



Deposition of:
Dr. Reynaud Serrette

December 22, 2020

In the Matter of:
**Simpson Strong-Tie Company Inc v.
Columbia Insurance Company**

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

SIMPSON STRONG-TIE COMPANY
INC.,

Petitioner,

vs.

No. PGR2019-00063

COLUMBIA INSURANCE COMPANY,

Patent Owner.

_____/

DEPOSITION OF DR. REYNAUD SERRETTE
Remote Zoom Proceeding
San Jose, California
Tuesday, December 22, 2020

REPORTED BY:

LESLIE ROCKWOOD ROSAS, RPR, CSR 3462

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Job No. 4383172

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Deposition of DR. REYNAUD SERRETTE, Remote Zoom
Proceeding, taken on behalf of the Petitioner, from
San Jose, California, beginning at 9:17 a.m. PST and
ending at 1:03 p.m., on Tuesday, December 22, 2020,
before Leslie Rockwood Rosas, RPR, Certified Shorthand
Reporter No. 3462.

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I N D E X

TUESDAY, DECEMBER 22, 2020

WITNESS

EXAMINATION

DR. REYNAUD SERRETTE

BY MS. HOLOUBEK

10

QUESTIONS WITNESS INSTRUCTED NOT TO ANSWER:

(NONE)

DEPOSITION EXHIBITS

DR. REYNAUD SERRETTE

NUMBER	DESCRIPTION	IDENTIFIED
Exhibit 1001	U.S. Patent Number 10,316,510 B2, 06/11/19	8
Exhibit 1009	Letter To Whom It May Concern from Junichi Ishizuka, 09/03/19	8
Exhibit 1010	U.S. Patent Number 4,261,155, 04/14/81	8
Exhibit 1041	U.S. Patent Number 5,004,369, 04/02/91	8
Exhibit 2001	Declaration of Dr. Reynaud Serrette, 12/13/19	8
Exhibit 2034	Supplemental Declaration of Dr. Reynaud Serrette, 02/19/20	8
Exhibit 2042	Supplemental Declaration of Dr. Reynaud Serrette, 02/26/20	8
Exhibit 2044	Third Supplemental Declaration of Dr. Reynaud Serrette, 06/04/20	8

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3		Revised Contingent Motion to	
4		Amend, 10/07/20	
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8		Serrette In Support of the	
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1 San Jose, California; Tuesday, December 22, 2020

2 9:17 a.m.

3 --000--

4 PROCEEDINGS

5
6 (Exhibit 1001, U.S. Patent Number 10,316,510 B2,
7 06/11/19, marked for identification.)

8 (Exhibit 1009, Letter To Whom It May Concern
9 from Junichi Ishizuka, 09/03/19, marked for
10 identification.)

11 (Exhibit 1010, U.S. Patent Number 4,261,155,
12 04/14/81, marked for identification.)

13 (Exhibit 1041, U.S. Patent Number 5,004,369,
14 04/02/91, marked for identification.)

15 (Exhibit 2001, Declaration of Dr. Reynaud
16 Serrette, 12/13/19, marked for identification.)

17 (Exhibit 2034, Supplemental Declaration of Dr.
18 Reynaud Serrette, 02/19/20, marked for
19 identification.)

20 (Exhibit 2042, Supplemental Declaration of Dr.
21 Reynaud Serrette, 02/26/20, marked for
22 identification.)

23 (Exhibit 2044, Third Supplemental Declaration of
24 Dr. Reynaud Serrette, 06/04/20, marked for
25 identification.)

1 (Exhibit 2055, Declaration of Dr. Reynaud
2 Serrette in Support of the Revised Contingent
3 Motion to Amend, 10/07/20, marked for
4 identification.)

5 (Exhibit 2056, Specification For Structural
6 Steel Buildings, 06/22/10, marked for
7 identification.)

8 (Exhibit 2057, Declaration of Dr. Reynaud
9 Serrette In Support of the Reply to the
10 Opposition of the Revised Contingent Motion to
11 Amend, 12/10/20, marked for identification.)

12 (Paper 37, Patent Owner's Revised Contingent
13 Motion to Amend, marked for identification.)

14 (Paper 40, Petitioner Simpson Strong-Tie Company
15 Inc.'s Opposition to Patent Owner's Revised
16 Contingent Motion to Amend, marked for
17 identification.)

18 (Paper 43, Patent Owner's Reply in Support of
19 Its Revised Motion to Amend, marked for
20 identification.)

21 THE REPORTER: Would you like to introduce
22 yourself, Michelle?

23 MS. HOLOUBEK: So this is Michelle Holoubek,
24 counsel for Petitioner Simpson Strong-Tie, and I'll be
25 taking the deposition today. My last name is spelled

1 H-O-L-O-U-B-E-K.

2 MR. EIDSON: I'm Scott Eidson. I will be
3 defending the deposition today on behalf of Columbia
4 Insurance Company and the witness and Patent Owner.

5 MR. MAUCH: I'm Joseph Mauch of Shartsis &
6 Friese, counsel for Petitioner Simpson Strong-Tie
7 Company.

8 MR. ALLAWI: Ali Allawi, counsel for Petitioner
9 Simpson Strong-Tie.

10

11 DR. REYNAUD SERRETTE,
12 having been first duly sworn, was examined
13 and testified as follows:

14

15 THE WITNESS: I do.

16 THE REPORTER: Thank you, sir.

17 You may proceed, Counsel.

18

19 EXAMINATION

20 BY MS. HOLOUBEK:

21 Q. Good morning, Dr. Serrette.

22 A. Good morning.

23 Q. So you understand you're here today to have your
24 deposition taken in conjunction with the testimony you've
25 provided in a post-grant review proceeding challenging US

1 Patent 10,316,510; is that correct?

2 A. That is correct.

3 Q. Okay. So a couple of formalities before we jump
4 into the substance.

5 As I think we mentioned before the depo
6 officially started, should you need to take a break, just
7 let us know. The only thing we ask is that you not
8 request a break while a question is pending. You have to
9 have an answer before the break is taken.

10 Is that understood?

11 A. Yes.

12 Q. Okay. And are you under the influence of
13 anything such as medications that might make it difficult
14 for you to understand and answer my questions today?

15 A. No.

16 Q. Okay. Is there any other reason you can't give
17 your complete and accurate testimony today?

18 A. No.

19 Q. Great. So just to confirm for the record, we
20 are conducting this deposition remotely today; is that
21 correct?

22 A. Yes.

23 Q. And where are you physically located today?

24 A. I am at my home address. Would you like to know
25 the actual address?

1 Q. Sure. Thanks.

2 A. 1122 El Prado Court, San Jose, California 95120.

3 Q. Thank you.

4 Do you have anyone in the room with you today?

5 A. No.

6 Q. Did you bring any written materials with you to
7 the deposition today?

8 A. No.

9 Q. Okay. And you can access the exhibits on the
10 Exhibit Share; is that correct?

11 A. Yes.

12 Q. Okay. What did you do to prepare for today's
13 deposition?

14 A. I had a meeting with counsel yesterday and, of
15 course, reread my deposition.

16 Q. Okay. And did you speak with anyone other than
17 counsel to prepare for today's deposition?

18 A. No.

19 Q. Okay. So please go ahead and open Exhibit 2057.

20 A. Okay.

21 Q. Do you recognize this document?

22 A. I do.

23 Q. And what is Exhibit 2057?

24 A. This is a Declaration of Dr. Reynaud Serrette In
25 Support of the Reply to the Opposition to the Revised

1 Contingent Motion To Amend.

2 Q. Thank you.

3 Sorry, were you going to say something?

4 A. Dated December the 10th, 2020.

5 Q. Great. Thank you.

6 And can you also please open Exhibit 2055,
7 2-0-5-5.

8 A. Simultaneously have them both open or --

9 Q. You can put one on top of the other. I'll let
10 you know if we go -- you know, when we go back.

11 A. Okay. Just looking at how to do that here,
12 since this one is online.

13 Q. If there's also an option, if you want to
14 download it, and then you'll be able to open it, I think,
15 in a PDF.

