

Page 1

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

PROVISUR TECHNOLOGIES, INC.,
Petitioner,
V.
WEBER MASCHINENBAU GMBH BREIDENBACH,
Patent Owner.

Case IPR2024-00235

Patent No. 8,529,321

Zoom streaming deposition of
JOHN M. COLLINS, Jr., Ph.D., called for examination by
counsel for the Patent Owner, on Wednesday, July 31,
2024, commencing at 12:02 p.m. Eastern Daylight Time,
reported by Michele E. French, RPR, RMR, CSR-3091, and
Notary Public for the State of Michigan, on behalf of
Digital Evidence Group.

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TABLE OF CONTENTS

2

WITNESS

PAGE

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JOHN M. COLLINS, JR., Ph.D.

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Examination by Mr. Hart

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14 (REPORTER'S NOTE: All quotations from exhibits are
15 reflected in the manner in which they were read into
16 the record and do not necessarily denote an exact
17 quote from the document.)

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Page 4

1 Wednesday, July 31, 2024

2 12:02 p.m. EDT

3 * * * * *

4 JOHN M. COLLINS, JR., Ph.D.,

5 was thereupon called as a witness herein, and after
6 having first been duly sworn to testify to the truth,
7 the whole truth and nothing but the truth, was
8 examined and testified as follows:

9 EXAMINATION

10 BY MR. HART:

11 Q Good morning, Dr. Collins. It's nice to --

12 A Good morning.

13 Q -- speak with you again.

14 Can you please state your full name,
15 just to get us started.

16 A Sure. My name is John Maloy Collins,
17 Junior.

18 Q Okay. And we just spoke a few weeks ago on
19 another related matter, so I won't retread too much
20 ground here, but I do just want to reiterate some of
21 the ground rules for the court reporter, for her
22 benefit.

1 So it's my job to ask clear questions.
2 If you don't understand a question, please let me know
3 so I can rephrase or clarify the question.

4 The court reporter can only capture one
5 person speaking at a time. I will do my best not to
6 speak over you, and I would just ask you to attempt to
7 not speak over me.

8 To this end, if I do begin asking a
9 follow-up question before you have finished your
10 answer, please let me know so I can let you finish
11 that prior answer. Is that fair?

12 A Yes.

13 Q Is there any reason, medical or otherwise,
14 that you would be unable to answer my questions fully
15 and truthfully today?

16 A Not that I'm aware of, no.

17 Q All right. Very good.

18 Do you have clean copies of the record
19 with you today?

20 A Excuse me. I do have a laptop here with --
21 a loner laptop with clean copies of the exhibits --

22 Q All right. Very good.

1 A -- to my knowledge.

2 Q Very good. We're going to spend most of the
3 day with your Declaration submitted in this matter,
4 Exhibit 1003. Can I have you hold that up.

5 And while you're doing that, I believe
6 last time you just used your local clean copy to
7 answer my questions. Is that your preference today,
8 or would you like to use the screen share
9 functionality?

10 A Probably a combination of both. I think --

11 Q Okay.

12 A -- it would be helpful for me to make sure
13 it's -- I'll reference mine primarily, but using your
14 screen share to know where we're looking would be
15 helpful.

16 Q Okay. Great. I will -- how about this? If
17 it -- if it would be helpful for me to pull that up on
18 the screen, let me know; otherwise, I will just tell
19 you where I will -- where I want you to refer in your
20 Declaration, and ask my question. I'm happy to use
21 screen share when it's helpful.

22 A Okay.

1 Q All right. To kick us off, can I have you
2 turn to page 40 of your Declaration, Exhibit 1003.

3 A And just for reference, when you say page,
4 is it the page number of the PDF or the actual page
5 number?

6 Q Those do not match. The branded page. So
7 page -- branded page 40. It would be PDF page 46.

8 A Okay. I'm there.

9 Q All right. Very good. Starting on this
10 page in your Declaration, you opine that the reference
11 "Young," which is Exhibit 1004, anticipates Claims 1
12 through 6, 8, 10, and 14 through 16 of the '321
13 patent; is that right?

14 A That's correct.

15 Q Okay. I'd like to explore these opinions on
16 a few different issues.

17 Can I have you scroll down to branded
18 page 44 of your Declaration, which is PDF page 50?

19 A I'm there.

20 Q All right. Here in paragraph 103, you state
21 that, "Young discloses a measurement device for
22 automatic determination of the thickness of the fat

1 cover, wherein the determination of the thickness of
2 the fat cover takes place in a contactless manner."

3 Do you see that?

4 A I do.

5 Q What do you mean by "fat cover"?

6 A It's the layer of fat that covers over the
7 meat.

8 Q Okay. Is this -- with respect to Young, is
9 this the fat that will ultimately be cut from the meat
10 product by Young's system?

11 A Young's system cuts a portion of that fat
12 cover so that it leaves a layer of fat over the --
13 over the meat product and removes the layer above
14 that -- above that portion.

15 Q Okay. And so when you use the phrase "fat
16 cover" in paragraph 103, that captures both the fat
17 that is ultimately removed and fat that is retained
18 after Young performs its cutting operation; is that
19 right?

20 A I believe, yes. So the fat cover is the
21 total amount of fat over the -- over the meat.

22 Q Can you scroll down to branded page 48, PDF

1 page 54, of your Declaration.

2 A I'm there.

3 Q All right. And here you contend that
4 "Young" also "discloses a cutting device coupled to
5 the measurement device for automatic separation of the
6 fat cover from the flesh component in dependence on
7 the thickness determined by the measurement device."

8 Do you see that?

9 A Yes, I do.

10 Q So your interpretation of Young is that it
11 calculates the fat thickness of a meat product and
12 then uses that measurement to determine how much fat
13 is cut off the meat; is that right?

14 MR. SHEELER: Objection, form, vague.

15 THE WITNESS: Could you repeat the
16 question, please?

17 BY MR. HART:

18 Q Sure. Is it your interpretation of Young
19 that it teaches calculating the fat thickness of a
20 meat product and then using that calculation to
21 determine how much fat is cut off the meat?

22 MR. SHEELER: Same objection.

1 THE WITNESS: I think -- I'm just
2 hesitating on the words "calculating the fat
3 thickness" because it -- basically, the visual system
4 sees the fat that's there, and then there's a
5 calculation that determines the height at which it's
6 going to cut the fat off the -- off of the meat.

7 BY MR. HART:

8 Q Okay. Was the first time I wished I had the
9 realtime. I'm sure it won't be the last, but we're
10 having some technical difficulties today.

11 What hardware does Young use to
12 determine the height of the fat in that process you
13 just described?

14 A It uses a series of cameras.

15 Q Okay.

16 A Well, that's the -- that's the example in
17 the embodiment.

18 Q Which cameras does it use?

19 A Let me pull up Young, then.

20 From the embodiment, it describes three
21 cameras: the top plan camera, the end view camera,
22 and the fat line camera.

1 Q Let's start with the top plan camera. Is
2 that top plan camera 196 in Young that you are
3 referencing?

4 A In the block diagram, it's called 196.

5 Q Okay.

6 A But I think it's 140 in the -- I think the
7 cameras are 140 in the -- in the illustration, at
8 Figure 1.

9 Q Okay. I believe those may be lights, 140,
10 but --

11 A Oh. You're -- you're correct. I was wrong.

12 Q Okay. Very good. Can you -- can you help
13 me understand. What is the view of top plan camera
14 196 with respect to the meat product in Young?

15 MR. SHEELER: Objection, form.

16 THE WITNESS: Same kind of -- if you
17 think of the space that the meat sits on, you can
18 think of it as Cartesian coordinates X, Y, and Z. So
19 X would be along the motion of the meat, Y would be
20 transverse to that motion of meat, and Z would be a
21 vertical. So the top plan would refer to a top view,
22 so it would be looking down on the meat.

1 BY MR. HART:

2 Q I see. And if we turn to end view camera
3 197, that I believe you mentioned as the second camera
4 in this Young system, what is its point of view with
5 respect to the meat product?

6 A So the end view would be the -- would be the
7 view looking from the X axis, the end, so it's along
8 the direction of travel.

9 Q And what information does the end view
10 camera 197 obtain that is unique and not ascertainable
11 from top plan camera 196?

12 MR. SHEELER: Objection, form.

13 THE WITNESS: As it says, it sees the
14 product from the front end.

15 BY MR. HART:

16 Q Okay. Can end view camera 197 obtain
17 information in the -- on the Z axis that you described
18 earlier?

19 A So 197 is the end view?

20 Q Correct, yes.

21 A Yeah. Yes. So that would include
22 information, so it's basically looking at the Y-Z

1 plane.

2 Q Okay. Let's turn to the third camera you
3 mentioned, the fat line camera. I believe that's 198
4 in Young.

5 What view does the fat line camera 198
6 provide?

7 A That's the view from the side, so that would
8 be the view in the X-Z plane.

9 Q And what information does -- is obtained by
10 that fat line camera 198? Does it have a specific
11 purpose in Young's system?

12 MR. SHEELER: Objection, form.

13 THE WITNESS: It sees the side of the --
14 of the product.

15 BY MR. HART:

16 Q Do you know why camera 198 is referred to as
17 fat line camera if its purpose is just to see the side
18 of the meat product?

19 MR. SHEELER: Objection, form, vague.

20 THE WITNESS: Because there's a depth
21 view. It shows you a line that separates the fat from
22 the meat.

1 BY MR. HART:

2 Q And is that line viewable from the side of
3 the meat product?

4 A Yes, it is.

5 Q Can I have you scroll up to paragraph 105 in
6 your Declaration, which begins on PDF page 52, branded
7 page 46, of Exhibit 1003.

8 A I'm sorry. I was scrolling over to it.
9 What page, again?

10 Q So it's branded page 46, PDF page 52.

11 A I'm there.

12 Q All right. The last sentence begins -- that
13 begins on branded page 46 says, "After collecting the
14 image data Young's imaging system 190 generates fat,
15 lean, and edge lines of the meat product...."

16 Do you see that?

17 A I do.

18 Q Is there a fat line that is generated
19 distinct from a lean line that is generated by Young's
20 system?

21 MR. SHEELER: Objection, form.

22 THE WITNESS: I don't -- I have to go

1 back and check. I think what I probably should have
2 done is put not a comma but a slash, a fat/lean line,
3 so it's the line between the fat and the lean.

4 BY MR. HART:

5 Q Okay. I have seen references throughout
6 your Declaration to a fat/lean separation line. Is
7 that what you were referring to in this sentence?

