

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

3 PROVISUR TECHNOLOGIES, INC.,)
4)
5 Petitioner,)
6 vs.) Case No. IPR2024-00235
7) U.S. Patent No. 8,529,321 B2
8 WEBER FOOD TECHNOLOGY GMBH,)
9)
10 Patent Owner.)

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12
13 VIDEOCONFERENCE DEPOSITION OF JOHN M. COLLINS, PHD
14 TAKEN ON BEHALF OF THE PATENT OWNER
15 JANUARY 10, 2025

16 VIDEOCONFERENCE DEPOSITION OF JOHN M. COLLINS,
17 PHD, produced, sworn, and examined on the 10th day of
18 January 2025, between the hours of 9:00 o'clock in the
19 forenoon and 6:00 o'clock in the evening of that date
20 via Zoom videoconference, before KARA D. INCE, a
21 Certified Court Reporter within and for the State of
22 Missouri, in a certain cause now pending UNITED STATES
23 PATENT AND TRADEMARK OFFICE, BEFORE THE PATENT TRIAL
24 AND APPEAL BOARD, wherein PROVISUR TECHNOLOGIES, INC.
25 is the Petitioner and WEBER FOOD TECHNOLOGY GMBH is
the Patent Owner.

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APPEARANCES

For the Petitioner:

MR. KEETON SHEELER (via Zoom)
WILLKIE FARR & GALLAGHER, LLP
300 North LaSalle Drive
Chicago, Illinois 60654-3406
ksheeler@willkie.com
(312) 728-9000

For the Patent Owner:

MR. PAUL R. HART (via Zoom)
ERISE IP, P.A.
7015 College Boulevard, Suite 700
Overland Park, Kansas 66211
paul.hart@eriseip.com
(913) 777-5600

MR. LANE ADAMS (via Zoom)
ERISE IP, P.A.
7015 College Boulevard, Suite 700
Overland Park, Kansas 66211
lane.adams@eriseip.com
(913) 777-5600

Also present:

Mr. Ethan Buresh - intern (via Zoom)

The Court Reporter:

Ms. Kara D. Ince, RPR, CCR (via Zoom)
Missouri CCR No. 1348
Lexitas Legal
1608 Locust Street
Kansas City, Missouri 64108
(816) 221-1160

* * * * *

(The deposition commenced at 9:06 a.m.)

THE COURT REPORTER: We are on the record.

My name is Kara Ince. I am a Missouri Certified Court Reporter, CCR License No. 1348. Today's date is January 10, 2025. Would the Witness please raise their right hand.

JOHN M. COLLINS, PHD,
of lawful age, being produced, sworn, and examined
on behalf of the Patent Owner, deposes and says:

EXAMINATION

BY MR. HART:

Q. Good morning, Dr. Collins.

A. Good morning.

Q. Can you state your full name for the record to get us started.

A. Sure. My name is John Mulloy Collins, Jr. That's M-U-L-L-O-Y.

Q. The court reporter did me a favor of walking through the ground rules, so I won't re-cover those, but I do just want to ask: Is there any reason, medical, or otherwise that you might be unable to answer my questions fully and truthfully today?

A. No.

1 Q. Okay. Very good. I'd like to start with
2 the Young reference Exhibit 1004 in this proceeding.

3 (Deposition Exhibit No. 1004 was marked
4 for identification.)

5 BY MR. HART:

6 Q. I understand you have a clean copy
7 electronically; is that right?

8 A. I can pull it up, yep.

9 Q. Yeah.

10 A. And I got a second screen that I'm looking
11 at.

12 Q. Okay.

13 A. All right. It's open.

14 Q. Yeah. Can I have you turn to Column 1 of
15 the Young reference?

16 A. I'm there.

17 Q. All right. Very good. The field of
18 Invention starting in Line 7 states, The invention
19 is directed to an apparatus and method for
20 butchering pork and other meat, more particularly,
21 the invention is directed to apparatus and method
22 for separating loin and belly portions from a side
23 of pork through scribing and loin pulling
24 operations.

25 Do you see that?

1 **A. I do.**

2 Q. Does Young include any detailed
3 description of separating meat products, other than
4 loin and belly portions from a side of pork?

5 **A. I don't recall.**

6 Q. Has your analysis in this case of Young
7 focused on its description of separating loin and
8 belly portions from a side of pork?

9 **A. Well, I've certainly studied the**
10 **specification and that was the example in the**
11 **specification, the one embodiment, but it's not**
12 **limited to that.**

13 Q. Well, you said you're not aware of whether
14 Young described separating other types of meat
15 products; is that right?

16 **A. No.**

17 Q. Okay. And so --

18 **A. But -- I --**

19 Q. Go ahead, finish your answer.

20 **A. I thought I was clear, I don't recall if**
21 **there was an explicit description of other meat**
22 **products, other than referencing that it's not**
23 **limited to only pork loin pulling.**

24 Q. Let me ask you that this way -- and this
25 is really just to set the table for some

1 questions -- have you discussed using Young's system
2 or how Young's system would separate meat products,
3 other than separating loin and belly portions from a
4 side of pork?

5 **A. I don't think I've discussed specific**
6 **other types of meat, but, certainly, that the**
7 **teachings apply, and the specification says that the**
8 **teachings apply to other meats.**

9 Q. Can I have you scroll down to Column 5?

10 **A. I'm there.**

11 Q. Toward the bottom of Column 5 starting at
12 around Line 58, Young states, a loin knife assembly
13 100 is provided to separate the pork loin from the
14 belly, i.e., to pull the loin after it has been
15 scribed by a scribe saw, assembly 50.

16 Do you see that?

17 **A. I do.**

18 Q. Can I have you scroll up to Young's
19 Figure 10C?

20 **A. I'm there.**

21 Q. Does Figure 10C show where the loin knife
22 separates pork loin from pork belly?

23 **A. Yes, it does.**

24 Q. And where is that indicated in Figure 10C?

25 **A. I'm pretty sure it's Line 3a, but I'd have**

1 **to double-check.**

2 Q. Yeah, could you double-check? I believe
3 you have discussed Figure 10C at length in your
4 declarations.

5 A. **In Line 20, starting at Line 55, it**
6 **describes the -- the different cutlines; 3a, 3b, and**
7 **4. Those are portions of the cutline.**

8 Q. And is that -- you said Line 20.

9 I'm -- did you mean Column 20?

10 A. **I'm sorry, Column 20, about Line 55.**

11 Q. And so 3a, 3b, and 4 indicate the loin
12 pull cut -- is that right? -- as we see in
13 Figure 10C?

14 A. **That's correct.**

15 Q. Does Figure 10C also show where the scribe
16 saw cuts into the pork product?

17 A. **I believe it's Line 2. Let me check.**
18 **Yeah, again, in Line -- in Column 20, starting at**
19 **about Line 38, it says, The describe -- the scribe**
20 **saw cut is designated by Line 2.**

21 Q. While we have Figure 10C in front of us,
22 I'd like to understand which parts of Figure 10C are
23 lean, and which parts are fat.