16 A. I've downloaded that one. Which is the other
17 one you would like me to open?

18 Q. 2055.

19 A. Okay.

20 Q. And what is Exhibit 2055?

21 A. Let me make sure I have -- Exhibit 2055.

22 Declaration of Dr. Reynaud Serrette In Support of Revised
23 Contingent Motion to Amend, dated October 7, 2020.

24 Q. Great. And then just one more of your
25 declarations. Can you please open Exhibit 2044.

1 A. Open.

2 Q. Okay. And what is Exhibit 2044?

3 A. Third Supplemental Declaration of Dr. Reynaud
4 Serrette, dated June 4, 2020.

5 Q. Okay. Thank you.

6 Let's look back at Exhibit 2057 again, page 2.

7 A. I'm there.

8 Q. Okay. And in paragraph 1, you refer to your
9 First Supplemental Declaration as Exhibit 2043. Is it
10 possible that you meant to say Exhibit 2044 there instead
11 of Exhibit 2043?

12 A. The Third Supplemental Declaration is -- you
13 have it as Exhibit 2044, correct. So if it's referring
14 to the third, it would be Exhibit 2044.

15 Q. Okay. I just wanted to make sure we were
16 talking about the same exhibit.

17 So in the -- in your most recent dec of
18 December 10th, Exhibit 2057, that notation there should
19 be Exhibit 2044; is that correct?

20 A. So it's the same question again on Third
21 Supplemental Declaration --

22 Q. I'm just clarifying that the -- I apologize. I
23 didn't mean to speak over you.

24 I'm just clarifying that in Exhibit 1, when you
25 refer to your Third Supplemental Declaration as

1 Exhibit 2043, that should be corrected to Exhibit 2044;
2 is that correct?

3 A. Exhibit 2043. Which page are you referring to?
4 Are we still on the same page 2 or --

5 Q. Yes. It's in the middle of paragraph 1.

6 So do you see where it refers to your Third
7 Supplemental Declaration as Exhibit 2043?

8 A. Correct. It should be 2044, if 2044 on -- in
9 the documents I have is the Third Supplemental
10 Declaration.

11 Q. Okay. I just wanted to confirm for the record.

12 And other typographical errors aside, do you
13 still stand by the positions you set forth in this
14 December 10th declaration?

15 A. Yes, I do.

16 Q. Okay. And do you still stand by the positions
17 you set forth in the other declarations, October 7th and
18 June 4th, as well?

19 A. That is correct.

20 Q. Okay. Turning to paragraph 3 of your
21 Exhibit 2057, you indicate that you reviewed Mr.
22 Fennell's declarations; is that correct?

23 A. That is correct.

24 Q. Okay. In that same paragraph, you list a number
25 of substantive briefs by both the Petitioner and Patent

1 Owner; is that correct?

2 A. Correct.

3 Q. And then that's followed with an exhibit list
4 that lists Patent Owner's exhibits that you reviewed; is
5 that correct?

6 A. That is correct. This is beginning on page 3.

7 Q. Yes.

8 Did you not review any Petitioner Exhibits other
9 than the Fennell declaration in preparation of this
10 opinion? Or sorry, this declaration.

11 A. That's what I was asked to review, yes.

12 Q. Okay. So to confirm, you did not review any
13 Petitioner Exhibits, other than the Fennell declarations,
14 to prepare this declaration; is that correct?

15 MR. EIDSON: Object to the form.

16 MS. HOLOUBEK: I'll rephrase.

17 Q. So to confirm, is it correct that you did not
18 review any Petitioner Exhibits other than the Fennell
19 declaration?

20 MR. EIDSON: Same objection.

21 Q. BY MS. HOLOUBEK: You can proceed to answer.

22 A. Okay. So I reviewed the Fennell declaration,
23 and I don't remember the exact name, but I think it was
24 the Petitioner's -- I believe it was the Simpson's
25 Opposition to the Petitioner's Revised Motion to Amend.

1 So what was, I guess, the document, I believe, that was
2 written based on the Fennell declaration.

3 Q. And you did not review any other Petitioner
4 Exhibits; is that correct?

5 A. I do not believe so.

6 Q. Okay.

7 A. Those were the two documents that I looked at,
8 and my focus was on the Fennell declaration.

9 Q. Okay. Can you please open Exhibit 1001. It's
10 the '510 patent.

11 A. Okay. It's open.

12 Q. Okay. And Exhibit 10,001 or 100 -- sorry --
13 1001 is a copy of the '510 patent; is that correct?

14 A. That is what is indicated in the first page.

15 Q. Okay. Have you discussed your opinions
16 regarding this '510 patent with anyone other than the
17 attorneys at Simpson?

18 A. No, I have not.

19 Q. Okay. And then let's please open the document
20 labeled Paper 37, "Patent Owner's Revised Contingent
21 Motion to Amend."

22 A. Did you ask me to open that or someone else?

23 Q. Yes, please.

24 MR. EIDSON: Counsel, what exhibit number again?
25 I'm sorry.

1 MS. HOLOUBEK: Well, this is Paper 37. It's
2 "Patent Owner's Revised Contingent Motion to Amend."

3 MR. EIDSON: Thank you.

4 THE WITNESS: It's downloading.

5 Q. BY MS. HOLOUBEK: Okay.

6 A. It's opened.

7 Q. Okay. Have you seen this document before?

8 A. I have seen this document, but only a couple of
9 pages in the document. I did not have the document, no.

10 Q. Okay. Which were the pages that you've seen in
11 this document?

12 A. I don't remember the pages I've seen. I was not
13 looking at page numbers. But I'm going to say I think I
14 looked at a table or I was shown a table.

15 Q. Okay. If you go to page -- it's 35 of the PDF,
16 there's an Appendix A listing the proposed substitute
17 claims. It follows page 26 of this Revised Motion to
18 Amend.

19 A. Okay. That's the page that begins:
20 "Certificate of Compliance With Type-Volume Requirements
21 Under" --

22 Q. Yeah, the next page after that. So it's
23 following page 26.

24 A. Yes.

25 Q. It starts at page 1. Do you see the Appendix A,

1 "Patent Owner's Contingent Motion to Amend"?

2 A. Yes.

3 Q. And this appendix lists the proposed substitute
4 claims; is that correct?

5 A. I did not see this document.

6 Q. Okay. Are you familiar with the listing of
7 claims that appears, say starting on page 3 of that
8 appendix?

9 MR. EIDSON: Objection. Foundation.

10 THE WITNESS: I am familiar with the patent,
11 which is exhibit -- I think it's 1001.

12 Q. BY MS. HOLOUBEK: Okay. Did you review any
13 proposed claim amendments from Patent Owner to prepare
14 your declarations?

15 A. I reviewed the Fennell declaration and the -- I
16 would have to -- what I mentioned before, the two
17 documents I mentioned.

18 Q. But from Patent Owner, Columbia Insurance, did
19 you review any proposed amendments to the claims before?

20 A. No. The only two documents I reviewed were the
21 two that I indicated previously.

22 Q. Okay. So let's take a look at page 4. Well, so
23 3 and 4 of that appendix. It's pages 37 and 38 of the
24 PDF for this paper.

25 A. Page 3 begins: "Claims listing of proposed

1 substitute claims"?

2 Q. Yes, that's right.

3 And do you see where it says claim 21 replaces
4 claim 1?

5 A. I do see that.

6 Q. Okay. And then if you go to the next page,
7 there's some underlined text there?

8 A. Yes.

9 Q. Have you seen this text before?

10 A. I have not seen this document before.

11 Q. Okay. So I'd like to go back to your
12 declaration, Exhibit 2057.

13 A. Yes.

14 Q. And on page 6, I guess around at paragraph 5, if
15 you could go ahead and turn to that section.

16 A. Yes.

17 Q. So this section of your declaration discusses
18 the term "rigidly fixed." What is the difference between
19 the term "fixed" and the term "rigidly fixed"?

20 A. Those two terms have to be taken in context
21 together. And so what "rigidly fixed" means is that in a
22 prearranged configuration, orientation, elements with a
23 prearranged configuration or an orientation with respect
24 to each other.

25 Q. And so how is that different from the term

1 "fixed"?

2 A. "Rigidly" is intended to mean the elements are
3 configured such that their orientation is not intended to
4 be changed.

5 Q. And for the term -- so that's the term "rigid."
6 What does the term "fixed" mean?

7 A. No. Rigid -- are you asking me what the term
8 "rigid" means?

9 Q. No, I'm asking what the term "fixed" means.

10 A. My previous definition was not a definition of
11 "rigid." It was a definition of the term "rigidly
12 fixed."

13 Q. Okay. I believe you said "rigid" is intended to
14 mean that the elements are configured. Is that --

15 A. No, I think I -- if I said that, I misspoke.
16 You asked me, I believe, about fixed. I told you that
17 "rigidly" and "fixed" have to be taken together. And
18 taken together, for someone who is trained in structural
19 engineering or anyone with an understanding of structural
20 engineering, means that you have elements, if it's a
21 cross-section, elements if it's a framed structure that
22 have a predefined orientation with respect to each other,
23 that cannot freely move.