8 A I believe so.

9 Q Okay. All right. In paragraph 106, that
10 starts on that next page of your Declaration, you
11 state that -- in very first sentence, "Young imaging
12 system 190 makes an automatic determination of the
13 thickness of the fat cover through analysis" of a --
14 I'm sorry, "of 'a backbone line and a fat/lean
15 separation line on the side of the meat.'"

16 Do you see that?

17 A I do.

18 Q In support, you cite Young in column 18,
19 lines 33 to 45; and Young at column 4, lines 26 to 30.

20 Is it your opinion that these portions
21 of Young actually described determining the fat
22 thickness by analyzing a backbone line and a fat/lean

1 separation line?

2 MR. SHEELER: Objection, form.

3 THE WITNESS: This would be an example,
4 if you could help me with a screen share.

5 BY MR. HART:

6 Q Sure.

7 A So if you wouldn't mind putting up in my
8 report paragraph 106, and then I can, on my machine,
9 go look at the Young reference.

10 Q Sure. I should have paragraph 106 up on the
11 screen share. Is that large enough?

12 A It was 10 years ago.

13 Q Let me see if I can zoom in here. I might
14 have to resize it.

15 A That's fine.

16 Q Is that better?

17 A Yes, thank you. That's much better.

18 And I was reviewing that section of
19 Young. Let me see the next one.

20 Can you repeat your question, please.

21 Q I would normally read it back from the
22 realtime.

1 Yes. Is it your position that either of
2 these portions of Young actually described determining
3 the fat thickness by analyzing a backbone line and the
4 fat/lean separation line?

5 MR. SHEELER: Objection, form.

6 THE WITNESS: Yeah, I believe those
7 sections speak for themselves and support my position.

8 BY MR. HART:

9 Q Okay. Where in the column 18 excerpt does
10 it describe using a backbone line to determine the fat
11 thickness?

12 MR. SHEELER: Objection, form.

13 MR. HART: Keaton, what was -- what was
14 the basis of that objection, to make sure the record
15 is clear?

16 MR. SHEELER: Form.

17 MR. HART: Yeah. Right. What was wrong
18 with the form of my question, so I can ask if I --
19 reask it if I need to?

20 MR. SHEELER: I believe that he made his
21 answer clear, and your question is asking -- is
22 unclear on how it's asking him to follow up.

1 MR. HART: Yeah, I'll let that previous
2 question stand, then.

3 BY MR. HART:

4 Q And Dr. Collins, just to make sure the
5 back-and-forth didn't throw off our flow, did you
6 understand my question, and are you still reviewing
7 that portion of column 18?

8 A Yeah, I'm just reviewing that portion to
9 make sure I understand it.

10 Q Got it. Thank you.

11 A Yeah, I can definitely see the support in
12 those sections for that -- for that statement. I'm
13 happy to read those sections, if you wish.

14 Q Well, I don't think anybody needs you to
15 read those into the record.

16 Can you explain to me where in this
17 column 18 excerpt from Young that you cited it
18 discusses the backbone line?

19 A Well, that was discussed in column 4.

20 Q And does the column 4 excerpt that you've
21 cited discuss using the backbone line in conjunction
22 with the fat/lean separation line to determine the

1 thickness of fat?

2 A Again, I'm happy to -- I can -- I'm happy to
3 read the sections in column 4. Again, it's -- the
4 patent speaks for itself. I don't understand what
5 your question is, because there is an analysis that's
6 described in the -- in the specification, in those
7 sections.

8 Q Well, you made a statement characterizing
9 Young's teachings. You cited two places. I'm unable
10 to follow the logic. Can you just more broadly
11 explain to me how in Young's system the backbone line
12 is utilized to determine the thickness of a fat cover?

13 MR. SHEELER: Objection, cumulative.

14 MR. HART: What was cumulative about
15 that, Keaton?

16 MR. SHEELER: He gave you his answer.
17 He has explained his rationale. You aren't able to
18 follow his answer, but asking the same question is
19 cumulative.

20 MR. HART: I did not ask the same
21 question. I asked a distinct question that was
22 pointed and asked for one answer.

1 MR. SHEELER: I think your question was
2 substantively the same and cumulative.

3 MR. HART: Okay.

4 THE WITNESS: Yeah, you know, I'm having
5 trouble trying to figure out how to answer your
6 question other than just reading what the
7 specification says in those two references.

8 BY MR. HART:

9 Q Well, I'm focused on a single reference,
10 Young, right now. This is an anticipation ground.
11 And my question is just how is the backbone line used
12 in the Young system to determine the thickness of the
13 fat cover?

14 A Well, first, it's not what that sentence
15 states. Right? That sentence there states, "Young
16 imaging system 190 makes an automatic determination of
17 the thickness of the fat cover through an analysis
18 of" -- then the quote from the specification -- "a
19 backbone line and a fat/lean separation line on the
20 side of meat." And that's -- those -- that's what is
21 described in those two sections of the specification.

22 Q How is the backbone line used in that

1 analysis?

2 A I believe the backbone line is a line that's
3 computed or calculated -- or determined by the vision
4 system and calculated.

5 Q And once it exists, once it is calculated,
6 how is it used in the analysis you are describing in
7 paragraph 106 of your Declaration?

8 A Well, the backbone line is used to adjust
9 the lateral motion of the knife to cut the -- in the
10 case of the loin, to cut underneath the scribe cut.

11 Q So it's used to guide the knife in Young's
12 system?

13 A That's correct. The back -- the backbone
14 line is the line that the knife follows to cut
15 through, again, underneath where the scribe cut
16 happens.

17 Q And we haven't yet gone to the cutting
18 limitation in your analysis, in Exhibit 1003, so I
19 want to focus just on what you're discussing here in
20 paragraph 106, the determination of fat thickness.
21 How is the backbone line used, if at all, to determine
22 the fat thickness?

1 MR. SHEELER: Objection, cumulative.

2 THE WITNESS: I'd have to go back and
3 kind of review the specification to be more specific
4 about how the -- how the backbone line is used in
5 characterizing the fat thickness.

6 BY MR. HART:

7 Q Okay. Do you believe the answer lies
8 somewhere in Young, somewhere other than these two
9 portions of Young that you have cited in paragraph
10 106?

11 A Well, again, I don't agree with the -- with
12 the format or the basis of your question, that the
13 backbone line alone is used in the analysis. The
14 quote stands that it's -- the analysis includes the
15 fat/lean separation line.

16 Q To be clear, I'm not asking you how the
17 backbone line is used in isolation. I'm just asking
18 you more generally how is the backbone line used at
19 all in this analysis that you are describing in the
20 first sentence in paragraph 106?

21 A Well...yeah, I think those sections support
22 the balance of the specification. I can give you an

1 example.

2 In the -- in the Abstract, it says, "The
3 combination of the lateral displacement and varying
4 the separation between the sides of the blades enables
5 the sides of the knife blade to follow separate
6 profiles. The loin separation apparatus generates
7 customized cutting profiles and/or modifies standard
8 cutting profiles for the loin knife assembly, as well
9 as for the scribe saw assembly which may...be included
10 on the apparatus, based upon the particular
11 dimensions, contours, et cetera, of a specific side of
12 meat."

13 So the backbone line is a characteristic
14 of the -- of the meat product, and that can be used in
15 characterizing it for their standard profiles.

16 Q Did that portion you just read say anything
17 about fat thickness?

18 MR. SHEELER: Objection, form.

19 THE WITNESS: Did that word show up
20 or...? It's describing how the specification works to
21 remove fat from the product.

22 BY MR. HART:

1 Q Sure. You know, you keep referring to the
2 cutting process, but I -- my questions are pre cut;
3 right? It's questions about how does Young determine
4 the thickness of fat. I did not hear you read
5 anything about determining the thickness of fat in
6 that portion of the Abstract you read into the record,
7 and I'm trying to understand how Young determines the
8 thickness of the fat cover.

9 In paragraph 106 you state that it
10 analyzes "a backbone line and a fat/lean separation
11 line" in order to determine the thickness of a fat
12 cover.

13 A Let me reread the section of the Abstract
14 that -- I'll point you. Let me explain it again.

15 It says, "The loin separation apparatus
16 generates customized cutting profiles...." And those
17 customized cutting profiles are to remove a layer of
18 fat. That's -- that's the purpose and -- as well as
19 the scribe saw, to be included, "based upon particular
20 dimensions and contours, et cetera, of a specific side
21 of meat."

22 So, basically, the invention describes

1 visual representation identifying characteristics,
2 such as the backbone line, and having -- it's
3 available either standard or -- modified or standard
4 cutting profiles. And those cutting profiles are sent
5 to the cutting system to cut the fat at the
6 predetermined line.

7 Q In the next sentence of paragraph 106 in
8 your Declaration, you state, "The fat lean separation
9 line calculated by Young's imaging system 190 fat line
10 camera 198 shows the interface that between fat and
11 lean on a meat product."

12 Do you see that?

13 A I do. Probably the word "that" shouldn't
14 have been there, or "that is" is missing.

15 Q Is it the fat/lean camera 198 in Young's
16 system that determines the fat/lean separation line?

17 A It provides one view of where there's an
18 interface between the fat and the lean part of the
19 meat, and that's from the side view. But, again,
20 these are three-dimensional objects. They're not
21 two-dimensional objects, which is why there are three
22 sets of cameras rather than just one.

1 Q And if we're thinking just about the
2 fat/lean separation line, is it -- does Young's system
3 rely only on fat line camera 198 to arrive at that
4 fat/lean separation line?

5 MR. SHEELER: Objection, form.

6 THE WITNESS: Yeah, the -- I think the
7 premise of your question is off in that, as I
8 mentioned, that these are three-dimensional products.

9 So by way of example, if you look at
10 Figure 10c in Young, there is a fat/lean separation
11 line 6. So that's the line that separates the two.

12 BY MR. HART:

13 Q Does Young's system identify that line using
14 only fat line camera 198?

15 MR. SHEELER: Objection, form.

16 THE WITNESS: It identifies where that
17 line basically is -- would be viewable from the side.

18 BY MR. HART:

19 Q Does it use any cameras other than fat/lean
20 camera 198 to identify that fat/lean separation line
21 that we see in Figure 10c?

22 A It uses all of the cameras.

1 Q How does it use the other cameras to
2 identify that fat/lean separation line?

3 A Again, this is a -- this is a
4 three-dimensional product that's not regular, and all
5 the views basically are needed to be able to describe
6 that complex three-dimensional shape, so that the
7 knife will be able to cut at that -- at that line,
8 offset by whatever desired thickness there is, on that
9 three-dimensional shape.

