maschio Gaspardo S.P.A.

Veritext Reference Number: 6905378

Witness: Harry Dankowicz Deposition Date: 9/26/2024

Dear Sir/Madam:

Enclosed please find a deposition transcript. Please have the witness review the transcript and note any changes or corrections on the included errata sheet, indicating the page, line number, change, and the reason for the change. Have the witness' signature notarized and forward the completed page(s) back to us at the Production address shown above, or email to production-midwest@veritext.com.

If the errata is not returned within thirty days of your receipt of this letter, the reading and signing will be deemed waived.

Sincerely,
Production Department

NO NOTARY REQUIRED IN CA

DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 6905378

CASE NAME: Precision Planting LLC v. Maschio Gaspardo S.P.A.

DATE OF DEPOSITION: 9/26/2024

WITNESS' NAME: Harry Dankowicz

In accordance with the Rules of Civil
Procedure, I have read the entire transcript of
my testimony or it has been read to me.

I have made no changes to the testimony
as transcribed by the court reporter.

Date Harry Dankowicz

Sworn to and subscribed before me, a
Notary Public in and for the State and County,
the referenced witness did personally appear
and acknowledge that:

They have read the transcript;

They signed the foregoing Sworn
Statement; and

Their execution of this Statement is of
their free act and deed.

I have affixed my name and official seal

this _____ day of _____, 20____.

Notary Public

Commission Expiration Date

DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 6905378

CASE NAME: Precision Planting LLC v. Maschio Gaspardo S.P.A.

DATE OF DEPOSITION: 9/26/2024

WITNESS' NAME: Harry Dankowicz

In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me.

I have listed my changes on the attached Errata Sheet, listing page and line numbers as well as the reason(s) for the change(s).

I request that these changes be entered as part of the record of my testimony.

I have executed the Errata Sheet, as well as this Certificate, and request and authorize that both be appended to the transcript of my testimony and be incorporated therein.

Date

Harry Dankowicz

Sworn to and subscribed before me, a Notary Public in and for the State and County, the referenced witness did personally appear and acknowledge that:

They have read the transcript;

They have listed all of their corrections in the appended Errata Sheet;

They signed the foregoing Sworn Statement; and

Their execution of this Statement is of their free act and deed.

I have affixed my name and official seal this _____ day of _____, 20____.

Notary Public

Commission Expiration Date

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ERRATA SHEET
VERITEXT LEGAL SOLUTIONS MIDWEST
ASSIGNMENT NO: 6905378

PAGE/LINE(S) / CHANGE /REASON

Date Harry Dankowicz
SUBSCRIBED AND SWORN TO BEFORE ME THIS _____
DAY OF _____, 20____ .

Notary Public

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

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1100 Superior Ave
Suite 1820
Cleveland, Ohio 44114
Phone: 216-523-1313

September 30, 2024

To: Kevin Casey, Esq.

Case Name: Precision Planting LLC v. Maschio Gaspardo S.P.A.

Veritext Reference Number: 6905378

Witness: Harry Dankowicz Deposition Date: 9/26/2024

Dear Sir/Madam:

Enclosed please find a deposition transcript. Please have the witness review the transcript and note any changes or corrections on the included errata sheet, indicating the page, line number, change, and the reason for the change. Have the witness' signature notarized and forward the completed page(s) back to us at the Production address shown above, or email to production-midwest@veritext.com.

If the errata is not returned within thirty days of your receipt of this letter, the reading and signing will be deemed waived.

Sincerely,
Production Department

NO NOTARY REQUIRED IN CA

DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 6905378

CASE NAME: Precision Planting LLC v. Maschio Gaspardo S.P.A.

DATE OF DEPOSITION: 9/26/2024

WITNESS' NAME: Harry Dankowicz

In accordance with the Rules of Civil
Procedure, I have read the entire transcript of
my testimony or it has been read to me.

I have made no changes to the testimony
as transcribed by the court reporter.

Date Harry Dankowicz

Sworn to and subscribed before me, a
Notary Public in and for the State and County,
the referenced witness did personally appear
and acknowledge that:

They have read the transcript;

They signed the foregoing Sworn
Statement; and

Their execution of this Statement is of
their free act and deed.

I have affixed my name and official seal

this _____ day of _____, 20____.

Notary Public

Commission Expiration Date

DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 6905378

CASE NAME: Precision Planting LLC v. Maschio Gaspardo S.P.A.

DATE OF DEPOSITION: 9/26/2024

WITNESS' NAME: Harry Dankowicz

In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me.

I have listed my changes on the attached Errata Sheet, listing page and line numbers as well as the reason(s) for the change(s).

I request that these changes be entered as part of the record of my testimony.

I have executed the Errata Sheet, as well as this Certificate, and request and authorize that both be appended to the transcript of my testimony and be incorporated therein.

10/6/24
Date

Harry Dankowicz
Harry Dankowicz

Sworn to and subscribed before me, a Notary Public in and for the State and County, the referenced witness did personally appear and acknowledge that:

They have read the transcript;

They have listed all of their corrections in the appended Errata Sheet;

They signed the foregoing Sworn Statement; and

Their execution of this Statement is of their free act and deed.

I have affixed my name and official seal this 06 day of Oct, 2024.

Nhan C. Tran
Notary Public

Nhan C. Tran
Notary Public
Montgomery County, MD
My Commission Expires: March 08, 2026

Commission Expiration Date



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ERRATA SHEET**9/26/2024 Deposition of Harry Dankowicz****VERITEXT LEGAL SOLUTIONS MIDWEST****ASSIGNMENT NO.: 6905378**

PAGE	LINE(S)	CHANGE	REASON
11	2	Change “tank’s” to “tanks are”	Clarification
18	6	Change “I think so” to “I don’t think so”	Clarification and consistency with line 22
23	21	Add “of” before “contexts”	Clarification
23	23	Change “Precision” to “precision”	“precision” here does not refer to the company
31	12	Change “where” to “wear”	Spelling error
47	3	Change “statement” to “statements”	Clarification
54	23 & 25	Change “nons” to “nonce”	Spelling error
55	3	Delete “a” before “language”	Clarification
55	6	Change “nons” to “nonce”	Spelling error
60	14	Change “is” to “as”	Spelling error
66	14	Change “orthogonal” to “octagonal”	Clarification
74	7	Change “element” to “plate”	Clarification
75	5	Insert comma after “element”	Clarification
75	8	Insert comma after “shaft”	Clarification
78	6	Change “is” to “it’s”	Clarification
84	1 & 8	Change “thrust-bearing” to “thrust bearing”	Clarification

84	10 & 12	Change "radial-bearing" to "radial bearing"	Clarification
84	23	Add "of" after "types"	Clarification
97	21-22	Change "one's self" to "oneself"	Spelling error
103	10	Change "inconsistently" to "consistently"	Clarification
103	19	Change "'movable' relative to" to "'movable relative to'"	Clarification
107	19	Change "as" to "has"	Spelling error
110	21	Change "understand" to "understand it"	Clarification
128	23	Change "34" to "13"	Clarification
132	21	Change "organization" to "orange"	Clarification
140	17	Change "dowell" to "dowel"	Spelling error
146	8	Change "Fioridos" to "Fiorido"	Spelling error

Date

10/6/24

Harry Dankowicz



SUBSCRIBED AND SWORN TO
BEFORE ME THIS 06, DAY
OF October, 2024.

Notary Public

Nhan C. Tran
Notary Public
Montgomery County, MD
My Commission Expires: March 08, 2026

Commission Expiration Date