24 Q. Okay. So if that's the definition of "rigidly
25 fixed," is there a definition for just the word "fixed"?

1 A. "Fixed" just means it's in a position. And it's
2 placed in a particular position.

3 Q. So if something is fixed, can it still move?

4 A. What do you define as move?

5 Q. Well, you used the word "move" just in -- as
6 we're talking. Well, you said placed in a particular
7 position. I think of the definition of "rigidly fixed,"
8 you compared it to a predefined orientation that can
9 freely move.

10 So what do you mean by "move"?

11 A. No, I did not say --

12 MR. EIDSON: Object to the form of the question.

13 Sorry, Dr. Serrette. Go ahead.

14 Q. BY MS. HOLOUBEK: Understood.

15 Dr. Serrette, when you use the word "move," what
16 do you mean by "move"?

17 A. Deformable.

18 Q. Deformable; is that what you said?

19 A. Yes, deformable.

20 Q. So is something that is fixed also deformable?

21 A. Every material that we know of on the planet is
22 deformable.

23 Q. Is a material that is rigidly fixed deformable?

24 A. Rigidly fixed, in the context of structural
25 engineering is meant two elements -- at least the minimum

1 of two elements that frame into each other, that are not
2 intended -- they're pre-configured to stay in that
3 configuration.

4 Q. What do you mean by "pre-configured"?

5 A. It means they're oriented with respect to each
6 other. Whether that orientation is defined as an angle,
7 two planes intersecting. But the way, it is configured,
8 which means it is arranged, the parts are arranged, that
9 then they do not move freely with respect to one another.

10 Q. Okay. So if something does not swing freely,
11 two components do not swing freely with respect to each
12 other, is that considered rigidly fixed, in your opinion?

13 A. What do you mean by "do not swing freely"?

14 Q. I believe this is the language that you used in
15 your declaration. So if we look at, I think,
16 paragraph -- let's see -- 51 of your 2057 declaration.

17 A. Let me get there. 51, you said?

18 Q. Yes.

19 A. So you're looking at the one, two -- the
20 third -- fourth line?

21 Q. Yes.

22 So you referred to "swing freely" in this
23 paragraph.

24 A. Okay. And so --

25 Q. What is your understanding --

1 A. Sorry.

2 MR. EIDSON: Sorry. Was the question out? I'm
3 sorry. I didn't mean to interrupt. I have an objection,
4 but I don't know if you rephrased the question or not.
5 I'm sorry.

6 Q. BY MS. HOLOUBEK: What is your understanding of
7 that term "swing freely"?

8 A. Okay. I think previously you said I used that
9 term, but that sentence begins: "As stated by
10 Mr. Fennell, the components of the hanger described in
11 the '517 application cannot swing freely."

12 So in the context that you're asking me to refer
13 to, this is not language that I used.

14 Q. Okay.

15 A. So are you asking me to interpret what
16 Mr. Fennell was trying to say?

17 Q. No. Maybe we can move, actually, to paragraph
18 55, which will be in your language.

19 In paragraph 55, I believe the phrase you use is
20 it cannot move freely relative to one another; is that
21 correct?

22 A. In the third line? Yes.

23 Q. Yes. Okay.

24 A. They cannot move freely with each other. Yes.

25 Q. Can you describe what you mean by saying that

1 two elements cannot move freely with respect to one
2 another or relative to one another?

3 A. Absolutely. Anything that is configured in a
4 predefined arrangement or orientation of elements to each
5 other and are rigidly fixed cannot move freely, which
6 means you don't take -- and this is an example -- you
7 cannot simply slide one part, change the orientation of
8 one with respect to the other easily.

9 In other words, it was not configured to simply
10 take one element or member and just maybe with a pinch of
11 a finger, move it.

12 Now let me try to expand upon this. This is
13 engineering, and in engineering we use terms that any
14 other engineer will understand. And so when I say that
15 something cannot move freely, it means it was not
16 configured to easily move or be moved.

17 Q. Who determines whether it's configured to be
18 easily moved?

19 A. I would have to say whoever is manufacturing the
20 part or whoever is constructing or the engineer, if it's
21 an engineering design.

22 Q. So if you have a hanger that is pre-configured
23 such that it's -- it is not movable, if someone applies a
24 force to it and moves it, would you still consider that
25 rigidly fixed?

1 A. Yes. Because as I mentioned at the beginning,
2 every material on the plant is deformable. You simply
3 have to apply enough force.

4 Now I will give you a simple example. If a
5 specification calls for me to tighten something and the
6 specification says -- so this is how -- how language is
7 written for engineers, because we have to look at the --
8 what the specification is trying to ask us to do, and it
9 says to tighten to the full strength of an ironworker, I
10 would be completely different as an ironworker to Arnold
11 Schwarzenegger or a weightlifter. We will apply
12 different levels of force.

13 So to ask the question that you're asking, I
14 will go back to the -- what I've said before. And if
15 it's rigidly fixed, it means that it is intended to be
16 used in the configuration that you see.

17 Can someone modify it with enough force? Yes.
18 Why? Everything is deformable. Every material on the
19 planet that we know of is deformable with sufficient
20 force.

21 Q. Okay. Going back to the language saying that
22 components do not move freely with respect to one
23 another, is that the same understanding for the term
24 "fixed"?

25 A. Rigidly fixed is used together, and used

1 together to indicate that something is configured in a
2 certain way to be used or it is -- it is configured such
3 that when it is specified, that is the orientation that
4 it's going to be used in. That is the configuration that
5 it will be used in.

6 It cannot -- it is not intended to be used, it
7 is not configured to be used in a different orientation.

8 Q. Can you have elements that are fixed but which
9 aren't rigidly fixed?

10 A. Absolutely. So let me give you a very simple
11 example.

12 We've all seen steel structures go up. You can
13 attach a beam to a column, and you can connect that beam
14 that is attached to the column such that you will
15 allow -- it is intended to permit rotation.

16 So when you put them together, one may be
17 perpendicular to the next, but your intention is when it
18 is used, it will deform. And so it is designed by the
19 engineer as a connection that will deform. It is
20 intended to perform that way.

21 So that's as simple as an example that I can
22 give that I think anyone -- most people would know of,
23 and certainly anyone doing any kind of structural
24 mechanics on anything that is structures related.

25 Q. Okay. Do you recall the hanger of Gilb '155?

1 It's in Exhibit 1010, I believe.

2 A. I believe I do, but it may be best for me just
3 to pull it up. One -- which one? It's not in the list
4 of exhibits.

5 Q. In the Exhibit Share. It's not --

6 A. Oh, there it is. It's the 1010. Sorry.

7 Q. Yeah.

8 A. Okay. Just let me download it in case we have
9 to go back.

10 Yes, I'm looking at it right now.

11 Q. Okay. Would you say that Gilb '155 is an
12 example of elements that are fixed, but not rigidly
13 fixed?

14 A. I would say --

15 MR. EIDSON: Object to the form of the question.

16 Q. BY MS. HOLOUBEK: Okay. Is it your opinion that
17 Gilb '155 is an example of elements that are fixed but
18 not rigidly fixed?

19 MR. EIDSON: Same objection.

20 Q. BY MS. HOLOUBEK: You can go ahead and answer.

21 A. Gilb '155 has three parts that are put together,
22 and one part, which is, I guess, 54, is connecting those
23 two other points, which is 16 and, I believe, 52 or 4.
24 So these parts are not rigidly fixed with respect to each
25 other.

1 Q. Would you agree that they are fixed with respect
2 to each other?

3 A. No. I just said they are not rigidly fixed with
4 respect to each other. They are connected. I would say
5 that they are connected to each other.

6 Q. Is "connected to each other" different from
7 "fixed"?

8 A. "Connected to each other" is different from
9 "fixed," yes, in my interpretation.

10 Q. And how is that different from the word "fixed"?

11 A. You can connect two pieces that can -- together
12 where they can change orientation with respect to each
13 other easily. They're intended to allow that change in
14 the orientation of one element or one member with respect
15 to the other.