10 Q Going back to your statement in paragraph
11 106, you said, "The fat lean separation line
12 calculated by Young's imaging system 190 fat line
13 camera 198...."

14 Do you describe how the other cameras
15 are used to determine that fat line separation -- I'm
16 sorry, fat/lean separation line anywhere else?

17 A I don't recall. I'd have to go back and
18 read my report. But it's certainly what's described
19 in the patent.

20 Q Later in paragraph 106, you say, "After this
21 line is calculated, Young may calculate the height or
22 width of the fat covering, the lean, and the loin."

1 Do you see that?

2 A Yeah.

3 Q What does it mean to "calculate the height
4 or width of the fat covering"?

5 A It's pretty straightforward. It's
6 calculating the distance between the fat/lean line and
7 the edge line, which is the outside of the product.

8 Q So looking in the X direction, toward the
9 loin itself, where we can see the fat/lean separation
10 line like in Figure 10c, the width and the height of
11 the fat covering is what is needed to represent the
12 yellow area in your Figure 10c; is that right?

13 MR. SHEELER: Objection, form.

14 THE WITNESS: I think that's fair.

15 BY MR. HART:

16 Q And just to make sure the record is clear,
17 the yellow area is depicted on page 49, PDF page 55,
18 of your exhibit -- of your Declaration, Exhibit 1003.

19 When you say, "...Young may calculate
20 the height or width of the fat covering...", is it
21 your position that Young simply could calculate those
22 dimensions, or do you contend that Young actually does

1 teach making those calculations?

2 A I believe Young teaches those, making those
3 calculations.

4 Q Where in Young does it describe calculating
5 the width and height of the fat covering?

6 A Could you repeat your question, please.

7 THE REPORTER: Would you like me to read
8 it back?

9 MR. HART: That would be great. Thank
10 you, Michele.

11 (Record read as requested.)

12 THE WITNESS: Yeah, there are a number
13 of places. Let's see. For example -- well, it's
14 certainly described where I referenced there, but also
15 column 24, starting at line 10, "An additional step is
16 performed in routine 240 before returning to routine
17 230. In block 258, the height, width, and length of
18 the pork side is calculated using the known values
19 calculated in the aforementioned image processing
20 steps, as well as knowing the positions of stop 305
21 and platen 20, which indicates the position of the
22 opposite end of the pork side. It will also be

1 preferable to compare the calculated widths obtained
2 from the top and end view images for error detection."

3 That's one example. Yeah, and that's
4 referenced in figure -- figure at the bottom, Figure
5 13.

6 Yeah, in a number of places I can
7 reference, they talk about the automatic adjustment
8 for the -- for the height of the -- of the saw, which
9 represents the thickness of the fat that has to be
10 cut. And that's referenced in a number of different
11 places in the specification.

12 As I said, I can point you to a number
13 of places in the specification that talk about
14 adjusting the saw for the -- to cut it at the
15 appropriate height or width of the fat line.

16 BY MR. HART:

17 Q I'm using visual cues to detect that you're
18 done with your answer, but I do just want to make
19 sure.

20 A Yes.

21 Q Are you done answering my question?

22 A Yes, I am.

1 Q All right. Very good.

2 If we scroll down to paragraph 109 in
3 your Declaration. In paragraph 109 through paragraph
4 111, you discuss Young's cutting device, which you
5 contend separates the fat from flesh, in dependence on
6 thickness of the fat cover. Is that accurate?

7 A Well, there's more than that in those
8 paragraphs, but that generally -- that's generally
9 discussed.

10 Q In paragraph 109, right in the middle of
11 this paragraph, you note that, "...as shown below in
12 Young Figure 10c, which shows" --

13 A Sorry. Where are you reading from?

14 Q I'm right in the middle of paragraph 109 on
15 PDF page 54. Let me highlight here what I'm --

16 A Yep, I see it.

17 Q "...as shown below in Young Figure 10c which
18 shows that knife assembly 100 cuts along the fat/lean
19 separation line 6, to remove the belly and associated
20 fat cover."

21 Do you see that?

22 A I do.

1 Q I'm going to scroll down here on the share
2 screen to that annotated Figure 10c. Can you see
3 that?

4 A Yes.

5 Q Is this cut along the fat/lean separation
6 line the cut that you have focused on in your mapping
7 of limitation 1[B] (indicating)?

8 A I don't understand your question.

9 Q Sure. So I believe you're describing a cut
10 that Young's system makes along this fat/lean
11 separation line as the cut that satisfies limitation
12 1[B]; am I correct?

13 A Well, the cut is actually not along the
14 separation line. The cut is offset from that, but....

15 Q Understood, and I will get to the offset in
16 just a few moments. But just to focus the
17 conversation, have you identified any cuts other than
18 the cut that is offset from the fat/lean separation
19 line relevant to your mapping of limitation 1[B]?

20 A Yeah, I think the cut is from the U-shaped
21 blade, which cuts a number of things.

22 Q Is it the U-shaped blade that follows the

1 fat/lean separation line slightly offset?

2 A And it cuts at the belly.

3 Q Are there any other cuts that you have
4 discussed relevant to your opinion regarding
5 limitation 1[B]?

6 A I don't believe so.

7 Q Okay. Let's talk about this offset. You
8 note here in paragraph 109 that a specific amount of
9 fat can be retained, and you identified a 0.1 inch
10 setting that allows .1 inches of fat to be retained
11 beyond the fat/lean separation line.

12 Do you see that?

13 A I do.

14 Q And have I described that accurately, that
15 that value is the amount of fat that is retained after
16 the cut?

17 A That's the goal, yes.

18 Q Is that offset value something the user of
19 Young's system sets?

20 A I believe so, yes.

21 Q And can they change that value to retain
22 more or less fat beyond the fat/lean separation line?

1 A I believe so.

2 Q Going back to Figure 10c, am I correct that
3 the blade will cut along the fat/lean separation line
4 you have indicated here offset by that specific value
5 we were just discussing?

6 A I just wanted to check something.

7 Could you repeat the question, please.

8 MR. HART: Michele, would you mind
9 reading that back.

10 (Record read as requested.)

11 THE WITNESS: Yeah, I just wanted to
12 double-check. So in column 20, line 55, it describes
13 the lines 3b, 3a, and 4. So that -- those lines are
14 the lines that the U-shaped blade cuts. And where
15 there's the fat, it provides that -- that layer of fat
16 on the -- on the meat, at 3b and 4.

17 BY MR. HART:

18 Q And that layer of fat that is retained is
19 dictated by the value that the user inputs; correct?

20 MR. SHEELER: Objection, cumulative.

21 THE WITNESS: That's my understanding.

22 BY MR. HART:

1 Q If the meat product depicted in Figure 10c
2 had an extra two inches of fat to the right, beyond
3 what we're seeing here in Figure 10c, would the cut
4 line change in Young's system?

5 MR. SHEELER: Objection to form.

6 THE WITNESS: Well, this is an
7 illustration. There are no dimensions here.

8 BY MR. HART:

9 Q If we're just considering the dimensions
10 that we can see in Figure 10c, would the cut line
11 change as a result of additional fat cover thickness?

12 A Well, again, this is an illustration. It's
13 not a dimension drawing, so I don't know what the
14 thickness is. But the whole idea here is that you
15 want to remove the layer of fat and leave a certain
16 amount behind. So the amount of fat will increase if
17 the -- if the total amount of the -- amount of fat
18 removed is going to increase if there's more fat, but
19 the cut line is relative to the lean piece, and that
20 won't change.

21 MR. HART: Before I get into this next
22 section of questions -- we are about an hour in -- how

1 about a quick break here?

2 MR. SHEELER: Sure.

3 THE WITNESS: Sure, makes sense.

4 MR. HART: Ten minutes okay on your end.

5 THE WITNESS: Yep.

6 MR. HART: Okay.

7 (Recess - 12:57 p.m. to 1:10 p.m.)

8 BY MR. HART:

9 Q All right. Welcome back, Dr. Collins.

10 I am going to share my screen again.

11 All right. Can you see this portion of your

12 Declaration in paragraph 111?

13 Are you -- are you there with me,

14 Dr. Collins? Sorry.

15 A Yes, I am.

16 Q Okay.

17 A I was just reading it.

18 Q Very good.

19 A Reading the highlighted portion.

20 Q Okay. I'm going to read the highlighted

21 portion into the record so I can then ask you a

22 question about it.

1 So in paragraph 111, you state
2 "Controller 172 receives information about the fat
3 width and fat/lean separation line from imaging system
4 190 and 'uses this information to dynamically modify
5 the cutting profile of the loin knife assembly 100 so
6 that the assembly follows a fixed distance from the
7 separation line to provide the optimum fat cover for
8 the loin.'"

9 Do you see that?

10 A I do.

11 Q And you cite Young, column 18, lines 36 to
12 40, for that quote.

13 Is fat width the same as fat cover in
14 this sentence?

15 MR. SHEELER: Objection, form.

16 THE WITNESS: The fat width would be the
17 height of the fat cover.

18 BY MR. HART:

19 Q In which dimension?

20 A Typically that's normal to the -- whatever
21 the surface of the meat is.

22 Q Okay. Is fat width in this sentence the

1 same as the thickness of the fat from the fat/lean
2 separation line to the edge of the meat product?

3 A Yes, that would be the same in my view.

4 Q How do you interpret Young's reference to
5 "optimum fat cover for the loin" in this quoted
6 portion here? Is that the fat that is removed from
7 the meat product or the fat that is retained after the
8 cutting?

9 A It would be the retained fat.

10 Q So here the optimum fat cover for the loin
11 is a portion of the original fat that existed before
12 the cut?

13 A Certainly.

14 Q Okay. Let's switch gears a bit. I'm going
15 to scroll down to paragraph 165 in your Declaration.
16 You should see that on the shared screen here. It's
17 in reference to Dependent Claim 16.

18 A What PDF?

19 Q PDF page 72.

20 A I see that.

21 Q Dependent Claim 16 recites, "determining the
22 thickness of the fat cover during a transport movement

1 of the meat product."

2 And you state in paragraph 164 that,
3 "Young discloses determining the thickness of the fat
4 cover during a transport movement of the meat
5 product."

6 Do you see that?

7 A I do.

8 Q Okay. In paragraph 165, you describe Young
9 moving the meat product through "...a conveying
10 means...which conveys the meat product through..."
11 Young's imaging system 190; is that correct?

12 A It's correct.

13 Q In your second-to-the-last sentence in this
14 paragraph 165, you state, "During this transport
15 movement, Young's imaging system 190 captures image
16 data of the meat product using top plain camera 196,
17 end view camera 197, and fat line camera 198."