24 Which -- given what we see in 10C, which
25 portions of this meat product are fat?

1 A. So my recollection is that the lean/fat
2 separation line -- so the -- where the -- where the
3 fat covers the -- the lean meat is designated by
4 Line 6. So the -- the -- the material on the
5 outside -- so looking at Figure 10C, the portion on
6 the right and lower piece on -- relative to Line 6,
7 that's fat. And, then, the belly portion is left of
8 Line 3a. So the lean meat portion is inside of
9 line -- it would be Lines 3b, 4, and 3a. Inside of
10 that is the meat portion with a slight layer of fat
11 around it, which is -- and that layer of fat is
12 controllable by the -- by the operator.

13 Q. That's the retained fat after the pull is
14 performed?

15 A. That's correct.

16 Q. So everything above and to the left of
17 Line 6 is either lean meat or bone; is that fair?

18 A. No, because --

19 MR. SHEELER: Objection to form.

20 A. No, because Line 6 continues into the
21 belly portion.

22 BY MR. HART:

23 Q. What is the -- what's the makeup of the
24 belly portion?

25 A. It's another meat, but I thought you were

1 **talking about the line pull.**

2 Q. There are two separate cuts here --
3 correct? -- the scribe cut, and then the belly pull
4 cut; is that right?

5 A. You can -- yes, they're cuts. One's made
6 by a saw; the other one's made by a blade.

7 Q. And that -- the products after both -- the
8 one -- one saw and one cut are made, is a loin
9 product and a belly product; is that right?

10 A. That's correct.

11 Q. And your analysis, with respect to
12 measuring a fat cover and removing a fat cover, had
13 that focused on the one or the other of those, or
14 does it include both the -- the loin and the belly
15 portions?

16 A. Well, there's -- there's a cut that does
17 both separate the -- the fat from the loin portion,
18 and that cut also separates the loin portion from
19 the -- from the belly portion.

20 Q. So you've not analyzed removing fat from a
21 lean belly portion as part of your mapping to the
22 claims of the '321 Patent; is that right?

23 A. I -- basically -- I'm not sure about your
24 question because what I was -- I was reading was the
25 Preferred Embodiment.

1 Q. I'm just trying to, you know, essentially
2 set the table here to understand that at -- I
3 believe I interpreted your last answer to be that
4 there is fat removed from the loin portion, and that
5 occurs when the loin is separated from the belly
6 portion; is that right?

7 **A. In the Preferred Embodiment, that's**
8 **correct.**

9 Q. All right. So I'd like to talk about the
10 individual components of that Loin Pull Cut 3a, 3b,
11 and 4 that we see here in Figure 10C. Let's start
12 with cutline 3a.

13 Is there any fat cover on either side of
14 cutline 3a?

15 **A. Again, this -- this is a -- an**
16 **illustration. It's a schematic. So you really**
17 **can't tell dimensions from this. So you can't tell.**

18 Q. Do you understand what the makeup of a
19 pork side is at the portion indicated by Line 3a?

20 **A. Well, part of the issue is that it's**
21 **unclear exactly where 3a ends and 4 starts.**

22 Q. If we assume, just for purposes of
23 understanding what's depicted here, that 3a goes
24 from the top edge where the ribs are down to Line 6,
25 where the fat/lean separation line is, is that

1 portion indicated by 3a cutting into fat or is that
2 lean meat?

3 **A. Well, the way you've defined it, it's not**
4 **cutting into the fat layer there; so no.**

5 Q. Cutline 4 that we see there at the --
6 essentially, the -- the bottom, that loin pull cut,
7 what is that cutting through?

8 **A. That's meant to cut through fat. Again,**
9 **assuming that 4 stops at the line -- intersection of**
10 **Line 6.**

11 Q. Okay. Can I have you turn to Column 20 in
12 Young, starting at Line 66, the very end of
13 Column 20?

14 **A. Sorry, which line?**

15 Q. Sure.
16 Line 66, the second-to-last line in
17 Column 20.

18 Starting at that line, Young states, The
19 bottom of Knife Blade 121, also generally follows
20 Line 4 shown in Figure 10B, which generally travels
21 below Blade Bone 5, proximate the fat/lean
22 separation area along the bottom of the pork side.

23 Do you see that?

24 **A. Yes.**

25 Q. How does Blade Bone 5 play a role in the

1 cutting path of Line 4, if at all?

2 A. My recollection, you -- there's -- there's
3 a check. So, for example, on Figure 14, there's
4 a -- a block in the Logic block 264, which asked:
5 Does blade bone project into fat area, and if yes,
6 then it goes to block 266, which says, Modify
7 starting points to miss blade bone, and then it
8 continues to -- to follow the logic. So you don't
9 want the blade to hit the bone.

10 Q. Can I have you scroll down to Column 25?

11 A. I'm there.

12 Q. All right. Starting at Line 25 in
13 Column 25, I believe, this is describing what you
14 just referenced in Figure 14, but I'm going to read
15 it into the record and ask you a follow-up question
16 about it.

17 So starting on Line 25, Young states in
18 Column 25, The location of the blade bone is checked
19 to determine whether the bottom of the blade bone
20 projects into the fat cover of the pork side. In
21 some pork sides, this may be the case and could
22 cause the standard starting point generation routine
23 in block 262 to cut the bottom of the knife blade to
24 hit the blade bone. This comparison may be
25 performed by comparing the end fat/lean separation

1 line to the bottom point of blade bone, both of
2 which were previously calculated in block 256. If
3 the blade bone does project into the fat cover of
4 the pork side, control preferably passes to block
5 266 to modify the starting points of Servos 152,
6 154, 156, and 157 to lower the starting point of the
7 bottom of the knife blade to miss the blade bone.

8 For example, the bottom of the knife blade
9 may be controlled to be located at a fixed distance
10 from the bottom of the blade bone.