16 One that is fixed, rigidly fixed, you have one
17 element that was pre-configured in its orientation with
18 respect to the other, and it is not meant to be movable,
19 one with respect to the next.

20 Now let me qualify that in case we have another
21 question that may come up.

22 Every material is deformable. What you're
23 looking at, what I am looking at with Gilb '115, are two
24 parts that are configured to allow, deliberately allow,
25 the change in orientation between the parts.

1 Q. Is there a difference between the term
2 "substantially fixed" and the term "rigidly fixed"?

3 A. When I used the term "substantially fixed," I
4 was trying to get to the point that is also made in the
5 AISC commentary, that "rigidly fixed," if someone were to
6 look at that outside of the context of engineering and
7 think of the word "rigidly fixed," they would think
8 immovable. But this would be someone who has no
9 background whatsoever in structural engineering.

10 "Rigidly fixed" is a word we use -- intend the
11 orientation of elements or members is such that
12 they're -- we're fabricating, constructing them so that
13 there is essentially no movement, relative movement,
14 between them for what we do in design as engineers.

15 Q. So let's go ahead and turn to that exhibit. I
16 believe it's Exhibit 2056.

17 A. I have to download that.

18 Yes, I have it download.

19 Q. Okay.

20 A. Okay. I am there now.

21 Q. Okay. And let's go to page 26 of the PDF.

22 A. Can you give me the actual page number in the
23 commentary, please? It's at the top left-hand corner.

24 Q. Sure. It's 16.1-510.

25 A. Yes, I'm there now.

1 Q. Okay. And at the bottom of this page 26, or
2 16.1-510, there's a list of assumptions of idealized
3 conditions; is that correct?

4 A. Right.

5 Q. Is this section of Exhibit 2056 the section
6 you're referring to in your declaration?

7 A. Yes.

8 Q. Okay. And this list of idealized conditions,
9 these elements are used to calculate an effective length
10 factor K; is that correct?

11 A. They're used to not calculate an effective
12 length factor. They're used to look at table C-A-7.1 on
13 page 16.1-511 to determine an effective length factor K
14 for design of columns.

15 Q. Okay. So this list of idealized conditions is
16 used to determine an effective length factor K as shown
17 in table C-A-7.1; is that correct?

18 A. It is used to choose an effective length factor
19 if the engineer of record who's designing a column is
20 using this method to calculate the capacity of the
21 column.

22 Q. Okay. And one of the assumptions this document
23 says seldom exists in real structures is that all joints
24 are rigid; is that correct?

25 A. It never exists. Not seldom. It never exists.

1 They may use the word "seldom," but it does not exist.

2 Q. Okay. So if we go back to your declaration,
3 2057.

4 A. Uh-huh.

5 Q. The end of paragraph 11. And I believe this is
6 on page 9 of your declaration.

7 A. Yes, I see that.

8 Q. Okay. Do you see the sentence that says:
9 "Still, the joint is considered 'rigid' to the PHOSITA"?

10 A. That is correct. I see that.

11 Q. Okay. What joint are you referring to in that
12 sentence?

13 A. The joint is the intersection of two framing
14 elements or two framing members in the context of the
15 American Institute of Steel Construction specification
16 for structural steel buildings.

17 Q. Okay. So other than including the rigid joint
18 in the list of assumptions, where does Exhibit 2056 say
19 that a PHOSITA would still call that joint a rigid joint?

20 A. Just let me get to that document. Just a
21 minute. I'm just trying to -- I don't know why that one
22 does not show up on my screen here again.

23 So we're back on the AISC, the American
24 Institute of Steel Construction specification, page
25 16.1-510.

1 Q. Yes.

2 A. And can you repeat the question, if you don't
3 mind.

4 Q. Sure.

5 Other than the list of assumptions that's shown
6 on this page, where does Exhibit 2056 say that a PHOSITA
7 would still refer to this joint as a rigid joint?

8 A. Where other than where we're looking at in 2056,
9 Exhibit 2056?

10 Q. Uh-huh.

11 A. I did not go through all of 2056. I went to a
12 section of 2056 to try to indicate what a PHOSITA would
13 understand as something that is rigid.

14 Q. And where does this document show that a joint
15 used in this type of structure would be called a rigid
16 joint?

17 A. Where in this document?

18 Q. Uh-huh. Yes.

19 A. I think it says it in the section that we're
20 referring to. You can read -- one can read through the
21 document on page 16.1-52. And so you're asking me to go
22 beyond now what I have written --

23 Q. I apologize to interrupt. Did you say 16.1 --

24 A. 512.

25 Q. Oh, 512.

1 A. 512. My mistake.

2 Q. Okay.

3 A. And so we're going further than what I have said
4 in my declaration, but you're asking me a question, and
5 I'm just trying to be helpful in showing you other places
6 where it's indicated.

7 So if you look at the sentence after equation
8 C-A-7-3, where it indicates the subscripts A and B refer
9 to joints at the ends of the columns being considered,
10 the symbol -- summation indicates a summation of all
11 members rigidly connected.

12 So I can take that and I can say I'm looking at
13 a cross-section made out of cold-formed steel, which
14 means I formed the shape, whichever forming method was
15 used, that are rigidly connected. Same idea. They're
16 put into a configuration.

17 And so they're using rigidly even after saying
18 that this is not something that you would actually find.
19 And so there is where "rigidly" is used.

20 Now if you were to go down to figure C-A-7.1 on
21 the same page, alignment chart sidesway inhibited, and
22 you look at the figure on the right-hand side, at the
23 first cross, you would see an A, and if you go down to
24 the second cross, you will see a B. The vertical part of
25 the cross is the column. The horizontal -- and there are

1 two of them -- are the beams.

2 The joint is A and the other joint is B. And
3 they're saying that the summation of all members rigidly
4 connected to that joint, yet they show deformation --
5 they show the joint rotating. But what we assume -- what
6 we assume is that there is no change in the orientation
7 of the members.

8 So if you look at the -- there's on the
9 right-hand side of the upper cross, there is a label B2,
10 and you look again at joint A, and you look at below
11 joint A, there is a label C2. The orientation of B1 to
12 C2 does not change even after that joint rotates.

13 So those members are assumed to be rigidly fixed
14 and connected to one another.

15 Does that answer your question?

16 Q. Yes. Thank you.

17 And just to confirm that when it's talking at
18 the top of that page, 16.1-512, this is part of that
19 determination of effective length factor; is that
20 correct?

21 A. It is determination of effective length factor,
22 but it is different from the table that you have on page
23 16.1-511. The language on page 16.1-510 at the bottom
24 with the assumptions. "Yes"?

25 Q. Uh-huh.

1 A. Are also related to the behaviors we see in the
2 table and the figure that we just looked at with the
3 joint A and joint B.

4 Q. Okay. So let's go back to the '510 patent. And
5 in the '510 patent, isn't it true that different beam
6 materials will provide different loads on the hanger?

7 A. I need some clarification on that question.

8 Q. What part of the question?

9 A. I need clarification with respect to different
10 material, different -- I think you said different beam
11 materials.

12 Q. Sure. So the '510 patent describes a hanger for
13 beams such as joists and rafters and those types of
14 beams; is that correct?

15 A. That is correct.

16 Q. Okay. So in that term or in that configuration,
17 a beam is seated within the hanger; is that correct?

18 A. That is correct.

19 Q. So a beam made of, say, balsawood would put a
20 lighter load on the hanger than a beam made of oak; is
21 that correct?

22 A. That is correct.

23 Q. All right. And a beam made of steel would put a
24 heavier load on a hanger than a beam made of oak; is that
25 correct?

1 A. That is correct.

2 Q. Okay.

3 A. Now, I think just looking at that in isolation
4 is inappropriate, those -- the -- what I answered
5 "correct" to. Because a beam is not placed in a hanger
6 to support the beam. The beam supports a load, which is
7 the floor or a roof. That is the intent of the beam. If
8 a balsa beam will work, that's what you will use. If a
9 wood beam will work, that's what you will use.

10 But the beam -- the hanger is intended to hold
11 the beam, but the beam is supporting something.

12 Q. Okay.

13 A. If you just take it out of context in terms of
14 weights associated with beams alone, that would be
15 incorrect. Because you will not put a beam if you do not
16 have something to support. So you will not need a
17 hanger.

18 Q. But depending on what that structure is that's
19 built, the total load on the hanger will be different for
20 different materials and different constructions; is that
21 correct?