18 Does Young teach imaging the meat with
19 these cameras while the meat is actually moving along
20 the conveyor system?

21 A Yes, that's my understanding.

22 Q Okay. Where in Young does it describe

1 moving product during the imaging?

2 A Yeah, I'm trying to find exactly where it
3 says that, but one area that I think does a nice job
4 is column 18, line -- about 33. Do you want me to
5 read it?

6 You're on mute, I believe.

7 Q Right. I'm trying to hide my trail mix
8 consumption. Sorry about that.

9 Yes, please. Please read the portion
10 that you're referring to that discusses moving meat
11 product while imaging.

12 A So, "The third imaging camera," the
13 "fat/lean separation line camera 198, is primarily
14 used to provide dynamic (real-time) image data of the
15 fat/lean separation line for the pork side proximate
16 the backbone. Controller 172 uses this information to
17 dynamically modify the cutting profile of loin knife
18 assembly 100 so that the assembly follows a fixed
19 distance from the separation line to provide the
20 optimum fat cover for the loin. As shown in Figure 1,
21 camera 198 is preferably positioned proximate loin
22 knife assembly 100 facing inwardly. Preferably, the

1 field of view of camera 198 is adjusted to focus on
2 the position of the fat/lean separation line within a
3 relatively small area so that the image data may be
4 coordinated with the small incremental movements of
5 the platen."

6 Q All right. Let's transition a bit to Ground
7 2, which begins on -- oh, the same page we were
8 already on. So beginning on branded page 66, PDF page
9 72 of your Declaration, you introduce Ground 2, which
10 is an obviousness theory combining Young and Norrie.
11 Do you see that?

12 A I do.

13 Q What role does Norrie serve in the proposed
14 combination set forth in Ground 2?

15 A Well, I think Norrie, frankly, is redundant
16 of what's already disclosed in Young, that everything
17 is disclosed in Young. I understand that there's an
18 argument that Young doesn't disclose the fat
19 thickness, I think, which I don't -- which I don't
20 agree with at all. But it's very clear that Norrie --
21 Norrie explicitly describes the fat thickness,
22 measuring the fat thickness.

1 Q What specific components from Norrie are you
2 proposing adding to the Young system in Ground 2?

3 MR. SHEELER: Objection, form.

4 THE WITNESS: Yeah, it's more of
5 functionality. So you could add another camera or you
6 could use the existing cameras. And it's more the
7 analysis that Norrie, you know, explicitly calls out
8 using those -- the image data to compute the fat
9 thickness, which, again, I believe Young does as well,
10 but Norrie is more explicit about it.

11 BY MR. HART:

12 Q Which camera do you propose adding from
13 Norrie into Young's system?

14 A Well, the Norrie camera is from the -- from
15 the side. So if you were to add a camera, you would
16 add a camera at the same position relative to the
17 product, which would be a camera looking at the X-Z
18 plane, which is the fat line camera in Young.

19 And, again, I'm not sure if you need to
20 add a camera or just modify the algorithm to be
21 explicit in providing a dimension of the -- of the fat
22 thickness, which, again, I believe Young does anyway.

1 Q Let's explore that a little bit. Is there
2 anything special about Norrie's camera that Young's
3 fat line camera 198 is incapable of doing?

4 MR. SHEELER: Objection, form.

5 BY MR. HART:

6 Q I can -- I can rephrase to be a little
7 clearer.

8 Is there any technical reason to add
9 Norrie's camera 54 to Young's system?

10 A I don't see why. I think they could use the
11 existing cameras of Young.

12 Q And that -- specifically, that would be
13 Young's fat line camera 198 that would be used to
14 serve the same purpose as Norrie's camera?

15 A Yeah, I'd have to go back and check. I
16 think -- I have to go back and check to see if Norrie
17 uses the overall height of the -- of the product in
18 the analysis. I'd have to go back and check.

19 Q Okay. Can you check that? I want to just
20 make sure I understand what you're -- what you're
21 theory is here.

22 A Yeah, my review of Norrie, I don't believe

Page 44

1 there needs to be a different camera than the -- than
2 the Young fat line camera.

3 Q I just realized I'm sharing my screen as I'm
4 scrolling through your Declaration here.

5 All right. Let's turn to page --
6 branded page 71, PDF page 77, in your Declaration.
7 Just let me know when you're there.

8 A I'm there.

9 Q All right. On this page, you begin Ground
10 3, which is the final ground you address in Exhibit
11 1003. It's a combination of the Johnson reference
12 with Belk; is that correct?

13 A That's correct.

14 Q Can you describe the combination of Johnson
15 and Belk at a high level?

16 A Sure. So you can basically think of Johnson
17 as a device that -- or as a system that uses probes to
18 penetrate into meat to be able to measure the fat/lean
19 separation line and then trims the desired amount of
20 -- or trims the fat to leave a desired amount of fat
21 on the -- on the product.

22 And Belk is a vision system that's used

1 to characterize a whole number of different attributes
2 about a -- about a meat product, including its
3 physical characteristics, dimensional characteristics.

4 And the two of them can be used to use
5 the Belk system to provide the geometric data that
6 Johnson needs in order to provide the cutting profile.

7 Q And are you proposing that Johnson's probes
8 are removed and replaced with Belk's imaging system?

9 A Well, yes, the probes would be removed, and
10 there'd be an imaging system. It wouldn't go where
11 the probes are, but there'd be an imaging system added
12 to the system.

13 Q And so in the proposed combination, the --
14 determining the fat thickness, determining
15 functionality is performed by using Belk's imaging
16 system rather than Johnson's probe system; is that
17 correct?

18 A That's correct.

19 Q Let me scroll down to page -- branded page
20 87 -- sorry. I'm going to scroll back up here. Bear
21 with me.

22 All right. So on branded page 73, PDF

1 page 79, in Ground 3, you are addressing limitation
2 1[A], "a measurement device for automatic
3 determination of the thickness of the fat cover,
4 wherein the determination of the thickness of the fat
5 cover takes place in a contactless manner."

6 Do you see that.

7 A I do.

8 Q And you point to in paragraph 186 Belk's
9 imaging device 12, which you say is "preferably a
10 color camera."

11 Do you see that?

12 A Yeah, that's one of the examples of what the
13 device can be.

14 Q Okay. Have you relied on any other examples
15 of what the imaging device 12 can be that would
16 satisfy limitation 1[A]?

17 A Yes. It states in column 5, line -- about
18 9, it says, "An apparatus for use in the present
19 invention comprises an imaging device 12 and a data
20 processing unit 16. The imaging device 12 can be any
21 such imaging device known to those of skill in the
22 art, such as a camera, topographic [sic] imaging (i.e.

1 CAT or PET) device, magnetic resonance imaging
2 (MRI)...sound wave imaging device, radio wave imaging
3 device, microwave imaging device, or particle beam
4 imaging device." And it goes on. So that's a
5 description of imaging device 12.

6 Q That was you reading from Belk, and I'm
7 asking, did you rely and discuss any examples of
8 imaging device 12 other than the camera embodiment in
9 your Ground 3 analysis?

10 MR. SHEELER: Objection, cumulative.

11 THE WITNESS: I'm seeing a whole bunch
12 of references to the imaging device 12, which, as I've
13 described, includes a number of different imaging
14 devices, in my report.

15 Do you want me to keep looking for
16 specifics or...?

17 BY MR. HART:

18 Q If that's your answer. Did you discuss and
19 analyze anything other than the camera embodiment of
20 imaging device 12 in Ground 3?

21 A Well, I don't think that's the correct
22 characterization. I gave an example of an imaging

1 device, which is a -- which is a camera, but the
2 patent clearly shows that there are a number of
3 different imaging devices, with a camera being one
4 embodiment.

5 Q Can I have you go to paragraph 207 in your
6 Declaration, branded page 79, PDF page 85.

7 A I see that.

8 Q Here you are discussing Dependent Claim 2,
9 which states, "wherein the determination of the
10 thickness of the fat cover takes place optically."

11 Do you see that?

12 A I do.

13 Q And in paragraph 208, you state, "...Belk
14 discloses an imaging device 12, which can be any
15 imaging device known to a POSA, such as a camera. A
16 camera does not contact a meat product it is observing
17 and is an optical device."

18 Do you see that?

19 A I do.

20 Q Did you discuss any embodiments of imaging
21 device 12 other than the camera embodiment with
22 reference to Dependent Claim 2?

1 MR. SHEELER: Objection, cumulative.

2 THE WITNESS: I don't believe I did, no.

3 BY MR. HART:

4 Q Would any of the alternative imaging device
5 12 embodiments that you referred us to in Belk column
6 5 satisfy Dependent Claim 2, other than the camera
7 embodiment?

8 A Well, a number of them would. For example,
9 a CAT scanner would. It uses x-rays in the x-ray
10 spectrum of the -- of the light. So that would be an
11 x-ray camera -- sorry, that would be -- that would be
12 optical, because it's looking at light in the x-ray
13 spectrum.

14 Q And x-ray -- the x-ray spectrum is part of
15 the visible optical spectrum, is your opinion?

16 A Not visible, no. It's optical.

17 Q What does "optical" mean --

18 A It means optic. It means optics. So light,
19 and light has a wide range of spectrums.

20 Q I think I just have one more topic to cover
21 with you here.

22 Can I have you scroll to branded page

1 86, PDF page 92 in your Declaration, Exhibit 103.

2 A I'm there.

3 Q Here you are discussing Dependent Claim 16,
4 which, as has been covered with reference to the
5 earlier grounds, requires "...determining the
6 thickness of the fat cover during a transport movement
7 of the meat product."

8 Do you see that?

9 A I do.

10 Q In this section of your report, you're
11 describing Johnson's conveying operation and its
12 multi-probe mechanism in conjunction with Belk's
13 imaging system. And I want to make sure I understand
14 your theory.

15 In your claim 16 combination, what role,
16 if any, does Johnson's probe assembly play?

17 A Well, you can use the Johnson -- the platen
18 that moves the Johnson probes for the -- for the
19 device from -- device 12 from Belk.

20 Q In your opinion, with reference to claim 16
21 in Ground 3, are Johnson's actual probes used for any
22 reason?

1 A I wouldn't see any motivation -- any benefit
2 to use Johnson's probes if you've got the Belk imaging
3 system.

4 Q Okay. So when you discuss Johnson's probe
5 assembly in paragraph 240, you are not proposing that
6 Johnson's physical probes are used in any way to
7 measure the thickness in the combination?