11 Do you see that?

12 **A. I do.**

13 Q. Okay. So -- and I believe you've
14 confirmed this, but I'm going to ask you again: So
15 you would agree that Young expressly teaches the
16 possibility of modifying the cutline 4 based on the
17 location of the T-shaped Blade Bone 5?

18 **A. I think that's fair, yes.**

19 Q. Can we scroll up just a bit in Column 25
20 to Lines 22 to 24? Young teaches that the location
21 of the bottom of the loin knife should be .1 inches
22 from the end fat/lean separation line generated in
23 Routine 240.

24 Do you see that?

25 **A. I do.**

1 Q. Is that .1 inches the customizable amount
2 of fat retained after the loin pull?

3 A. Yes, it is.

4 Q. Okay. Am I interpreting Young correctly
5 that if the blade bone has not projected into the
6 fat cover, Young teaches cutline 4 should track the
7 internal fat/lean separation line by that customable
8 delta distance?

9 MR. SHEELER: Objection. Form.

10 A. Yeah, as best it can.

11 BY MR. HART:

12 Q. Okay. So Young expressly teaches that the
13 location of the fat/lean separation line can dictate
14 the cutline, and also expressly teaches that the
15 location of the blade bone can dictate the cutline.

16 Does Young include any similar express
17 teaching that the thickness of the fat cover can
18 dictate the cutline?

19 A. Oh, exactly, it detects it.

20 MR. SHEELER: Same objection.

21 THE WITNESS: Sorry. Say it again.

22 A. So, yes.

23 THE WITNESS: Go ahead, Keeton.

24 MR. SHEELER: Just same objection.

25 You can answer the question.

1 A. Yeah, it -- it directly does. The
2 fat/lean separation line is where the -- the height
3 of that is -- is the layer of fat; so it directly
4 measures the -- the thickness of the fat.

5 BY MR. HART:

6 Q. Because it tracks the internal fat/lean
7 separation line and you interpret that fat/lean
8 separation line to be a measurement of that
9 thickness, that is how you interpret Young to
10 expressly teach considering the fat thickness when
11 it determines the cutline? And do I have that
12 right?

13 A. No.

14 Q. Okay. Can you explain it to me so I
15 can --

16 A. Sure.

17 Q. Okay.

18 A. The fat/lean separation line is a
19 characteristic of the meat product. It's where
20 the -- the fat and the lean meat -- lean meat meet,
21 double -- M-double-E-E-T. There's a line, that
22 the -- which is, then, through a vision system is
23 calculated with a series of points, and those points
24 have dimensions associated with them, and those
25 dimensions they -- for example, the Y-dimension,

1 will correspond to the height of the -- of where
2 that separation line is, and that height is the
3 thickness of the fat.

4 Q. The height between that point and what?

5 A. And in this case, for example, talking
6 about the bottom and the platen where the pork loin
7 is sitting. And, then, again, it talks about all
8 the other dimensions. So you can also look at the
9 outer edgeline because it looks -- the system
10 teaches to look at the entire pork loin -- or pork
11 side, and you can see the side, you can see the --
12 where the -- the fat and the meat meet, and that --
13 that case, the X-dimension, if you will, that will
14 be the thickness of the fat.

15 Q. You discuss the Figure 12 flow chart in
16 Young at length in your declaration. I'd like to
17 dig into Young's Figure 12 flow chart description.

18 Can I have you turn to Young at Column 22,
19 starting at Line 32?

20 A. I'm there.

21 Q. All right. So starting at Line 32 in
22 Column 22, Young states, Figure 12 shows the overall
23 flow and the Preferred Profile Generating
24 Routine 230. In Routine 230, two separate images
25 are preferably taken or top and end views of the

1 pork side of blocks 232 and 234. In block 232, top
2 and end views are taken by Cameras 196 and 197 with
3 Lights 140 activated to create shadowed top and end
4 images of the pork side.

5 Do you see that?

6 **A. I do.**

7 Q. So Young generates a top view of the pork
8 side as it sits on the platen taken by one camera,
9 and then generates a end view of the pork side as it
10 sits on the platen taken by a separate camera; is
11 that right?

12 **A. That's correct.**

13 Q. Can I have you scroll back to Column 20 in
14 Young, starting at Line 31?

15 **A. I'm there.**

16 Q. Very good.

17 Column 20, starting at Line 31, Young
18 states, As shown in Figures 10A through 10C, a
19 typical Pork Side 1 includes a Backbone 7, which
20 follows a generally curving profile viewed from
21 above. A fat/lean separation, Line 6, is shown
22 along the outer edge of Pork Side 1 when viewed from
23 the top and end views. In a T-shape bone, Blade --
24 Blade Bone 5 is shown viewed from the end of Pork
25 Side 1.

1 Do you see that?

2 **A. I do.**

3 Q. Can we go back to those figures,
4 Figure 10A and Figure 10C? I'd like to make sure I
5 understand what these are depicting.

6 Between Figures 10A and 10C, only 10C
7 depicts the T-shaped blade bone; correct?

8 **A. That's correct.**

9 Q. Okay. Am I right that given Young's
10 description of Column 20, that the Figure 10C is
11 depicting an end view of the pork side as it sits on
12 the platen?

13 **A. That would be fair.**

14 Q. And, then, is 10A the top view of the pork
15 side as it sits on the platen?

16 **A. That's my understanding, yes.**

17 Q. As the pork side travels through Young's
18 machine, if we focus on 10A, what direction is the
19 pork side moving as the platen moves it through the
20 Young machine?

21 **A. It moves from the right to the left,
22 looking at the illustration.**

23 Q. Okay. And for 10C, same question: What
24 direction is the pork product moving along the
25 platen?

1 **A. Into -- out of the page, towards the**
2 **viewer.**

3 Q. Got it.

4 Sticking with Figure 10C, how is this pork
5 side oriented on the platen in Young's machine?

6 **A. I believe more or less as it's shown.**

7 Q. Okay. So the platen would be horizontal
8 underneath the -- the belly and the fat cap, as we
9 see in 10C?

10 **A. Yeah, and I'm not sure if it's -- if it's**
11 **flat or if it's -- and if it's curved.**

12 Q. Okay. In 10A, because this is a top view
13 image taken from above, where is the platen? Is the
14 platen surrounding this pork side when viewed from
15 above?