22 A. Not based on the structure that's built. It's
23 based on the use of the structure. Loads come from use,
24 not from the structure itself.

25 Q. But the same hanger could be subject to

1 different loads; is that correct?

2 A. Yes.

3 Q. Okay. Let's turn back to your declaration,
4 Exhibit 2057, and specifically paragraph 45.

5 A. Okay, I'm there.

6 Q. Okay. In paragraph 45, you refer to figures 1,
7 2, 25, and 26 of the '517 application; is that correct?

8 A. That is correct.

9 Q. Okay. And are the figures of the '517
10 application the same as the figures that issued in the
11 '510 patent?

12 A. I would have to look at those two again
13 side-by-side just to make sure, but let me just read the
14 language.

15 So the language in 45 is -- is indicating the --
16 what we've been discussing now for a while, the -- this
17 rigid fixity of elements that frame into one another.
18 And so what you're asking me now is to take a look at two
19 different documents and make an opinion as to -- I think
20 it's if the figures are identical or are they trying
21 to -- are they showing the same intent with respect to
22 predetermined or preset configuration of elements,
23 orientation of elements with respect to each other.

24 So I'm asking, I guess, for clarification on
25 exactly what you're trying to do with the two sets of

1 figures.

2 Q. Well, the main reason I was asking about the
3 '510 patent was so that you could look at that document,
4 since it's labeled pretty well. But since your
5 declaration here refers to the '517 application, I
6 believe that is found in Exhibit 1002, which is the
7 prosecution history.

8 Is that where you saw the copy of the '517
9 application that you're referring to here?

10 MR. EIDSON: Object to the form.

11 Sorry. Dr. Serrette, you can go ahead.

12 THE WITNESS: I was going to say that was
13 something that I did not -- that I looked at, yes,
14 previously.

15 Q. BY MS. HOLOUBEK: Okay. And so if you can open
16 Exhibit 1002.

17 A. This is not included in the documents. This --
18 I don't see it, at least. Maybe you can tell me where it
19 is.

20 MR. EIDSON: Same here. I don't have it in the
21 Exhibit Share.

22 MS. HOLOUBEK: Okay. I apologize. I was
23 planning on referring to the patent.

24 How about this, Dr. Serrette: We've been going
25 about an hour. I'll make sure that gets transferred into

1 the Exhibit Share, and we can come back and walk through
2 the actual application as filed.

3 THE WITNESS: I would certainly appreciate that.

4 MS. HOLOUBEK: Okay. So maybe a quick
5 ten-minute?

6 THE WITNESS: I only need about five.

7 MS. HOLOUBEK: Okay. Five minutes is fine.

8 THE WITNESS: Thank you.

9 MR. EIDSON: Thank you.

10 (Recess.)

11 (Exhibit 1002, '510 Patent File History, marked
12 for identification.)

13 Q. BY MS. HOLOUBEK: Dr. Serrette, did you speak to
14 anyone on the break that we just had?

15 A. No.

16 Q. Okay. And when you access the Exhibit Share,
17 are you able to see Exhibit 1002 now?

18 A. Yes, I am.

19 Q. Okay. Great.

20 And when you look at that exhibit, if you can
21 scroll down to -- sorry, I don't have the page of the PDF
22 here. I guess it's the number at the very bottom is
23 0238.

24 A. 0238.

25 Q. And do you see at the top where it says "Hanger

1 For Fire Separation Wall"?

2 A. Yes.

3 Q. Is this the '517 application that you're
4 referring to in your declaration, paragraph 45?

5 A. That was a while ago so I'm just trying to
6 recollect. Just looking. Just a second.

7 I believe it is.

8 Q. Okay. And if you scroll down to the figures,
9 I'm doing the same so I'll let you know the page as soon
10 as I get there.

11 So it's page 261, 0261.

12 A. Yes, uh-huh.

13 Q. So that's -- the start of the figure is
14 accompanying this '517 application; is that correct?

15 A. Found it. Yes.

16 Q. Okay. So your declaration, Exhibit 2057, refers
17 to figures 1, 2, 25, and 26 of this '517 application; is
18 that correct?

19 A. Yes.

20 Q. Okay. So figure 1 shows the orthogonal version
21 of the hanger; is that correct?

22 A. Correct. And orthogonal meaning perpendicular
23 to. Or normal to the wall.

24 Q. Okay. And what is the hanger loaded with in
25 figure 1?

1 A. The hanger is loaded with the -- what appears to
2 be a truss member.

3 Q. And why do you say it's a truss member?

4 A. Because it appears to have a top cord, a bottom
5 cord, and a diagonal.

6 Q. So it's not a solid beam; is that correct?

7 A. It does not appear to be a solid beam.

8 Q. Figure 1 shows this orthogonal hanger with two
9 sheets of sheathing installed; is that correct?

10 A. That is correct. Item, I guess, 34.

11 Q. Is that sheathing 34 flush against the back of
12 the connection portion of the hanger?

13 A. Can you repeat that again?

14 Q. Sure. And maybe I'll just preface it with
15 another question.

16 Do you see the connection portion of the hanger
17 there with reference number 26?

18 A. Correct. I see it.

19 Q. Okay. Is the sheathing 34 flush against the
20 back of the connection portion of the hanger?

21 A. It will be flush with respect to the tolerance
22 that you must have to install the sheathing.

23 Q. And what is that tolerance?

24 A. Whatever the manufacturer specifies. If you're
25 asking me what section I can find that in, I do not know,

1 and I would have to go read the document.

2 Q. From this particular figure, can you tell what
3 that tolerance would be?

4 A. Simply looking at the figure, you cannot say
5 what that tolerance is, but the manufacturer would
6 specify what that tolerance needs to be.

7 Q. Okay. And why does there need to be a
8 tolerance?

9 A. Because you cannot fit a five-eighths-inch bolt
10 in a five-eighths-inch hole. That's an analogy. So you
11 cannot fit two pieces of material of a certain thickness
12 in a space that has exactly the same width.

13 Q. And why is that?

14 A. Because you cannot put a five-eighths-inch bolt
15 in a five-eighths-inch hole.

16 Q. Can you maybe describe it with regards to the
17 sheathing? Why couldn't you put -- if you have a space
18 that is five-eighths inches, why couldn't you fit a
19 five-eighths-inch thick sheet of sheathing in that space?

20 A. Because there is tolerances with everything that
21 is manufactured.

22 Q. What do you mean by a "tolerance"?

23 A. I'm going to explain that.

24 In engineering, nothing is made perfectly. This
25 is engineering. It's not laser science. And so you

1 must, in everything we do in engineering, have some level
2 of tolerance.

3 So the things that need to fit, one thing that
4 needs to fit into another, whatever is being fitted into
5 has to have some tolerance to allow for whatever
6 manufacturers understand tolerances of the sheathing must
7 be that is going to be placed -- in this case, we're
8 talking sheathing -- that's going to be placed in that
9 space.

10 It's something that anyone who is doing
11 engineering will understand at any point. So let me try
12 to give you an example.

13 If someone specified the thickness of that
14 sheathing to be 5.226685324, you will not provide a space
15 with that exact same dimension. And so in engineering,
16 we do not spec things out the way a physicist would spec
17 it out in terms of the dimensional precision because we
18 know that things will not always fit exactly in design.

19 Q. So in the context of figure 1 here, does that
20 mean that there will be -- or there could be a bit of
21 extra space between the connection portion 26 and the
22 sheathing 34?

23 A. It will be whatever the manufacturer specifies
24 for tolerance.

25 Q. But the tolerance essentially amounts to a bit

1 of extra space; is that correct?

2 A. Tolerance applies to whatever the manufacturer
3 requires to make sure that the hanger will work for its
4 intended purpose.

5 Q. But when you say whatever the manufacturer will
6 require, are you talking about a sizing there?

7 A. If the indication, as is shown here, it's two
8 layers of gypsum board, then the manufacturer will
9 provide a tolerance that will accommodate the thickness
10 of gypsum board for the number of layers that are
11 expected.

12 Q. And when you say "a tolerance," is that defined
13 in terms of distance?

14 A. That will be defined by the manufacturer, my
15 engineering intuition, background, trainings, as it will
16 be in terms of a distance because you're trying to fit a
17 thickness.

18 Q. And so along those lines, that distance is
19 essentially an amount of space that's allowed when you
20 talk about a tolerance; is that correct?