8 A That's correct.

9 Q Okay.

10 MR. HART: All right. That's all I had
11 today. Thank you very much for your time today,
12 Dr. Collins.

13 THE WITNESS: Thank you.

14 MR. SHEELER: Paul, can we just take a
15 five-minute break to see if we want to do any
16 redirect; and if not, we'll call it?

17 MR. HART: Sure.

18 MR. SHEELER: Thank you.

19 (Recess - 1:45 p.m. to 1:49 p.m.)

20 MR. SHEELER: Nothing further from us.

21 (Deposition concluded at 1:49 p.m. EDT)

22

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My Commission Expires: December 2, 2029

1 John M. Collins, Jr., Ph.D., c/o
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2 300 North LaSalle
Chicago, Illinois 60654-3406

3

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Date of deposition: July 31, 2024

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9 Witness Name: John M. Collins, Jr., Ph.D.

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11 Page No. Line No. Change

12

13

14

15

16

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A able 19:17 27:5,7 44:18 absent 53:21 Abstract 23:2 24:6,13 accurate 31:6 accurately 33:14 acknowledge 54:7 actual 7:4 50:21 ADAMS 2:16 add 42:5,15,16 42:20 43:8 added 45:11 adding 42:2,12 additional 29:15 35:11 address 44:10 addressing 46:1 adjust 21:8 adjusted 41:1 adjusting 30:14 adjustment 30:7 advise 53:12 advised 53:7 aforementioned 29:19 ago 4:18 16:12 agree 22:11 41:20 algorithm 42:20 allowed 53:15 allows 33:10 alternative 49:4 amount 8:21 33:8 33:15 35:16,16 35:17,17 44:19 44:20 analysis 15:13 19:5 20:17 21:1 21:6,18 22:13 22:14,19 42:7 43:18 47:9 analyze 47:19 analyzes 24:10 analyzing 15:22 17:3	and/or 23:7 53:11 annotated 32:2 answer 5:10,11 5:14 6:7 17:21 19:16,18,22 20:5 22:7 30:18 47:18 answering 30:21 answers 52:10 54:11,13 anticipates 7:11 anticipation 20:10 anybody 18:14 anyway 42:22 apparatus 23:6 23:10 24:15 46:18 APPEAL 1:2 APPEARANC... 2:1 applicable 53:15 appropriate 30:15 54:10 area 28:12,17 40:3 41:3 argument 41:18 arrive 26:3 art 46:22 ascertainable 12:10 asked 19:21,22 52:10 asking 5:8 17:21 17:22 19:18 22:16,17 47:7 assembly 23:8,9 31:18 37:5,6 40:18,18,22 50:16 51:5 associated 31:19 attached 54:12 attempt 5:6 attributes 45:1 August 52:14 automatic 7:22	9:5 15:12 20:16 30:7 46:2 available 25:3 aware 5:16 axis 12:7,17 B BABBITT 2:5 back 15:1 16:21 21:13 22:2 27:10,17 29:8 34:2,9 36:9 43:15,16,18 45:20 back-and-forth 18:5 backbone 15:14 15:22 17:3,10 18:18,21 19:11 20:11,19,22 21:2,8,13,21 22:4,13,17,18 23:13 24:10 25:2 40:16 balance 22:22 based 23:10 24:19 basically 10:3 12:22 24:22 26:17 27:5 44:16 basis 17:14 22:12 beam 47:3 Bear 45:20 beginning 41:8 begins 14:6,12,13 41:7 behalf 1:18 2:3 2:13 believe 6:5 8:20 11:9 12:3 13:3 15:8 17:6,20 21:2 22:7 29:2 32:9 33:6,20 34:1 40:6 42:9 42:22 43:22 49:2	Belk 44:12,15,22 45:5 47:6 48:13 49:5 50:19 51:2 Belk's 45:8,15 46:8 50:12 belly 31:19 33:2 benefit 4:22 51:1 best 5:5 better 16:16,17 beyond 33:11,22 35:2 bit 38:14 41:6 43:1 blade 23:5 32:21 32:22 34:3,14 blades 23:4 block 11:4 29:17 BOARD 1:2 bottom 30:4 Boulevard 2:17 box 54:10 branded 7:6,7,17 8:22 14:6,10,13 41:8 44:6 45:19 45:22 48:6 49:22 break 36:1 51:15 Breidenbach 1:7 53:4 54:4 55:8 broadly 19:10 bunch 47:11 C c/o 53:1 calculate 27:21 28:3,19,21 calculated 21:3,4 21:5 25:9 27:12 27:21 29:18,19 30:1 calculates 9:11 calculating 9:19 10:2 28:6 29:4 calculation 9:20 10:5 calculations 29:1 29:3	call 51:16 53:17 called 1:14 4:5 11:4 calls 42:7 camera 10:21,21 10:22 11:1,2,13 12:2,3,10,11,16 13:2,3,5,10,16 13:17 25:10,15 26:3,14,20 27:13 39:16,17 39:17 40:12,13 40:21 41:1 42:5 42:12,14,15,16 42:17,18,20 43:2,3,9,13,14 44:1,2 46:10,22 47:8,19 48:1,3 48:15,16,21 49:6,11 cameras 10:14,18 10:21 11:7 25:22 26:19,22 27:1,14 39:19 42:6 43:11 capture 5:4 captures 8:16 39:15 Cartesian 11:18 case 1:8 21:10 53:4 54:4 55:8 CAT 47:1 49:9 cause 52:13 certain 35:15 certainly 27:18 29:14 38:13 CERTIFICATE 52:1 certify 52:8 cetera 23:11 24:20 change 33:21 35:4,11,20 55:11 changes 54:12 characteristic 23:13
---	---	---	---	--

characteristics 25:1 45:3,3	1:16	39:12 44:12,13	21:17 23:7,8	17:2 19:6 20:21
characterization 47:22	Commission 52:22	45:17,18 47:21	24:2,16,17 25:4	27:18 29:14
characterize 45:1	compare 30:1	51:8 52:12	25:4,5 31:4	33:14 47:13
characterizing 19:8 22:5 23:15	complete 53:8	54:10,13	37:5 38:8 40:17	describes 10:20
check 15:1 34:6	54:11,13	counsel 1:15	45:6	24:22 34:12
43:15,16,18,19	complex 27:6	52:13 53:11,14		41:21
54:10	component 9:6	county 52:5,8,21	D	describing 21:6
Chicago 2:7 53:2	components 42:1	coupled 9:4	D.C 1:21 54:2	22:19 23:20
cite 15:18 37:11	comprises 46:19	court 4:21 5:4	55:3	32:9 50:11
cited 18:17,21	compute 42:8	cover 8:1,2,5,12	data 14:14 39:16	description 47:5
19:9 22:9	computed 21:3	8:16,20 9:6	40:14 41:3 42:8	desired 27:8
claim 38:17,21	computer 52:11	15:13 19:12	45:5 46:19	44:19,20
48:8,22 49:6	concluded 51:21	20:13,17 24:8	Date 53:4 54:5,17	detect 30:17
50:3,15,20	conjunction	24:12 31:6,20	54:22 55:10,22	detection 30:2
Claims 7:11	18:21 50:12	35:11 37:7,13	Dated 52:14	determination
clarify 5:3	consent 53:22	37:17 38:5,10	day 6:3	7:22 8:1 15:12
clean 5:18,21 6:6	considering 35:9	38:22 39:4	Daylight 1:16	20:16 21:20
clear 5:1 17:15	consumption	40:20 46:3,5	December 52:22	46:3,4 48:9
17:21 22:16	40:8	48:10 49:20	Declaration 6:3	determine 9:12
28:16 41:20	contact 48:16	50:6	6:20 7:2,10,18	9:21 10:12
clearer 43:7	contactless 8:2	covered 50:4	9:1 14:6 15:6	17:10 18:22
clearly 48:2	46:5	covering 27:22	15:10 21:7 25:8	19:12 20:12
collecting 14:13	contend 9:3	28:4,11,20 29:5	28:18 31:3	21:21 24:3,11
College 2:17	28:22 31:5	covers 8:6	36:12 38:15	27:15
Collins 1:14 3:3	CONTENTS 3:1	CRR 52:20	41:9 44:4,6	determined 9:7
4:4,11,16 18:4	contours 23:11	CSR-3091 1:17	48:6 50:1	21:3
36:9,14 51:12	24:20	52:20	definitely 18:11	determines 10:5
53:1,5 54:5	Controller 37:2	cues 30:17	denote 3:16	24:7 25:16
55:9	40:16	cumulative 19:13	dependence 9:6	determining
color 46:10	conversation	19:14,19 20:2	31:5	15:21 17:2 24:5
column 15:18,19	32:17	22:1 34:20	Dependent 38:17	38:21 39:3
17:9 18:7,17,19	conveying 39:9	47:10 49:1	38:21 48:8,22	45:14,14 50:5
18:20 19:3	50:11	customized 23:7	49:6 50:3	device 7:21 9:4,5
29:15 34:12	conveyor 39:20	24:16,17	depicted 28:17	9:7 31:4 44:17
37:11 40:4	conveys 39:10	cut 8:9 9:13,21	35:1	46:2,9,13,15,19
46:17 49:5	coordinated 41:4	10:6 21:9,10,10	deponent 53:5,9	46:20,21 47:1,2
combination 6:10	coordinates	21:14,15 24:2	53:11	47:3,3,4,5,8,12
23:3 41:14	11:18	25:5 27:7 30:10	deposition 1:13	47:20 48:1,14
44:11,14 45:13	copies 5:18,21	30:14 32:5,6,9	51:21 52:8 53:4	48:15,17,21
50:15 51:7	copy 6:6 53:10	32:11,13,14,18	53:14 54:5,8	49:4 50:19,19
combining 41:10	Copying 53:21	32:20 33:16	55:10	devices 47:14
come 53:9	Copyright 53:21	34:3 35:3,10,19	depth 13:20	48:3
comma 15:2	correct 7:14	38:12	describe 17:10	diagram 11:4
commencing	11:11 12:20	cuts 8:11 31:18	27:5,14 29:4	dictated 34:19
	21:13 32:12	32:17,21 33:2,3	39:8,22 44:14	different 7:16
	34:2,19 39:11	34:14	described 10:13	30:10 44:1 45:1
		cutting 8:18 9:4	12:17 15:21	47:13 48:3