16 **A. Well, the platen provides a support, so**
17 **it's under it.**

18 Q. Under it.

19 And in terms of what portions of the
20 platen we can see from this top view illustrated in
21 10A, is it, essentially, everything that expands
22 beyond the border of the pork side depicted in 10A?

23 **A. Yeah, from the -- that -- if you're**
24 **talking about the -- the top view camera.**

25 Q. Okay. So in 10A, we can see the portions

1 of the platen outside the border of the pork side,
2 and in 10C, we can see the platen as it exists
3 underneath the pork side depicted in -- in this
4 figure; is that right?

5 **A. 10C doesn't show the platen.**

6 Q. In -- in Young's machine, when
7 implemented, the end view, as depicted in 10C, would
8 show the platen on which the pork side rests;
9 correct?

10 **A. I think it could be implemented a number**
11 **of different ways. It could be masked so the camera**
12 **only sees the meat. It doesn't have to see the**
13 **platen.**

14 Q. Let's turn to your Supplemental
15 Declaration submitted in this proceeding,
16 Exhibit 1035.

17 (Deposition Exhibit No. 1035 was marked
18 for identification.)

19 BY MR. HART:

20 Q. And I'm going to start on page 6 of that
21 document when you have it up.

22 **A. I'm there.**

23 Q. All right. Very good.

24 Starting on page 6, you include a
25 Section 9.A.1 titled, Young Teaches Determination of

1 the Fat Thickness.

2 Do you see that?

3 A. I do.

4 Q. And in this section, you opine that Young
5 teaches a system that determines a fat/lean
6 separation line and an edgeline --

7 (Reporter clarification.)

8 MR. HART: And an edgeline.

9 THE COURT REPORTER: Thank you.

10 MR. HART: Can you hear me okay now?

11 THE COURT REPORTER: Yes.

12 BY MR. HART:

13 Q. Do you see that discussion, Dr. Collins?

14 A. I do.

15 Q. You cite Young, Column 23, Lines 20 to 28,
16 along with Figures 12 through 13 in support of this
17 statement, Young teaches that its system determines
18 a fat/lean separation line and an edgeline.

19 Do you see that?

20 A. I do.

21 Q. I'd like to turn to that portion of Young,
22 Column 23, 20 to 28, and I'd actually like to start
23 at the beginning of that paragraph, which is,
24 approximately, Line 12.

25 A. I'm there.

1 Q. All right. So this paragraph starts next
2 in block 246, Routine 240 generates a fat/lean
3 separation line and an edgeline from the
4 non-shadowed top view image.

5 Do you see that?

6 A. **I do.**

7 Q. If we go back to Figure 10A, which we've
8 discussed is the top view image of the pork side in
9 Young, where is the fat/lean separation line that is
10 determined in this portion of Young you've cited?

11 A. **Yeah, so in Figure 10A, it's still Line --**
12 **Line 6.**

13 Q. This spans from the left edge to the right
14 edge at -- that we see in Figure 10A; is that right?

15 A. **Correct.**

16 Q. And is that fat/lean separation line where
17 the lean meat transitions to fat in the pork side?

18 A. **From that view, yes.**

19 Q. Is that paragraph that you cited in
20 support states in the last sentence, The edgeline
21 representing the outer surface of the pork side,
22 proximate, fat/lean line, will be distinguished by
23 the interface between the fat covering and the
24 platen or other supporting structure, proximate, the
25 edge of the pork side.

1 Do you see that?

2 A. I do.

3 Q. Where is the edgeline in this it top view
4 depicted in Figure 10A?

5 A. The -- well, there are a number of
6 edgelines. There are the top ones, side ones. So
7 the edgeline is the line calculated as the --
8 representing the perimeter of the side of pork.

9 Q. And based on that description, which is
10 describing an edgeline that is distinguished by the
11 interface between that fat covering and the platen,
12 is there fat covering on any of these sides,
13 where -- either the top, the bottom, the left, or
14 the right depicted in Figure 10A?

15 A. I don't understand your question. The
16 outer edge -- everything is inside of the outer
17 edge. So the -- there's fat at the border of the --
18 of the side of beef -- or side of pork.

19 Q. Is there fat on all four sides of this
20 pork side?

21 A. Well, I guess, technically, yes.
22 There's -- not necessarily fat is not covering
23 everything.

24 Q. Got it.

25 Is the bottom portion going to be all

1 fat -- the -- the bottom edge of this pork side
2 depicted in Figure 10A, is that going to be all fat?

3 A. Well, you can look at Figure 10C, and that
4 shows that the -- the fat layer is definitely under
5 the pork loin, but it doesn't extend over the entire
6 belly portion.

7 Q. Okay. And the belly portion is going to
8 be against the platen; correct?

9 A. A portion of it will be.

10 Q. Yeah.

11 And in Figure 10A, that's going to be
12 behind -- we're seeing the top of the meat
13 product -- or the pork side in Figure 10A; correct?

14 A. Correct.

15 Q. And the belly portion is going to be on
16 the bottom against the platen; correct?

17 A. Well, the belly portion is -- no, the
18 belly portion's to the left, and at the bottom of --
19 the belly portion's on the platen.

20 Q. To the left in which figure?

21 A. I'm sorry, Figure 10C.

22 Q. Okay. And if we focus on 10A ... What is
23 the edgeline that distinguishes the interface
24 between the fat covering and the platen in
25 Figure 10A; the top view?

1 A. The top view shows the fat separation line
2 from the top; so it's the side.

3 Q. So what's the side?

4 A. So the top view, you don't -- you don't
5 see the -- the distance from the platen because the
6 platen is into and out of the page. You see the
7 dist- -- the thickness of the fat viewed from the
8 top. So it's from the -- the side of the beef --
9 so -- or the pork -- so the bottom in Figure 10A,
10 the outside of that, is where the fat stops, and
11 then it goes up the thickness to Line 6.

12 Q. Okay. So between the bottom edge of the
13 pork side depicted in 10A and Line 6 is the delta
14 between that fat/lean separation line and the -- and
15 the edgeline; is that right?

16 A. That's correct. So the system sees the
17 fat separation transition area and creates points
18 along those and interpolates those points to create
19 a line, and that gives it all of the dimensions
20 of -- and compare that to the outside, and that
21 gives you the thickness of the fat.

22 Q. If we go back to your Paragraph 16 in your
23 Supplemental Declaration, Exhibit 1035 ...

24 A. I'm there.

25 Q. All right. The very last sentence in that

1 paragraph states, a POSA would understand Young's
2 disclosure as teaching the measurement of height
3 along any desire to find points, such as between the
4 fat/lean line and the edgeline or any other
5 desirable line connecting two defined points.