21 A. The distance will be a gap that the manufacturer
22 would specify.

23 Q. Okay. And then in figure 1, are you able to see
24 the back flange of the hanger in figure 1?

25 A. And what is -- how are you defining the back

1 flange?

2 Q. Are you familiar with the '510 patent's
3 description of the back flange?

4 A. I understand what it is. I just want to make
5 sure that I am saying the same thing that you are saying.

6 Q. Okay. Why don't we take a look at figure 2.

7 A. Yeah.

8 Q. And this is figure 2, page 0262 of Exhibit 1002.

9 In figure 2, what element would you identify as
10 the back flange of the hanger?

11 A. The back flange I will identify as 6 -- 66.
12 Element 66. It's in sort of the middle of the figure on
13 the right-hand side.

14 Q. Okay. So with that understanding of the back
15 flange, if you go back to figure 1 --

16 A. Uh-huh.

17 Q. -- are you able to see the back flange of the
18 hanger in figure 1?

19 A. It is obscured by the -- the plane of the back
20 flange, and therefore the back flange is obscured by the
21 two layers of sheathing that are shown in the figure.
22 The second two layers, I should say. The one that is
23 inserted in the hanger.

24 Q. In paragraph 45 of your declaration,
25 Exhibit 2057, you say that the components of the hanger

1 do not freely move with respect to one another; is that
2 correct?

3 A. Just let me get back to...

4 Q. Okay.

5 A. Yes.

6 Q. Okay. Are you referring to movement in the
7 vertical direction, which would be from top to bottom, in
8 this figure?

9 A. The "yes" was I got back to the document.

10 Q. Okay. Can you turn to paragraph 45.

11 A. Okay. Yes.

12 Q. And do you see in paragraph 45, you say the
13 components of the hanger do not freely move with respect
14 to one another?

15 A. Correct. Yes, I see it.

16 Q. Okay. There are you referring to movement in
17 the vertical direction, which would be from top to
18 bottom, in this figure?

19 A. I'm referring to the orientation of the members
20 with respect to each other. The predefined and fixed,
21 rigidly fixed orientation of one element with respect to
22 the next.

23 Q. Okay. And so that would include movement in the
24 vertical direction; is that correct?

25 A. Movement, there are two things that I would like

1 to distinguish, movement versus deformation. Those are
2 two completely different -- I can take the hanger and
3 move it from the table to a chair, and I can change the
4 orientation of the elements with respect to each other.
5 Which one are we referring to when you say "movement"?

6 Q. Deformation. I'll reask the question with the
7 word "deformation." Would that be more clear?

8 A. Yes.

9 Q. Okay. So in this section of paragraph 45, when
10 you say the components of the hanger do not freely move
11 with respect to one another, do you mean deformation in
12 the vertical direction?

13 A. I mean deformation. Deformation results from
14 two types of stresses, a normal stress and a shear
15 stress.

16 Q. Can you describe the differences between a
17 normal stress and a shear stress?

18 A. A normal stress is one where you have a force
19 that is applied perpendicular to the surface or plane of
20 a member, and a sheer stress is when you have a force
21 acting over an area, and that force is parallel to the
22 surface of the member that you are describing.

23 Q. In figure 1, if you can describe it in context
24 of figure 1, what is the direction of the normal stress?

25 A. That would be an inappropriate question. You

1 would have to identify the force that is creating the
2 stress, please. Oh, in other words, it's not an
3 inappropriate question; it's a question I cannot answer
4 because I don't know the direction of the force.

5 Stress is a result of force. So before you can
6 get to stress, you have to know the force that is
7 creating that stress.

8 Q. So in figure 1 you can't tell just by looking at
9 it whether or not there is a force creating a stress; is
10 that correct?

11 A. Figure 1 is just the configuration of members
12 and the hanger. You have to know -- you have to -- the
13 question has to be posed: A force creates a stress, a
14 stress creates deformation due to the constrictive
15 properties of the material.

16 So before I can get to the deformation, I have
17 to back out of the type of materials, then I have to back
18 out to the stress that was created, and then I have to
19 back out all the way to the force.

20 So the question would be ambiguous for me
21 because I would have to know what force we're talking
22 about to say that there's going to be deformation. And
23 as I said before, all materials are deformable.

24 Q. And is it fair to say that figure 1 doesn't
25 illustrate that information that you would need?

1 A. Because figure 1 shows no forces. Figure 1 is
2 an illustration.

3 Q. Okay. So you can't tell from figure 1 whether
4 there are any forces acting on the hanger; is that
5 correct?

6 A. Well, let me go back to a question that you
7 asked earlier, and you said the hanger can be -- is used
8 to support a beam. And I suggested really the beam is
9 supporting something, and the hanger is just supporting
10 the thing that the beam is supporting.

11 And so -- and then we talked about a balsa beam
12 and we talked about a wood beam, a solid wood beam, and
13 we talked about a steel beam. And they impose a force at
14 the base of the hanger.

15 So if that's the force that we're talking about,
16 then I want to tie it back to the conversation we had
17 where you were talking about the different materials,
18 beam materials, imposing a force.

19 So if that's the force, then I can -- I can
20 respond in that context.

21 Q. Well, you mentioned that this figure shows a
22 truss; is that correct?

23 A. Yes. It looks like a truss.

24 Q. Okay. And would the installation of that truss
25 create a force on a hanger?

1 A. Based on the discussions we had before,
2 absolutely.

3 Q. Okay. And so which direction of -- or what is
4 the direction of the force created by the truss as shown
5 in figure 1?

6 A. The direction in the force created by the truss,
7 which means the self weight of the truss will be a force
8 that's in the direction of gravity.

9 Q. And in this figure, what direction is that? Is
10 that from top to bottom, for example, in this figure?

11 A. I am going to assume that that figure is
12 oriented such that gravity is acting down.

13 Q. Okay. So is the force resultant from the truss
14 loading onto the hanger acting in a downward direction?

15 A. Based on the assumption that gravity's acting
16 downward, when we look at that -- when we look at the
17 screen we're looking at, or we're looking at the picture,
18 and the screen is in the vertical orientation, so I want
19 to make sure I get it right, and I'm assuming gravity is
20 acting down, yes.

21 So in the direction of from the top cord of the
22 truss, if we're saying this is a truss, to the bottom
23 cord of the truss, with two lines that are the two points
24 that are directly above and below each other.

25 Q. And you mentioned that a hanger, when installed,

1 would not only have the load from the weight of the truss
2 but from anything else that the truss was supporting; is
3 that correct?

4 A. Which is the primary load. The primary load is
5 the load that the truss or the beam will be supporting,
6 yes.

7 Q. So is the load from the truss minimal compared
8 to the primary load?

9 A. The truss or the beam, in the design of a
10 structure, is there to support the floor. It would not
11 be put in if it's not needed. And so depending on the
12 material that you use, in structural design you begin a
13 design with the loads that you know, which is the loads
14 based on use and the weight of the floor itself.

15 If you can span a long distance, you put in less
16 beams. If you cannot span a long distance, you put in
17 more beams. You can put in multiple beams and make them
18 lighter; you can put in less beams and make them heavier.

19 It is a design situation completely.

20 Q. So the primary load, then, on the hanger would
21 come from the structure that's being supported; is that
22 correct?

23 A. The primary load on the hanger will come from
24 the floor that the hanger supports.

25 Q. Okay. And -- I'm sorry, what was that last

1 part?

2 A. Or the roof. The horizontal structural
3 subsystem.

4 Q. Okay. And then the truss here then is a
5 secondary load; is that correct?

6 A. The truss creates an additional load. Secondary
7 as used in the context of a civil or a structural
8 engineer is -- may be a lot different from how you are
9 using it.

10 Q. How would you refer to it?

11 A. I would refer to it as an additional load.

12 Q. Okay.

13 A. That weight.

14 Q. In terms of figure 1, does figure 1 show that
15 primary structure, such as a floor or roof, that would be
16 supported by the truss?

17 A. Figure 1 shows a member that seems to be
18 configured with the top cord, a bottom cord, and diagonal
19 members. And so an engineer looking at that will say
20 that's a truss, and that is all the figure shows.

21 Q. Okay. And then going back to the question of
22 load and forces, here we have the sheathing behind the
23 connection portion 26 -- sorry, the channel-shaped
24 portion 26; is that correct?

25 A. That is correct, as I am reloading that figure

1 now.