difficulties 10:10 Digital 1:19,20 53:20,21 54:1 55:1 dimension 35:13 37:19 42:21 dimensional 45:3 dimensions 23:11 24:20 28:22 35:7,9 direction 12:8 28:8 disclose 41:18 disclosed 41:16 41:17 discloses 7:21 9:4 39:3 48:14 discuss 18:21 31:4 47:7,18 48:20 51:4 discussed 18:19 31:9 33:4 discusses 18:18 40:10 discussing 21:19 34:5 48:8 50:3 displacement 23:3 distance 28:6 37:6 40:19 distinct 14:19 19:21 document 3:17 doing 6:5 43:3 double-check 34:12 Dr 4:11 18:4 36:9 36:14 51:12 drawing 35:13 Drive 2:6 duly 4:6 52:9,11 dynamic 40:14 dynamically 37:4 40:17	earlier 12:18 50:5 Eastern 1:16 edge 14:15 28:7 38:2 EDT 4:2 51:21 either 17:1 25:3 52:13 electronically 53:21 embodiment 10:17,20 47:8 47:19 48:4,21 49:7 embodiments 48:20 49:5 enables 23:4 ERISE 2:14 errata 53:13 54:12 55:6 error 30:2 ESQUIRE 2:5,5 2:6,15,16 et 23:11 24:20 event 52:13 Evidence 1:19,20 53:20,21 54:1 55:1 exact 3:16 exactly 40:2 examination 1:14 3:4 4:9 examined 4:8 54:7 example 10:16 16:3 23:1 26:9 29:13 30:3 47:22 49:8 examples 46:12 46:14 47:7 excerpt 17:9 18:17,20 Excuse 5:20 exhibit 6:4 7:2,11 14:7 21:18 28:18,18 44:10 50:1 exhibits 3:14	5:21 existed 38:11 existing 42:6 43:11 exists 21:5 Expires 52:22 explain 18:16 19:11 24:14 explained 19:17 explicit 42:10,21 explicitly 41:21 42:7 explore 7:15 43:1 express 53:22 extra 35:2	41:18,21,22 42:8,18,21 43:3 43:13 44:2,20 44:20 45:14 46:3,4 48:10 50:6 fat/lean 15:2,6,14 15:22 17:4 18:22 20:19 22:15 24:10 25:15,16 26:2,4 26:10,19,20 27:2,16 28:6,9 31:18 32:5,10 32:18 33:1,11 33:22 34:3 37:3 38:1 40:13,15 41:2 44:18 FELDHAK 2:6 field 41:1 figure 11:8 20:5 26:10,21 28:10 28:12 30:4,4,4 31:12,17 32:2 34:2 35:1,3,10 40:20 final 44:10 find 40:2 fine 16:15 finish 5:10 finished 5:9 first 4:6 10:8 15:11 20:14 22:20 52:9 five-minute 51:15 fixed 37:6 40:18 flesh 9:6 31:5 flow 18:5 focus 21:19 32:16 41:1 focused 20:9 32:6 follow 17:22 19:10,18 23:5 follow-up 5:9 follows 4:8 21:14 32:22 37:6	40:18 forbidden 53:21 foregoing 52:10 54:7 form 9:14 11:15 12:12 13:12,19 14:21 16:2 17:5 17:12,16,18 23:18 26:5,15 28:13 35:5 37:15 42:3 43:4 format 22:12 forth 41:14 52:9 forward 53:13 frankly 41:15 French 1:17 52:7 52:20 front 12:14 full 4:14 52:11 fully 5:14 functionality 6:9 42:5 45:15 further 51:20
F				
facing 40:22 fair 5:11 28:14 Farr 2:4 53:1 fat 7:22 8:2,5,6,9 8:11,12,15,16 8:17,20,21 9:6 9:11,12,19,21 10:2,4,6,12,22 13:3,5,10,17,21 14:14,18 15:3 15:13,21 17:3 17:10 19:1,12 20:13,17 21:20 21:22 22:5 23:17,21 24:4,5 24:8,11,18 25:5 25:8,9,10,18 26:3,14 27:11 27:12,15,22 28:4,11,20 29:5 30:9,15 31:5,6 31:20 33:9,10 33:15,22 34:15 34:15,18 35:2 35:11,15,16,17 35:18 37:2,7,13 37:13,16,17,22 38:1,5,6,7,9,10 38:11,22 39:3 39:17 40:20				
G				
G 2:5 Gallagher 2:4 53:1 gears 38:14 generally 22:18 31:8,8 generated 14:18 14:19 generates 14:14 23:6 24:16 geometric 45:5 give 22:22 given 54:11,13 GMBH 1:7 53:4 54:4 55:8 go 14:22 16:9 22:2 27:17 43:15,16,18 45:10 48:5 goal 33:17 goes 47:4 going 6:2 10:6				
E				
E 1:17 52:7,20				

27:10 32:1 34:2 35:18 36:10,20 38:14 45:20 good 4:11,12 5:17,22 6:2 7:9 11:12 31:1 36:18 governing 53:15 great 6:16 29:9 ground 4:20,21 20:10 41:6,9,14 42:2 44:9,10 46:1 47:9,20 50:21 grounds 50:5 Group 1:19,20 53:20,21 54:1 55:1 guide 21:11	helpful 6:12,15 6:17,21 hereinbefore 52:9 hesitate 53:17 hesitating 10:2 hide 40:7 high 44:15 highlight 31:15 highlighted 36:19 36:20 hold 6:4 hour 35:22	24:19 includes 22:14 47:13 including 45:2 53:21 increase 35:16,18 incremental 41:4 indicated 34:4 indicates 29:21 indicating 32:7 information 12:9 12:17,22 13:9 37:2,4 40:16 Ingham 52:5,21 inputs 34:19 interested 52:13 interface 25:10 25:18 interpret 38:4 interpretation 9:10,18 introduce 41:9 invention 24:22 46:19 inwardly 40:22 IP 2:14 IPR2024-00235 1:8 isolation 22:17 issues 7:16	Junior 4:17 K Kansas 2:19 Keaton 2:5 17:13 19:15 keep 24:1 47:15 kick 7:1 kind 11:16 22:3 knife 21:9,11,14 23:5,8 27:7 31:18 37:5 40:17,22 know 5:2,10 6:14 6:18 13:16 20:4 24:1 35:13 42:7 44:7 knowing 29:20 knowledge 6:1 known 29:18 46:21 48:15 ksheeler@wilki... 2:9	lies 22:7 light 49:10,12,18 49:19 lights 11:9 limitation 21:18 32:7,11,19 33:5 46:1,16 line 10:22 13:3,5 13:10,17,21 14:2,18,19 15:2 15:3,6,14,15,22 16:1 17:3,4,10 18:18,21,22 19:11 20:11,19 20:19,22 21:2,2 21:8,14,14,21 22:4,13,15,17 22:18 23:13 24:10,11 25:2,6 25:9,9,16 26:2 26:3,4,11,11,13 26:14,17,20 27:2,7,11,12,15 27:16,21 28:6,7 28:10 29:15 30:15 31:19 32:6,11,14,19 33:1,11,22 34:3 34:12 35:4,10 35:19 37:3,7 38:2 39:17 40:4 40:13,15,19 41:2 42:18 43:3 43:13 44:2,19 46:17 55:11 lines 14:15 15:19 15:19 34:13,13 34:14 37:11 little 43:1,6 LLC 55:1 LLP 2:4 53:1 local 6:6 logic 19:10 loin 21:10 23:6,8 24:15 27:22 28:9 37:5 38:5 38:10 40:17,20
H happens 21:16 happy 6:20 18:13 19:2,2 hardware 10:11 Hart 2:15 3:4 4:10 9:17 10:7 12:1,15 13:15 14:1 15:4 16:5 17:8,13,17 18:1 18:3 19:14,20 20:3,8 22:6 23:22 26:12,18 28:15 29:9 30:16 34:8,17 34:22 35:8,21 36:4,6,8 37:18 42:11 43:5 47:17 49:3 51:10,17 hear 24:4 height 10:5,12 27:21 28:3,10 28:20 29:5,17 30:8,15 37:17 43:17 help 11:12 16:4	I i.e 46:22 idea 35:14 identified 32:17 33:9 identifies 26:16 identify 26:13,20 27:2 identifying 25:1 Illinois 2:7 53:2 illustration 11:7 35:7,12 image 14:14 29:19 39:15 40:14 41:3 42:8 images 30:2 imaging 14:14 15:11 20:16 25:9 27:12 37:3 39:11,15,18 40:1,11,12 45:8 45:10,11,15 46:9,15,19,20 46:21,22 47:1,2 47:2,3,4,5,8,12 47:13,20,22 48:3,14,15,20 49:4 50:13 51:2 incapable 43:3 inch 33:9 inches 33:10 35:2 include 12:21 included 23:9	J job 5:1 40:3 John 1:14 3:3 4:4 4:16 53:1,5 54:5 55:9 Johnson 44:11,14 44:16 45:6 50:17,18 Johnson's 45:7 45:16 50:11,16 50:21 51:2,4,6 Jr 1:14 3:3 4:4 53:1,5 54:5 55:9 July 1:15 4:1 53:4 54:5 55:10	L L.L.C 54:1 LANE 2:16 lane.adams@e... 2:22 laptop 5:20,21 large 16:11 LaSalle 2:6 53:2 lateral 21:9 23:3 layer 8:6,12,13 24:17 34:15,18 35:15 lean 14:15,19 15:3 25:8,11,18 27:11,22 35:19 leave 35:15 44:20 leaves 8:12 length 29:17 Let's 11:1 13:2 29:13 33:7 38:14 41:6 43:1 44:5 level 44:15	