6 Do you see that?

7 **A. I do.**

8 Q. In Paragraph 17 just below that, you opine
9 that, The distance between the fat/lean separation
10 line and the edgeline corresponds to the thickness
11 of the fat cover.

12 Do you see that?

13 **A. I do.**

14 Q. You, then, provide an exemplary
15 illustration to demonstrate that concept.

16 Do you see the illustration there?

17 **A. I do.**

18 Q. Your measurement illustration here takes
19 into consideration the edgeline located on the
20 platen, and the fat/lean separation line located
21 above it.

22 Am I understanding that correctly?

23 **A. That's correct.**

24 Q. The delta between those lines represents
25 fat thickness only if the fat cover is touching the

1 platen; correct?

2 A. Well, not necessarily because the -- the
3 camera will see the bottom of the -- of the meat
4 product, and, of course, if the -- for most
5 instances, the bottom of the meat product will be
6 resting on the platen, but it doesn't have to be.

7 Q. So if the edgeline is where the fat
8 touches the platen -- because that is being used to
9 determine a -- a thickness of fat cover, pursuant to
10 your interpretation of Young -- once that fat cover
11 starts to transition away from the platen and is no
12 longer touching, the -- the platen line and the
13 fat/lean separation line no longer indicate the
14 thickness of the fat; correct?

15 A. First, you didn't characterize my
16 testimony and -- accurately.

17 The fat thickness is the distance between
18 the -- in this case, the bottom edgeline and the
19 fat/lean separation line. The edgeline can
20 correspond to the -- to the platen if it's in
21 contact, but it doesn't have to.

22 Q. I'm going to transition next to the
23 Ground 2 combination of Young and Norrie.

24 MR. HART: Why don't we take a -- we're
25 not quite an hour in -- why don't we take a quick

1 5-minute break, if you guys don't mind.

2 (A recess was taken from 9:46 a.m. to
3 9:54 a.m.)

4 BY MR. HART:

5 Q. All right. Dr. Collins, I'd like you to
6 turn to page 12 in your Supplemental Declaration,
7 Exhibit 1035.

8 A. I'm there.

9 Q. Okay. It's -- page starts with
10 Paragraph 29 in which you state, A POSA would
11 understand that the teachings of Norrie could be
12 incorporated into Young's system via software
13 change, where the software in Young's Controller 172
14 is modified to utilize Young's multiple cameras to
15 measure the thickness of the fat cover, and cut
16 based on that determined thickness.

17 Do you see that?

18 A. I do.

19 Q. Where have you described how,
20 specifically, Young's process changes if it were, in
21 fact, modified to incorporated Norrie's software?

22 A. I thought my report covered that pretty
23 well. I mean, that, basically, what Young teaches
24 is getting all of those dimensions and using those
25 dimensions to determine where to cut the -- the meat

1 from the -- from the fat. And, explicitly, that
2 Norrie teaches to say: All right. Well, take the
3 dimensions that you have and explicitly output a fat
4 layer. So all that is, is a simple mathematical,
5 you know, equation of, you know, $X-1$ minus $X-2$ or
6 $Y-1$ minus $Y-2$, and that give the -- explicitly,
7 gives the thickness of the fat. So any -- any POSA
8 would understand that.

9 Q. So it's just the -- what comes from Norrie
10 in this proposal is just the math equation that
11 separate- -- that calculates the distance between
12 two lines?

13 MR. SHEELER: Objection to form.

14 A. I would say it's -- it's explicit. I
15 believe in Young that that dimension is known, but
16 it's inexplicitly taught in Norrie.

17 BY MR. HART:

18 Q. So it's explicit in Young and it's
19 explicit in Norrie to calculate fat thickness.

20 Is that your testimony?

21 A. I believe a POSA would definitely know
22 that you're calculating that the fat thickness, for
23 example, as I've described -- that the height of the
24 fat/lean separation line, which is a mathematical
25 construct, so with dimensions, that is the thickness

1 **of the -- of the fat. So it teaches that exactly.**

2 Q. And in this last answer that you just
3 finished, were you talking about Young's teachings
4 or Norrie's teachings?

5 A. I was talking about Young's -- Young's
6 teachings, and then Norrie, explicitly, calls out
7 the fat thickness.

8 Q. I'd like to understand what changes in
9 Young's system pursuant to this supposed
10 modification of incorporating Norrie's software or
11 algorithm.

12 So we have --

13 (Reporter clarification.)

14 (Discussion off the record.)

15 MR. HART: I think that was the end of my
16 question.

17 BY MR. HART:

18 Q. My question is -- or, actually, was a
19 preface to a question -- so I'd like to explore what
20 changes in Young's system are made pursuant to this
21 proposed modification of incorporating Norrie's
22 software or algorithm. And I'd like to ask you a
23 hypothetical. So let's assume Pork Side A is
24 processed in an unmodified Young system and Pork
25 Side B is processed by Young's system implementing

1 Norrie's software as you've suggested here in
2 Paragraph 29, how would the cuts differ between Pork
3 Side A and Pork Side B?

4 **A. Well, that would -- that would depend on**
5 **the specific situation.**

6 Q. How might the cuts differ between Pork
7 Side A and Pork Side B?

8 **A. They don't have to.**

9 Q. When would they?

10 **A. Well, I think what -- what could happen is**
11 **the -- because there would be an explicit output of**
12 **what the fat thickness is, that the -- that the**
13 **operator can choose to change the -- the amount of**
14 **fat left -- the extra fat; so that could change the**
15 **profile, as an example.**

16 Q. That's the user setting that dictates how
17 much retained fat remains after the loin pull; is
18 that right?

19 **A. That's correct.**

20 Q. But during the actual processing, as the
21 cuts are being determined -- the cutlines are being
22 determined, and then the actual pull operation is
23 made, how would those cuts differ with Pork Side A
24 and Pork Side B, if at all?

25 **A. I'd say it depends on the situation.**

1 Q. What scenarios have you envisioned here in
2 which the cutlines would differ between Pork Side A
3 and Pork Side B?

4 MR. SHEELER: Objection. Accumulative.

5 A. Well, I can -- you know, I can think of
6 one example, is that if the operator puts in a -- an
7 offset, which is larger than the calculated fat
8 thickness, then that would be an error signal.