2 Q. Okay.

3 A. I'm not sure why I'm having -- I apologize.

4 Q. That's okay.

5 A. Okay. So I am there now. So I'm going to ask
6 if you can just repeat the question.

7 Q. Sure.

8 And this question is just to provide some
9 context. We've already mentioned that the sheathing 34
10 is disclosed behind the channel-shaped portion 26 of the
11 hanger; is that correct?

12 A. That's correct.

13 Q. So when we think about forces, the sheathing
14 there would help prevent any change to the skew angle; is
15 that correct?

16 A. Anything that has resistance helps. So let me
17 respond in that way. So anything that is against or the
18 anything coming into contact with that has constitutive
19 properties will provide resistance.

20 Resistance results from an attempt to deform a
21 material that does not necessarily want to deform.

22 Q. Okay. And in figure 2 of this '517 application
23 is that same hanger in an uninstalled configuration; is
24 that correct?

25 A. Yes. It looks just like the hanger itself.

1 Standard.

2 Q. Okay. The other two figures that you mentioned
3 in your declaration were 25 and 26. So let's scroll down
4 to figure 25.

5 THE WITNESS: Before you ask the question, I
6 need a short break.

7 MS. HOLOUBEK: Okay.

8 THE WITNESS: Maybe a minute and a half.

9 MS. HOLOUBEK: Okay. That's fine. Thank you.

10 (Recess.)

11 Q. BY MS. HOLOUBEK: Dr. Serrette, did you speak to
12 anyone during the break?

13 A. No, I did not.

14 Q. And did you look at any materials during the
15 break?

16 A. No.

17 Q. Right before the break, we were turning to
18 figure 25 of the '517 patent. That's in Exhibit 1002. I
19 believe it's page 288.

20 A. I am there.

21 Q. Okay. So figure 25 shows the nonorthogonal
22 version of the hanger; is that correct?

23 A. Nonorthogonal in terms of the framing angle that
24 the -- what we're calling the truss makes with the wall
25 that supports the hanger, yes.

1 Q. Okay. And other than that framing angle, the
2 sheathing and truss are the same as in figure 1; is that
3 correct?

4 A. They seem to have the same drawings, yes.

5 Q. Okay. And in figure 25, there's one other part
6 of it, and it appears that there's a cutaway in the
7 drawing for the sheathing; is that correct?

8 A. Yes, on the right-hand side.

9 Q. Okay. In this drawing, are you able to see the
10 entire back flange of the hanger?

11 A. No, I'm not.

12 Q. Okay. And does the sheathing fill the space
13 between the back flange and the back edge of the
14 channel-shaped portion in this figure?

15 A. That -- that will be a -- I think -- I don't
16 know if you can ask it a little differently. Because the
17 channel-shaped portion is at an angle. So one vertical
18 edge of the channel-shaped portion cannot possibly
19 contact the sheathing, but the other end can.

20 So if we look on the left-hand side of the
21 figure, where we see the number 14, it's under the 174.

22 Q. Uh-huh.

23 A. That vertical edge, which I believe is
24 identified, I'm going to say as the part with the holes,
25 which are 156.

1 Q. Uh-huh.

2 A. That edge of the channel section cannot -- is
3 not in very close proximity to the sheathing. But the
4 other edge will be. Does that make sense?

5 Q. It does. Thank you.

6 On this particular hanger, if the shear force
7 were applied, would this hanger move around that skew
8 angle?

9 A. Everything is deformable. So would the hanger
10 deform? Absolutely, because there's going to be load
11 applied to it.

12 If you're asking if the angle will change, the
13 truss -- what we're calling a truss -- is in place, and
14 I'm going to assume it's connected over to something
15 else, and I am going to assume there's a floor or roof
16 sitting over it. So the only deformation you will get
17 will be the deformation that results from the forces
18 interacting.

19 So as an engineer, you would not expect that
20 skew angle to change. You would expect that skew angle
21 to remain as the manufacturer had intended.

22 Q. In this figure, can you tell whether the other
23 end of the truss is connected to anything?

24 A. I cannot.

25 Q. Is it possible that in this figure, this is the

1 first end of the truss that is being connected to a
2 hanger?

3 A. I think that will be an appropriate question
4 maybe for a contractor. You will not install -- try to
5 install a truss or a beam at an angle. You will try to
6 drop it down straight in place, which is the reason the
7 channel section has no top portion, because you want to
8 basically bring your structural element vertically down.

9 So to say that this will be the first
10 installation or the second installation is somewhat not
11 accurate.

12 Q. Earlier when you were answering the question
13 about whether the skew angle would change, you said you
14 were assuming that the truss were already connected at
15 the other end; is that correct?

16 A. Yes.

17 Q. Okay. So and now you're saying that it doesn't
18 matter whether the truss is connected at the other end;
19 is that correct?

20 MR. EIDSON: Object to the form.

21 Q. BY MS. HOLOUBEK: You can answer the question.

22 A. No, I'm not saying that. I think -- not that I
23 think, I know exactly what I'm saying.

24 Would you like -- maybe you can ask the question
25 a different way.

1 Q. Okay. Can we take away the assumption that this
2 truss is connected at the other end because -- well, is
3 it possible -- maybe I'll just rephrase.

4 Is it possible that this truss is not already
5 connected at the other end?

6 A. Let me put it this way: If you were to take a
7 truss, and let's assume that you only have a hanger on
8 one side, and you put this truss down on that hanger, the
9 whole truss will fall.

10 So we have a responsibility as engineers to
11 public welfare and health, and the health and public --
12 and the welfare of emergency responders.

13 So you will never take a truss in this hanger
14 that as I see it here and put it down on one side without
15 having it supported on the other end.

16 It's like taking a knife in your kitchen, or a
17 fork, and putting one end on one finger and letting go of
18 the fork and assuming the fork will stay in place.

19 Q. Let me rephrase my question.

20 Can we -- is it possible that this truss is not
21 already seated in another hanger on the other end of the
22 truss?

23 A. It is impossible for that to happen. It has to
24 be seated on two ends. Because as soon as you let go of
25 the truss, it will fall.

1 Q. So is it your position that in a situation like
2 this, where the angle of the truss to the wall is not an
3 orthogonal, that hangers would be hung on both sides of
4 opposing walls prior to the truss being loaded?

5 A. Sorry. The orthogonality of the hanger has
6 absolutely nothing to do with the comments I have made.
7 If the truss is coming in perpendicular to the wall, at
8 45 degrees to the wall, at 35 degrees to the wall, at
9 90 degrees to the wall, at zero degrees to the wall, it
10 makes no difference.

11 As a structural engineer, when you're modeling
12 that hanger -- I mean that truss, in the configuration
13 that is shown and in the configuration where almost every
14 beam or truss that frames into a hanger is used, the
15 hangers that we're looking at here, and the majority --
16 vast majority, if not all of the hangers that are used in
17 practice, will be modeled as a line with a triangle on
18 one side and a circle on the other side. And the
19 engineer in analyzing the truss or the beam will pay no
20 attention to that skew.

21 Q. Okay.

22 A. So the question is --

23 Q. Let me rephrase my question.

24 Is it your position that if you are installing a
25 truss, that the hangers on opposing sides or opposing

1 walls would already -- both hangers would already be in
2 place when you're installing the truss?

3 MR. EIDSON: Object to the form.

4 Q. BY MS. HOLOUBEK: I'll rephrase.

5 Is it your position that hangers would already
6 be in place for opposing ends of a truss to be inserted
7 at the same time?

8 A. If you're using hangers on the two ends of the
9 truss or the flexural member that you're using to support
10 the floor, it has to be supported on two sides. Unless
11 you're designing a cantilever member. A cantilever
12 member is one that has one end free and the other end
13 attached. The other end that has to be attached, has to
14 transfer both moment and shear.

15 Hangers, as we were discussing before, the
16 intent of them is to transfer a gravity direction load,
17 and we said gravity was from the top cord of what appears
18 to be a truss in figure 25 to the bottom cord of the
19 truss in that figure 25, would be two points, and the top
20 cord and the bottom cord vertically align.

21 So there's no moment --

22 Q. Go ahead.

23 I was just going to, you know, say my question
24 was not whether one end of the truss would be completely
25 unsupported. My question was whether the hangers, so,

1 for example, a complementary hanger that's identical to
2 the hanger shown in figure 25, whether hangers would have
3 to be installed on both opposing walls prior to insertion
4 of the truss.

5 A. And let me see if I can try to answer that. So
6 we're looking at the insertion of the truss. So you're
7 going to insert it into something.