40:21 loin. 37:8 loner 5:21 look 16:9 26:9 looking 6:14 11:22 12:7,22 28:8 42:17 47:15 49:12	38:7 39:1,4,9 39:10,16,18,19 40:10 44:18 45:2 48:16 50:7 meat. 15:15 mechanism 50:12 medical 5:13 mentioned 12:3 13:3 26:8 mfeldhake@wi... 2:11 MICHAEL 2:5 Michele 1:17 29:10 34:8 52:7 52:20 Michigan 1:18 52:3,21 microwave 47:3 middle 31:10,14 mind 16:7 34:8 mine 6:13 minutes 36:4 missing 25:14 MITCHELL 2:6 mix 40:7 modified 25:3 modifies 23:7 modify 37:4 40:17 42:20 moments 32:16 morning 4:11,12 motion 11:19,20 21:9 motivation 51:1 movement 38:22 39:4,15 50:6 movements 41:4 moves 50:18 moving 39:9,19 40:1,10 MRI 47:2 multi-probe 50:12 mute 40:6	54:5 55:9 necessarily 3:16 need 17:19 42:19 needed 27:5 28:11 needs 18:14 44:1 45:6 nice 4:11 40:3 normal 37:20 normally 16:21 Norrie 41:10,13 41:15,20,21 42:1,7,10,13,14 43:16,22 Norrie's 43:2,9 43:14 North 2:6 53:2 Notary 1:18 52:1 52:7,21 54:22 note 3:14 31:11 33:8 noted 54:12 notes 52:12 noticing 53:14 noting 53:14 number 7:4,5 29:12 30:6,10 30:12 32:21 45:1 47:13 48:2 49:8 NW 1:21 54:1 55:2	30:1 obviousness 41:10 office 1:1 53:9,17 offset 27:8 32:14 32:15,18 33:1,7 33:18 34:4 oh 11:11 41:7 okay 4:18 6:11,16 6:22 7:8,15 8:8 8:15 10:8,15 11:5,9,12 12:16 13:2 15:5,9 17:9 20:3 22:7 33:7 36:4,6,16 36:20 37:22 38:14 39:8,22 43:19 46:14 51:4,9 once 21:5,5 operation 8:18 50:11 opine 7:10 opinion 15:20 33:4 49:15 50:20 opinions 7:15 opposite 29:22 optic 49:18 optical 48:17 49:12,15,16,17 optically 48:10 optics 49:18 optimum 37:7 38:5,10 40:20 option 53:11,12 order 24:11 45:6 original 38:11 53:13 outside 28:7 overall 43:17 Overland 2:19 Owner 1:7,15 2:13	36:7 51:19,19 51:21 page 3:2 7:2,3,4,4 7:6,7,7,7,10,18 7:18 8:22 9:1 14:6,7,9,10,10 14:13 15:10 28:17,17 31:15 38:19 41:7,8,8 44:5,6,6,9 45:19,19,22 46:1 48:6,6 49:22 50:1 53:14 54:4 55:11 pages 54:7 paragraph 7:20 8:16 14:5 15:9 16:8,10 21:7,20 22:9,20 24:9 25:7 27:10,20 31:2,3,3,10,11 31:14 33:8 36:12 37:1 38:15 39:2,8,14 46:8 48:5,13 51:5 paragraphs 31:8 Park 2:19 part 25:18 49:14 particle 47:3 particular 23:10 24:19 party 52:13 patent 1:1,2,7,9 1:15 2:13 7:13 19:4 27:19 48:2 Paul 2:15 51:14 paul.hart@eris... 2:21 PDF 7:4,7,18 8:22 14:6,10 28:17 31:15 38:18,19 41:8 44:6 45:22 48:6 50:1 penetrate 44:18
M M 1:14,21 3:3 4:4 53:1,5 54:1,5 55:2,9 machine 16:8 magnetic 47:1 making 29:1,2 Maloy 4:16 manner 3:15 8:2 46:5 mapping 32:6,19 Maschinenbau 1:7 53:4 54:4 55:8 match 7:6 matter 4:19 6:3 53:8 mbabbitt@wil... 2:10 mean 8:5 28:3 49:17 means 39:10 49:18,18 measure 44:18 51:7 measurement 7:21 9:5,7,12 46:2 measuring 41:22 meat 8:7,9,13,21 9:11,13,20,21 10:6 11:14,17 11:19,20,22 12:5 13:18,22 14:3,15 20:20 23:12,14 24:21 25:11,19 34:16 35:1 37:21 38:2	N name 4:14,16	O objection 9:14,22 11:15 12:12 13:12,19 14:21 16:2 17:5,12,14 19:13 22:1 23:18 26:5,15 28:13 34:20 35:5 37:15 42:3 43:4 47:10 49:1 objects 25:20,21 observing 48:16 obtain 12:10,16 obtained 13:9	P p.m 1:16 4:2 36:7	

performed 29:16 45:15 performs 8:18 period 53:15 person 5:5 PET 47:1 Petitioner 1:6 2:3 Ph.D 1:14 3:3 4:4 53:1,5 54:5 55:9 phrase 8:15 physical 45:3 51:6 piece 35:19 place 8:2 46:5 48:10 52:9 places 19:9 29:13 30:6,11,13 plain 39:16 plan 10:21 11:1,2 11:13,21 12:11 plane 13:1,8 42:18 platen 29:21 41:5 50:17 play 50:16 please 4:14 5:2 5:10 9:16 16:20 29:6 34:7 40:9 40:9 53:7,12,13 53:16 point 12:4 24:14 30:12 46:8 pointed 19:22 pork 29:18,22 40:15 portion 8:11,14 18:7,8 23:16 24:6 36:11,19 36:21 38:6,11 40:9 portions 15:20 17:2 22:9 POSA 48:15 position 17:1,7 28:21 29:21 41:2 42:16	positioned 40:21 positions 29:20 pre 24:2 predetermined 25:6 preferable 30:1 preferably 40:21 40:22 46:9 preference 6:7 premise 26:7 present 46:18 pretty 28:5 previous 18:1 primarily 6:13 40:13 prior 5:11 probably 6:10 15:1 25:13 probe 45:16 50:16 51:4 probes 44:17 45:7,9,11 50:18 50:21 51:2,6 Procedure 53:16 process 10:12 24:2 processing 29:19 46:20 product 8:10,13 9:11,20 11:14 12:5,14 13:14 13:18 14:3,15 23:14,21 25:11 27:4 28:7 35:1 38:2,7 39:1,5,9 39:10,16 40:1 40:11 42:17 43:17 44:21 45:2 48:16 50:7 products 26:8 profile 37:5 40:17 45:6 profiles 23:6,7,8 23:15 24:16,17 25:4,4 propose 42:12 proposed 41:13	45:13 proposing 42:2 45:7 51:5 provide 13:6 37:7 40:14,19 45:5,6 provides 25:17 34:15 providing 42:21 Provisur 1:5 53:4 54:4 55:8 proximate 40:15 40:21 Public 1:18 52:7 52:21 pull 6:17 10:19 purchased 53:10 purpose 13:11,17 24:18 43:14 put 15:2 putting 16:7 Q question 5:2,3,9 6:20 9:16 16:20 17:18,21 18:2,6 19:5,18,21,21 20:1,6,11 22:12 26:7 29:6 30:21 32:8 34:7 36:22 questions 5:1,14 6:7 24:2,3 35:22 52:10 53:16 54:11,13 quick 36:1 quotations 3:14 quote 3:17 20:18 22:14 37:12 quoted 38:5 R radio 47:2 range 49:19 rationale 19:17 read 3:15 16:21 18:13,15 19:3 23:16 24:4,6 27:18 29:7,11	34:10 36:20 40:5,9 54:7 reading 20:6 31:13 34:9 36:17,19 47:6 ready 53:8 real-time 40:14 realized 44:3 realtime 10:9 16:22 reask 17:19 reason 5:13 43:8 50:22 recall 27:17 receives 37:2 Recess 36:7 51:19 recites 38:21 record 3:16 5:18 17:14 18:15 24:6 28:16 29:11 34:10 36:21 recorded 52:11 54:11,14 redirect 51:16 reduced 52:11 redundant 41:15 refer 6:19 11:21 reference 6:13 7:3,10 16:9 20:9 30:7 38:4 38:17 44:11 48:22 50:4,20 referenced 29:14 30:4,10 53:8 references 15:5 20:7 47:12 referencing 11:3 referred 13:16 49:5 referring 15:7 24:1 40:10 reflected 3:15 regarding 33:4 regular 27:4 reiterate 4:20 related 4:19	52:13 relative 35:19 42:16 relatively 41:3 relevant 32:19 33:4 relied 46:14 rely 26:3 47:7 remotely 52:8 remove 23:21 24:17 31:19 35:15 removed 8:17 35:18 38:6 45:8 45:9 removes 8:13 repeat 9:15 16:20 29:6 34:7 rephrase 5:3 43:6 replaced 45:8 report 16:8 27:18 47:14 50:10 reported 1:17 reporter 4:21 5:4 29:7 REPORTER'S 3:14 represent 28:11 representation 25:1 represents 30:9 requested 29:11 34:10 requires 50:5 reread 24:13 resize 16:14 resonance 47:1 respect 8:8 11:14 12:5 result 35:11 retain 33:21 retained 8:17 33:9,10,15 34:18 38:7,9 retread 4:19 returning 29:16 review 22:3 43:22
---	---	--	--	---

53:10 reviewing 16:18 18:6,8 right 5:17,22 7:1 7:9,13,20 8:19 9:3,13 14:12 15:9 17:17 20:10,15 24:3 28:12 31:1,10 31:14 35:2 36:9 36:11 40:7 41:6 44:5,9 45:22 51:10 RMR 1:17 52:20 role 41:13 50:15 routine 29:16,16 RPR 1:17 rules 4:21 53:16	18:12,13 19:3,7 20:21 22:21 see 8:3 9:8 12:2 13:17 14:16 15:16 16:13,19 18:11 25:12 26:21 28:1,9 29:13 31:16,21 32:2 33:12 35:10 36:11 37:9 38:16,20 39:6 41:11 43:10,16 46:6 46:11 48:7,11 48:18 50:8 51:1 51:15 seeing 35:3 47:11 seen 15:5 sees 10:4 12:13 13:13 selected 53:12 sense 36:3 sent 25:4 sentence 14:12 15:7,11 20:14 20:15 22:20 25:7 37:14,22 39:13 separate 23:5 separates 13:21 26:11 31:5 separation 9:5 15:6,15 16:1 17:4 18:22 20:19 22:15 23:4,6 24:10,15 25:8,16 26:2,4 26:10,20 27:2 27:11,15,16 28:9 31:19 32:5 32:11,14,18 33:1,11,22 34:3 37:3,7 38:2 40:13,15,19 41:2 44:19 series 10:14 serve 41:13 43:14	set 41:14 52:9 sets 25:22 33:19 setting 33:10 shape 27:6,9 share 6:8,14,21 16:4,11 32:1 36:10 shared 38:16 sharing 44:3 SHEELER 2:5 9:14,22 11:15 12:12 13:12,19 14:21 16:2 17:5 17:12,16,20 19:13,16 20:1 22:1 23:18 26:5 26:15 28:13 34:20 35:5 36:2 37:15 42:3 43:4 47:10 49:1 51:14,18,20 sheet 53:13 54:12 55:6 show 23:19 shown 31:11,17 40:20 shows 13:21 25:10 31:12,18 48:2 sic 46:22 side 13:7,13,17 14:2 15:15 20:20 23:11 24:20 25:19 26:17 29:18,22 40:15 42:15 sides 23:4,5 sign 53:9,10 signature 53:8,14 54:4,17 55:22 signed 53:13 signing 53:12 simply 28:21 Sincerely 53:20 single 20:9 sits 11:17 skill 46:21	slash 15:2 slightly 33:1 small 41:3,4 sorry 14:8 15:14 27:16 31:13 36:14 40:8 45:20 49:11 sound 47:2 space 11:17 speak 4:13 5:6,7 17:7 speaking 5:5 speaks 19:4 special 43:2 specific 13:10 22:3 23:11 24:20 33:8 34:4 42:1 specifically 43:12 specification 19:6 20:7,18,21 22:3 22:22 23:20 30:11,13 specifics 47:16 spectrum 49:10 49:13,14,15 spectrums 49:19 spend 6:2 spoke 4:18 SS 52:4 stand 18:2 standard 23:7,15 25:3,3 stands 22:14 start 11:1 started 4:15 starting 7:9 29:15 starts 15:10 state 1:18 4:14 7:20 15:11 24:9 25:8 37:1 39:2 39:14 48:13 52:3,8 statement 18:12 19:8 27:10 states 1:1 20:15	20:15 46:17 48:9 stenographic 52:12 stenographically 52:11 step 29:15 steps 29:20 stop 29:20 straightforward 28:5 streaming 1:13 Street 1:21 54:1 55:2 submitted 6:3 substantively 20:2 Suite 1:21 2:18 54:1 55:2 support 15:18 17:7 18:11 22:21 sure 4:16 6:12 9:18 10:9 16:6 16:10 17:14 18:4,9 24:1 28:16 30:19 32:9 36:2,3 42:19 43:20 44:16 50:13 51:17 surface 37:21 switch 38:14 sworn 4:6 52:9 system 8:10,11 10:3 12:4 13:11 14:14,20 15:12 19:11 20:12,16 21:4,12 25:5,9 25:16 26:2,13 27:12 32:10 33:19 35:4 37:3 39:11,15,20 42:2,13 43:9 44:17,22 45:5,8 45:10,11,12,16 45:16 50:13
S				
satisfies 32:11 satisfy 46:16 49:6 saw 23:9 24:19 30:8,14 says 12:13 14:13 20:7 23:2 24:15 40:3 46:18 scanner 49:9 screen 6:8,14,18 6:21 16:4,11 32:2 36:10 38:16 44:3 scribe 21:10,15 23:9 24:19 scroll 7:17 8:22 14:5 31:2 32:1 38:15 45:19,20 49:22 scrolling 14:8 44:4 second 12:3 second-to-the-l... 39:13 section 16:18 24:13 35:22 50:10 sections 17:7				