9 BY MR. HART:

10 Q. And in that scenario, Young's system --
11 because it makes an expressed calculation of the fat
12 thickness -- would be comparing that fat thickness
13 calculation to the user-defined retained fat, and if
14 the retained fat is larger than the fat thickness,
15 that would return an error signal? Is that your
16 answer?

17 A. I believe you meant to say "Norrie."

18 Q. I meant Young's system modified pursuant
19 to Norrie in that question.

20 A. Yeah, that would be an example.

21 Q. Assuming the user is not intending to
22 retain more fat than there is fat to retain, can you
23 think of any other scenarios in which the cuts
24 differ between Pork Side A and Pork Side B?

25 A. I really haven't given it much thought; so

1 I'd -- I'd have to think about it.

2 Q. How about the process of determining the
3 cutlines? How would the process of determining the
4 cutlines differ between Pork Side A and Pork Side B?

5 A. I don't believe there's a -- there's a
6 fundamental difference. So, again, the -- the
7 line -- the fat/lean separation line is a
8 mathematical construct. It's -- it's -- there's no
9 physical line in the product. There's a transition
10 from fat to meat. And the vision systems determine
11 that based on the reflectivity, and there are
12 cameras which -- which make that happen, and there's
13 lighting conditions. So, again, all of that is --
14 does not -- there's not a specific type of camera or
15 a specific light that the patents teach a wide range
16 of lighting sources in imaging systems.

17 Q. Can I have you scroll down to page 17 in
18 your Supplemental Declaration, Exhibit 1035?

19 A. I'm there.

20 Q. So on page 17, Section 11, you discuss the
21 Ground 3, which is a proposed combination of Johnson
22 and Belk; is that right?

23 A. That's correct.

24 Q. I'd like to talk about Belk a little bit.
25 Do you have access to a clean copy of the

1 Belk reference?

2 A. I do.

3 Q. Can I have you pull that up?

4 A. I got it.

5 Q. On the cover page, in the Abstract, Belk
6 states, An image analysis IA system for scoring
7 characteristics predictive of palatability and yield
8 of a meat animal carcass were cut. The IA system
9 uses an imaging device data processing unit for
10 processing image data, and an output device for
11 output of processed data to the user. Also
12 discloses the method or using the AI -- or sorry --
13 the IA system in predicting palatability, yield, or
14 defect conditions of a meat animal carcass or cut.
15 The results are identified with a particular piece
16 of meat for further grading, sortation, and
17 processing.

18 You see that?

19 A. I do.

20 Q. What is the palatability of a piece of
21 meat?

22 A. My understanding is the -- how well it
23 tastes when prepared.

24 Q. And how do image analysis systems
25 determine how good a piece of meat is going to

1 taste?

2 A. Well, what Belk teaches -- and I'd have to
3 go back and quote it accurately -- but it -- it,
4 basically, is able to look at the marbling of the
5 meat; so it's the distribution of fat within --
6 within the lean meat that's a -- a characteristic,
7 but also it talks about the -- the pH and other
8 factors.

9 Q. "pH," being level --

10 A. Acidity, yeah.

11 Q. And base?

12 A. Yeah.

13 (Reporter clarification.)

14 MR. HART: The scale that measures acid to
15 base.

16 BY MR. HART:

17 Q. Does Johnson describe a machine that cuts
18 meat products? And let me restate that question.
19 I -- my outline was wrong.

20 Does Belk describe a machine that cuts the
21 meat?

22 A. No. Belk teaches how to characterize a
23 number of parameters of a meat product, including
24 its dimensions.

25 Q. Can I have you scroll down to Paragraph 62

1 of your Supplemental Declaration, Exhibit 1035?

2 **A. I'm there.**

3 Q. In this paragraph, you discuss Belk's
4 teachings, that it can determine a -- determine
5 characteristics in an area of interest.

6 Do you see that "area of interest"
7 discussion toward the bottom of page 27?

8 **A. I see that.**

9 Q. And in the last sentence that begins on
10 page 27, you state, I understand Dr. Reinholtz
11 testified that he believes Belk's area of interest
12 would be understood by a POA to be a small section
13 of the image from which Belk would be unable to
14 determine the thickness of the fat cover.

15 Do you see that?

16 **A. I do.**

17 Q. Did you disagree with Dr. Reinholtz, that
18 Belk's area of interest is a small portion of a meat
19 product, rather than a macro assessment of the meat
20 product, that would enable measuring of fat cover?

21 **A. That's a pretty compound question.**

22 You know, my opinion is that it's not
23 limited to a small area. You could look at a small
24 area or you could look at the entire meat product.
25 That's up to the user. And I believe that's the

1 same way that the term is used -- or a similar term
2 is used in the '321.

3 Q. Which term?

4 A. Like, an area of interest -- or I have to
5 go back and check.

6 Q. Toward the end of Paragraph 62 in your
7 Supplemental Declaration, you note that you find no
8 teaching in Belk, limiting Belk's area of interest
9 to an arbitrarily and undefined small section.

10 Do you see that?

11 A. I do.

12 Q. And in support, you say -- you cite Belk,
13 Column 15, Lines 22 to 31, which is Belk's Claim 30.

14 What does Claim 30 in Belk tell us about
15 whether it's area of interest teachings target small
16 areas or allow for a macro assessment?

17 A. Yeah, so line -- or Claim 30 is talking
18 about, you know, being -- characteristics of the
19 area of interest, which can be the -- the entire
20 piece of meat. You know, one of the examples, they
21 talk about yield as a- -- as an output that was -- I
22 think, even in the Abstract. An important factor
23 that goes into calculating yield is the fat cover.

24 Q. Claim 30 doesn't discuss calculating a fat
25 cover, does it?

1 A. Well, the surface area, I guess, that
2 would be the cover. So if we wanted to measure the
3 fat cover, it can -- if -- that could be the area of
4 interest.

5 Q. Where does Claim 30 discuss "yield"?

6 A. I -- I don't believe it -- these are
7 factors which can impact yield, but I don't think
8 that phrase is there.

9 Q. Does Belk, in general -- just considering
10 the entirety of Belk -- expressly discuss measuring
11 of fat cover or fat thickness?

12 MR. SHEELER: Objection. Form.

13 A. Sure.

14 It talks about measuring -- characterizing
15 yields, which is directly impacted by the fat --
16 thickness of the fat cover.

17 BY MR. HART:

18 Q. But does it expressly talk about the fat
19 cover?

20 A. I don't recall. I'd have to go back and
21 look at it, but a person of ordinary skill would
22 understand that you're able to distinguish and
23 characterize all these areas of the -- of a piece of
24 meat. So everything from the marbling, which is the
25 fat that's inside of the lean meat, to the fat

1 that's outside of the lean meat. I mean, that's --
2 a POSA would certainly understand that. And, again,
3 it's an important factor in characterizing the yield
4 of a -- of a piece of meat.

5 Q. Turning back to Column -- I'm sorry --
6 Paragraphs --

7 THE WITNESS: There you go.

8 MR. HART: Did I cut out again?

9 THE WITNESS: No, no, I was just reminding
10 Keeton to mute.

11 MR. HART: I'm sure he's typing all nice
12 things about me.

13 THE WITNESS: Or about me.

14 BY MR. HART:

15 Q. Turning back to Paragraph 62 in your
16 Supplemental Declaration, the very last sentence
17 there, you state, In fact, Belk contemplates that
18 its area of interest may, in one embodiment,
19 comprise at least an entire muscle of the carcass.

20 Do you see that?

21 A. I do.

22 Q. And you cite Belk, Column 9, Line 7
23 through 25, in support there. I'd like to have you
24 scroll to that portion of that Belk's teaching,
25 Column 9, Lines 7 to 25.

1 So this excerpt in Belk begins by
2 referencing a muscle of interest.

3 Do you see that within the portion of the
4 image taken from the muscle of interest?

5 **A. Yep.**

6 Q. When you refer to the Entire muscle of the
7 carcass in your declaration, is that the same as
8 Belk's muscle of interest?

9 **A. It's consistent, yeah.**

10 Q. So you believe that Belk teaches that an
11 area of interest may be an entire muscle of the
12 carcass, which Belk calls the muscle of interest?
13 Is that -- do I have that right?

14 **A. I -- I think you're -- you're mixing**
15 **things.**

16 Q. Okay. What did I mix there?

17 **A. Well, you know, he talks about the -- the**
18 **muscle, and then Line -- in Line 11, it says, These**
19 **scores can, then, be sent to the output device, 24,**
20 **to be displayed in numerical format or retained to**
21 **calculate quality, and yield determining**
22 **characteristics as described below.**

23 You know, as I said before, the important
24 element of yield is the -- is the fat cover, and you
25 need to have -- know what the yield is, you're

1 **looking at the entirety of the -- of the piece of**
2 **meat.**

3 Q. And I'm just trying to pin down the
4 language that you were using in your declaration in
5 order to understand what you're saying so I can ask
6 some questions about it.

7 So when you talk about an Entire muscle of
8 the carcass, is that a reference to Belk's muscle of
9 interest?

10 A. They're -- you're consistent. They don't
11 have to be the same thing. It can -- there -- they
12 can have an entire muscle or it can have a
13 particular one of interest; so they're consistent.

14 Q. So you're --

15 A. But they don't have to be the same thing.

16 Q. The declaration says, Belk contemplates
17 that its area of interest may, in one embodiment,
18 comprise at least an entire muscle of the carcass.

19 Are you suggesting that the muscle of
20 interest described in Belk is an area of interest,
21 as that phrase it used in Belk?

22 MR. SHEELER: Objection. Form.

23 A. It could be. Yeah, it's consistent.

24 BY MR. HART:

25 Q. Can I have you scroll up to Column 8 in

1 Belk, starting at Line 25?

2 A. I see that.

3 Q. Okay. This paragraph is discussing a --
4 Assessing image data based on a specific color
5 standard using three parameters; L-prime, A-prime,
6 and B-prime.

7 Do you see that?

8 A. Yeah, I think they're L-prime -- L-star,
9 not prime, but ...

10 Q. Is -- but -- okay. We can refer to them
11 as L-star, A-star, and B-star.

12 Is that consistent with your
13 interpretation?

14 A. Yep.

15 Q. Scrolling down to Line 59 in that same
16 column, Column 8 of Belk, Belk states, In the
17 preferred embodiment, after determination of L-star,
18 A-star, and B-star for each area of interest, a
19 program, then, calculates several parameters of the
20 image for each frame. First, the program outlines
21 the muscle of interest by choosing areas that have
22 tolerances of B-star compatible with muscle.

23 Do you see that?

24 A. I do.

25 Q. So am I right that the first step in

1 outlining the muscle of interest is to sort multiple
2 different areas of interest by color
3 characteristics?

4 A. Well, I think your question's a bit
5 misleading, in that there can be -- there isn't a
6 single ar- -- muscle or area of interest, that --
7 there can be a large area of interest, and then I
8 can look for a small -- an area within that that I'm
9 interested in or a different one. So the area of
10 interest is a very broad -- a broad term that
11 relates to, specifically, what am I interested in,
12 at that point in time.

13 Q. But in order to arrive at an outline of a
14 muscle of interest, I am analyzing individual
15 segments of the meat product within that ultimate
16 outline; is that right?

17 A. No, that's not correct.

18 Q. Okay. How do I define the perimeter of a
19 muscle of interest pursuant to this embodiment of
20 Belk?

21 A. As I said, it's what am I interested in?
22 So if I'm interested in characterizing the entire
23 piece of meat, that is my area of interest. If I
24 want to find out where is the leanest portion of
25 this meat, I will scan the entire area, do my

1 **analysis, and say: All right, here is the leanest**
2 **portion of this meat. And now, I want to focus on**
3 **that. That will now be my limited area of interest.**

4 Q. At least in this paragraph, Belk is
5 describing Analyzing images that are subsets of the
6 ultimate muscle of interest; correct?

7 A. But as an example, sure. It can -- it can
8 look at the big picture, collect the data, and
9 decide to collect the -- more data in certain areas.

10 Q. Starting at Line 66 in that same
11 paragraph, Column 8 of Belk, Belk continues, Areas
12 with values of B-star compatible with the muscle of
13 interest are, then, examined for their L-star and
14 A-star scores for verification and rejection of
15 surrounding tissues invading the outline of the
16 muscle of interest. Further, examination need not
17 be performed on areas with L-star, A-star, and
18 B-star scores suggestive of bone connective tissue
19 and fat. The surface area of the cross-section of
20 the muscle of interest is determined.

21 Do you see that?

22 A. I do see that.

23 Q. Would you agree that Belk is teaching, in
24 this example, that tissues, such as fat surrounding
25 a muscle of interest, is rejected and need not be

1 examined?