51:3	47:21 49:20	45:4	11:21 12:2,4,6	20:4 22:2 23:19
T	thinking 26:1	two-dimensional	12:7,9,16,19	26:6,16 28:14
TABLE 3:1	third 13:2 40:12	25:21	13:5,7,8,21	29:12 34:11,21
take 51:14	three 10:20 25:21	Typically 37:20	25:17,19 30:2	35:6 36:3,5
taken 52:8,12	three-dimensio...	U	38:3 39:17 41:1	37:16 42:4
takes 8:2 46:5	25:20 26:8 27:4	U-shaped 32:20	viewable 14:2	47:11 49:2
48:10	27:6,9	32:22 34:14	26:17	51:13 52:9,10
talk 30:7,13 33:7	throw 18:5	ultimately 8:9,17	views 27:5	53:10 54:5,17
teach 29:1 39:18	time 1:16 5:5 6:6	unable 5:14 19:9	visible 49:15,16	55:9
teaches 9:19 29:2	10:8 51:11 52:9	unclear 17:22	vision 21:3 44:22	word 23:19 25:13
teachings 19:9	53:15	underneath	visual 10:3 25:1	words 10:2
technical 10:10	today 5:15,19 6:7	21:10,15	30:17	works 23:20
43:8	10:10 51:11,11	understand 5:2	W	wouldn't 16:7
Technologies 1:5	top 10:21 11:1,2	11:13 18:6,9	waive 53:11	45:10 51:1
53:4 54:4 55:8	11:13,21,21	19:4 24:7 32:8	want 4:20 6:19	written 53:22
tell 6:18	12:11 30:2	41:17 43:20	21:19 30:18	wrong 11:11
Ten 36:4	39:16	50:13	35:15 40:4	17:17
testified 4:8	topic 49:20	understanding	43:19 47:15	X
testify 4:6 52:9	topographic	34:21 39:21	50:13 51:15	X 11:18,19 12:7
thank 16:17	46:22	Understood	wanted 34:6,11	28:8
18:10 29:9	total 8:21 35:17	32:15	Washington 1:21	x-ray 49:9,11,12
51:11,13,18	TRADEMARK	unique 12:10	54:2 55:3	49:14,14
theory 41:10	1:1	unit 46:20	wave 47:2,2	x-rays 49:9
43:21 50:14	trail 40:7	UNITED 1:1	way 26:9 51:6	X-Z 13:8 42:17
thickness 7:22	transcript 52:12	use 6:8,20 8:15	we'll 51:16	Y
8:1 9:7,11,19	53:7,9 54:8	10:11,18 26:19	we're 6:2,14 10:9	Y 11:18,19
10:3 15:13,22	transcription	27:1 42:6 43:10	26:1 35:3,9	Y-Z 12:22
17:3,11 19:1,12	52:11 54:11,13	45:4 46:18	Weber 1:7 53:4	yeah 12:21 17:6
20:12,17 21:20	transition 41:6	50:17 51:2	54:4 55:8	17:17 18:1,8,11
21:22 22:5	transport 38:22	user 33:18 34:19	Wednesday 1:15	20:4 22:21 26:6
23:17 24:4,5,8	39:4,14 50:6	uses 9:12 10:14	4:1	28:2 29:12 30:3
24:11 27:8 30:9	transverse 11:20	26:22 37:4	weeks 4:18	30:6 32:20
31:6 35:11,14	travel 12:8	40:16 43:17	Welcome 36:9	34:11 40:2 42:4
38:1,22 39:3	TRIAL 1:2	44:17 49:9	wide 49:19	43:15,22 46:12
41:19,21,22	trims 44:19,20	utilized 19:12	width 27:22 28:4	years 16:12
42:9,22 45:14	trouble 20:5	V	28:10,20 29:5	yellow 28:12,17
46:3,4 48:10	true 52:11 54:10	v 1:6 53:4 54:4	29:17 30:15	Yep 31:16 36:5
50:6 51:7	54:12	55:8	37:3,13,16,22	Young 7:11,21
things 32:21	truth 4:6,7,7	vague 9:14 13:19	widths 30:1	8:8,18 9:4,10
think 6:10 10:1	52:10,10	value 33:15,18,21	Willkie 2:4 53:1	9:18 10:11,19
11:6,6,17,18	truthfully 5:15	34:4,19	wish 18:13	11:2,14 12:4
15:1 18:14 20:1	trying 20:5 24:7	values 29:18	wished 10:8	13:4 15:11,18
22:21 26:6	40:2,7	varying 23:3	witness 3:2 4:5	15:19,21 16:9
28:14 32:20	turn 7:2 12:2	vertical 11:21	9:15 10:1 11:16	16:19 17:2
40:3 41:15,19	13:2 44:5	view 10:21 11:13	12:13 13:13,20	18:17 20:10,12
43:10,16 44:16	two 19:9 20:7,21		14:22 16:3 17:6	
	22:8 26:11 35:2			

20:15 22:8,9 24:3,7 26:10 27:21 28:19,21 28:22 29:2,4 31:12,17 37:11 39:3,8,18,22 41:10,16,17,18 42:2,9,18,22 43:11 44:2 Young's 8:10,11 13:11 14:14,19 19:9,11 21:11 25:9,15 26:2,13 27:12 31:4 32:10 33:19 35:4 38:4 39:11 39:15 42:13 43:2,9,13	106 15:9 16:8,10 21:7,20 22:10 22:20 24:9 25:7 27:11,20 109 31:2,3,10,14 33:8 10c 26:10,21 28:10,12 31:12 31:17 32:2 34:2 35:1,3,10 111 31:4 36:12 37:1 12 46:9,15,19,20 47:5,8,12,20 48:14,21 49:5 50:19 12:02 1:16 4:2 12:57 36:7 13 30:5 14 7:12 140 11:6,7,9 16 7:12 38:17,21 46:20 50:3,15 50:20 164 39:2 165 38:15 39:8,14 172 37:2 40:16 1730 1:21 54:1 55:2 18 15:18 17:9 18:7,17 37:11 40:4 186 46:8 190 14:14 15:12 20:16 25:9 27:12 37:4 39:11,15 196 11:2,4,14 12:11 39:16 197 12:3,10,16,19 39:17 198 13:3,5,10,16 25:10,15 26:3 26:14,20 27:13 39:17 40:13,21 41:1 43:3,13	2 2 41:7,9,14 42:2 48:8,22 49:6 52:22 20 29:21 34:12 20036 1:21 54:2 55:3 202 1:22 54:2 202)-232-0646 53:17 202)232-0646 55:4 2024 1:16 4:1 52:14 53:4,21 54:5 55:10 2029 52:22 207 48:5 208 48:13 230 29:17 232-0646 1:22 54:2 24 29:15 240 29:16 51:5 258 29:17 26 15:19	45 15:19 46 7:7 14:7,10,13 48 8:22 49 28:17 5 5 46:17 49:6 52:14 50 7:18 52 14:6,10 54 9:1 31:15 43:9 55 28:17 34:12 6 6 7:12 26:11 31:19 60654-3406 2:7 53:2 66 41:8 66211 2:19 7 700 2:18 7015 2:17 71 44:6 72 38:19 41:9 728-9147 2:8 73 45:22 77 44:6 777-5615 2:20 79 46:1 48:6 8 8 7:12 8,529,321 1:9 812 1:21 54:1 55:2 85 48:6 86 50:1 87 45:20 9 9 46:18 913 2:20 92 50:1
Z Z 11:18,20 12:17 zoom 1:13 2:1 16:13 0 0.1 33:9 1 1 7:11 11:8 33:10 40:20 1:10 36:7 1:45 51:19 1:49 51:19,21 1[A 46:2,16 1[B 32:7,12,19 33:5 10 7:12 16:12 29:15 100 31:18 37:5 40:18,22 1003 6:4 7:2 14:7 21:18 28:18 44:11 1004 7:11 103 7:20 8:16 50:1 105 14:5		3 3 44:10 46:1 47:9 47:20 50:21 30 15:19 300 2:6 53:2 305 29:20 31 1:15 4:1 53:4 54:5 55:10 312 2:8 321 7:12 33 15:19 40:4 36 37:11 3a 34:13 3b 34:13,16 4 4 3:4 15:19 18:19 18:20 19:3 34:13,16 40 7:2,7 37:12 44 7:18	