2 MR. SHEELER: Objection. Form.

3 A. No.

4 BY MR. HART:

5 Q. What did I get wrong?

6 A. So what this is doing is looking at
7 specific pieces of areas of interest, and it talks
8 about if it doesn't meet the criteria for what meets
9 my area of interest, I don't have to worry about it.

10 Q. Okay.

11 A. So it's not ruling out that it can't do
12 fat or anything else, because if I wanted to
13 characterize the -- the conditions that were, you
14 know, purely fat, I could do that -- this teaches, I
15 could do that as well. So, again, it's a -- it's a
16 image -- in this case, image the entire device, and
17 then set up a -- a set of parameters to say: I want
18 to look for areas of this meat product that meet
19 these parameters, and that becomes my area of
20 interest. Again, I can, then, look at a subset of
21 that, as I want, as another area of interest.

22 Q. In the next paragraph, which you cited in
23 your declaration, Column 9, starting at Line 7, Belk
24 is describing Distinguishing lean tissue and fat
25 tissue within the muscle of interest; correct?

1 A. Yeah, I believe there, they're talking
2 about the fat within the -- within the muscle.

3 Q. Is "marbling" a term used to describe the
4 amount of lean versus fat within a piece of meat or
5 a muscle?

6 A. Yeah, I believe marbling generally refers
7 to the surface area -- the way it looks at a surface
8 area, but it results from having small pieces of fat
9 with- -- within the meat. That's my understanding
10 of where the word "marbling" came from.

11 Q. And so in this step of being described in
12 Belk where you are assessing lean tissue and fat
13 tissue within a muscle of interest, that is -- can
14 give you a visual sense of the marbling of that
15 particular piece of meat; is that right?

16 A. Well, in this case, it gives you detailed
17 three-dimensional information so you know the size
18 and distribution of the fat tissue -- where -- the
19 fat within -- within the -- within the tissue, and,
20 obviously, how -- you know, how they're spread. So
21 you've got that three-dimensional image, and then
22 you can use that to calculate, effectively, what the
23 marbling would be at any surface. So "marbling" --
24 my understanding, "marbling" generally refers to the
25 view at a -- at a cross-section. So it's a surface

1 **view, but that surface view is generated by, you**
2 **know, the three-dimensional structure of the meat.**

3 Q. And I was asking, specifically, about this
4 muscle of interest description that you've cited to
5 here in Column 9.

6 Was your last answer referring to the
7 overall output of Belk's system or, specifically, to
8 the muscle of interest analysis that you cited in
9 Column 9?

10 **A. I thought I was just referring to the**
11 **Column-9 discussion.**

12 Q. So this paragraph, starting at Line 7 and
13 Column 9 onto the subsequent paragraph that ends at
14 Line 25, when it's describing Distinguishing between
15 lean and fat, that's within a muscle, rather than a
16 macro assessment of a fat cover on top of a muscle;
17 correct?

18 MR. SHEELER: Objection. Cumulative.

19 **A. Yeah, there could -- they could be found**
20 **on -- in the area, there could be fat on the outside**
21 **of the -- of the piece of meat.**

22 BY MR. HART:

23 Q. Doesn't Belk tell us that that fat outside
24 the boundary of the muscle of interest can be
25 ignored, and need not be examined?

1 MR. SHEELER: Objection. Cumulative.

2 A. And, again, what Belk is teaching is, you
3 can see that that is fat, and if you don't care
4 about the characteristics of that fat, if you only
5 care about the characteristic of the piece of meat
6 that you're going to sell, you don't have to do the
7 analysis on the piece of fat, but you could.

8 Q. Does Belk ever expressly describe
9 analyzing the characteristics of the fat surrounding
10 a piece of meat or a muscle of interest?

11 A. Certainly.

12 It talks about calculating yield, and
13 that's a -- you need to -- the -- the fat layer to
14 calculate the yield of a piece of meat.

15 BY MR. HART:

16 Q. Anything beyond a general description of
17 determining yield?

18 A. Well, it's more than a general
19 description. They spent a lot of time on it. I'd
20 have to go back.

21 I mean, clearly, you know, it's talking
22 about being able to do -- basically, create
23 three-dimensional images of -- of a meat product.
24 Inherently, now, that's going to allow you to
25 determine what's fat, what's meat, and what's bone,

1 et cetera. And all that information is available
2 for analysis.

3 MR. HART: Why don't we take a quick
4 break. I'm nearing the end. I just want to go back
5 through my notes and make sure I've covered
6 everything I need to.

7 How about another five minutes? Does that
8 work for you guys?

9 MR. SHEELER: Yeah. Five minutes works
10 for us.

11 MR. HART: Very good. Thank you.

12 (A recess was taken from 10:26 a.m. to
13 10:32 a.m.)

14 MR. HART: Dr. Collins, thank you for your
15 time today. I have no further questions for you.

16 **THE WITNESS: Thank you.**

17 MR. SHEELER: Apologies to immediately
18 break after, but I think give me five minutes just
19 to confirm if we want to do a redirect.

20 MR. HART: Sounds good, Keeton.

21 (A recess was taken from 10:33 a.m. to
22 10:36 a.m.)

23 MR. SHEELER: Nothing further from
24 petitioner either.

25 MR. HART: Kara, do you want to just email

1 me after we're done?

2 **THE WITNESS: We're done?**

3 THE COURT REPORTER: One moment. Are we
4 going to read and sign today?

5 MR. HART: Keeton, I think that's a
6 question for you.

7 MR. SHEELER: First, I think we're fine
8 with getting expedited.

9 **THE WITNESS: Well, I can leave? Sorry.**

10 THE COURT REPORTER: Mr. Collins, would
11 you like to read and sign the transcript today?

12 **THE WITNESS: No.**

13 THE COURT REPORTER: Excellent. That's
14 all I needed.

15 And, then, Mr. Hart, what format would you
16 like your transcript in? Unless you have a standing
17 order, then you can just let me know that.

18 MR. HART: We do have a standing order.

19 THE COURT REPORTER: And, then,
20 Mr. Sheeler, what format would you like your
21 transcript?

22 MR. SHEELER: I believe we have a standing
23 order as well.

24 (The deposition concluded at 10:37 a.m.)

25

CERTIFICATE OF REPORTER

I, Kara D. Ince, a Certified Court Reporter for the State of Missouri, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; 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.



Kara D. Ince
Missouri Supreme Court
Certified Court Reporter

Exhibits			
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