8 Q. Would that something not be the hanger?

9 A. Yes, and so I'm getting there.

10 And if you're inserting it, you have to have
11 hangers on each side of the wall if it's a simply
12 supported member. It is just physically impossible for
13 any engineer or anyone who claims to be an engineer to
14 insert a truss or a beam without using a support on each
15 end, and in the configuration that we're looking at, that
16 support is the hanger if it's a simply supported member.

17 You cannot insert -- insert -- I am assuming --
18 I should make this statement. Insert, I am assuming, you
19 place the truss, and you remove the thing that placed the
20 truss.

21 Is that the correct understanding of the term
22 "insert"?

23 Q. If that's what you mean by it, yes.

24 A. That's what I mean by it.

25 And so in that case, you have to have supports

1 on each end, and in this case that we're talking about,
2 that support is the hanger.

3 Q. So you wouldn't -- in this instance, then,
4 that's shown in figure 25, you couldn't have the other
5 end of the truss, say, being held by a person or other
6 piece of equipment while the end of the truss that's
7 shown in figure 25 is being loaded into the hanger?

8 A. That will be the support at the other end. So
9 that's why I tried to clarify my response that said that
10 there has to be support on each end. I said support
11 first, and then I said those supports can be two
12 trusses -- sorry -- two hangers.

13 Q. Right. And I'm asking a little bit of a
14 different question in the sense that let's take that
15 example where you have the truss being held by a person
16 or another piece of equipment on one end --

17 A. Uh-huh.

18 Q. -- and you're inserting it into this particular
19 hanger. Wouldn't you then at a later point, maybe right
20 after, but still at a later point, then need to insert
21 the opposing end into a hanger?

22 A. You would have to at that point -- and so we're
23 just talking hypothetical, not what is practical in the
24 field. This is a pure hypothetical because no contractor
25 is going to use time holding something up when they could

1 pre-install two supports and drop the member in. That is
2 just not practically...

3 Q. Well, I think that's the question I was trying
4 to get to when asking whether or not the hangers would be
5 pre-installed on opposing walls prior to insertion of the
6 truss in either one; is that accurate?

7 A. That's accurate.

8 MR. EIDSON: Object to the form.

9 THE WITNESS: That may be accurate if you assume
10 that you're using hangers at both ends.

11 Q. BY MS. HOLOUBEK: Okay.

12 A. That has to be the assumption that comes first.

13 Q. What happens if one of those hangers is
14 misaligned such that it's not, say, a perfect alignment
15 with the beam or with the truss?

16 A. What happens in the field if it's misaligned,
17 how much misalignment are we talking about, one. And an
18 inspector can come out into the field and red tag
19 anything and say this has to come down because that is
20 not how the manufacturer made the hanger. That is not
21 what you bought off of the shelf. That looks completely
22 different to what you picked up on the shelf.

23 Q. Let's say the alignment was off by a degree or
24 two. Is that something that could be addressed in the
25 field when you're installing the truss?

1 A. Because everything is deformable, every material
2 is deformable with sufficient force, with sufficient
3 force you can get almost any material to do what you want
4 if it does not fail in the process of getting there.

5 Q. So at what point does the hanger become so rigid
6 that it would not move if a shear force is applied to the
7 beam?

8 A. It is impossible for a hanger or any material on
9 the plant to become rigid.

10 Q. And that's because everything is inherently
11 deformable; is that correct?

12 A. Every material that we know of on this planet
13 that we inherited is deformable.

14 Q. And so does -- is 12-gauge steel or 12-gauge
15 sheet metal -- sorry, I'll reask my question.

16 Does 12-gauge sheet metal have a different
17 deformability than, say, quarter-inch steel plate?

18 A. It will depend on something called the elastic
19 modulus.

20 Q. Okay. So is there a situation where 12-gauge
21 sheet metal would have the same deformability as
22 half-inch steel plate?

23 A. Deformability depends on a number of things.
24 One is the elastic modulus; two is the configuration that
25 is usually a parameter that all engineers -- every

1 engineer, any PHOSITA will know, is the modulus of
2 elasticity.

3 So we talked about the elastic modulus. We
4 talked about the -- I'm sorry, I said modulus of
5 elasticity. The elastic modulus and modulus of
6 elasticity are the same thing. The moment of inertia,
7 which is a cross-section of the property, and the overall
8 dimensions.

9 So when we discuss stiffness, there are several
10 elements that play into stiffness.

11 Q. Are any of those -- oh, I apologize. Please go
12 ahead.

13 A. No, no, go ahead.

14 Q. I was just wondering if any of those elements
15 that you refer to are illustrated in figure 25.

16 A. It's illustrated by the fact that it is
17 configured, one. The configuration is going to give you
18 the moment of inertia, the dimension, and it shows that
19 it has some dimension because it shows size. And if it's
20 made out of steel, it's going to have elastic properties.

21 Q. So looking at figure 25 and just figure 25, can
22 you calculate the moment of inertia?

23 A. No.

24 Q. Okay. And just looking at figure 25, can you
25 calculate the elastic properties of this hanger?

1 A. Looking at the figure, no. You cannot look at
2 any figure and determine the two things that you have
3 said unless, one, you have dimensions, and two, you're
4 told what material you have. There's no engineer on the
5 planet who can do it.

6 Q. Okay. I'd like you to go ahead and turn to
7 Exhibit 1041.

8 Actually, before we do that, I apologize. Can
9 we go back to Exhibit 2056. This is the AISC document
10 that we were talking about earlier.

11 A. Uh-huh.

12 Q. Okay. I want to go back to that page 16.1-512.
13 It's what's labeled as page 28 in the Exhibit 2056.

14 A. Yes.

15 Q. So earlier you were describing the figure that's
16 on the bottom right portion of the page as showing joints
17 between elements that are configured to flex with respect
18 to each other; is that right?

19 A. No, the elements are configured to flex. The
20 framing angles between the elements are assumed to be --
21 the connection is assumed to be rigid. So there is no
22 change in the angle, framing angles.

23 So member B2, which is the upper horizontal line
24 on the right-hand side --

25 Q. Uh-huh.

1 A. -- and member C2, which is between points A and
2 B, you assume that the framing angle between those two do
3 not change. You assume that the framing angle does not
4 change.

5 Q. And practically speaking, though, is that
6 assumption correct, that they cannot change?

7 A. The assumption is correct insofar as you have
8 detailed the connection between the members to give you
9 that configuration. So if you have elements or members
10 that frame -- in this case, we're talking about
11 members -- the frame into each other and they are rigidly
12 fixed to each other, then you would detail it such that
13 that framing angle is not zero because it cannot be -- a
14 change in the framing angle is zero, because it is
15 impossible for it to be zero because all materials
16 deform.

17 However, you configure to minimize the change in
18 that framing angle because the parts are rigidly fixed to
19 each other.

20 Q. Is it fair to say that those parts that are
21 rigidly fixed to each other are still intended to allow
22 for some movement with respect to each other?

23 A. Because all materials are deformable, yes.

24 Q. And is it correct that this -- these elements
25 that are described in Exhibit 2056 are intended to be

1 used in seismic -- or intended to allow for seismic
2 activity?

3 MR. EIDSON: Object to the form.

4 THE WITNESS: I'm sorry, someone said something.

5 MR. EIDSON: Object to the form.

6 Q. BY MS. HOLOUBEK: Is it correct that the
7 elements described in Exhibit 2056 are intended to allow
8 for movement due to seismic activity?

9 A. The document that you're looking at, 2056, is
10 not a seismic document.

11 Q. Okay. If we turn to your declaration,
12 Exhibit 2057, paragraph 11. It's the part of paragraph
13 11 that's on page 9 of the exhibit.

14 THE WITNESS: Before we start -- I am so sorry,
15 but I need another break.

16 MS. HOLOUBEK: Okay.

17 THE WITNESS: What I was mentioning before.
18 Sorry.

19 MS. HOLOUBEK: Okay. That's okay. Thanks.

20 (Recess.)

21 Q. BY MS. HOLOUBEK: Dr. Serrette, just before we
22 broke, we were talking about paragraph 11 of your
23 declaration, Exhibit 2057.

24 A. Yes.

25 Q. And that paragraph spans two pages, and so I'm

1 referring to a portion that's at the end of page -- the
2 paragraph on page 9.

3 A. Yes.

4 Q. At the very end, you say -- well, first of all,
5 this paragraph is discussing Exhibit 2056, the AISC
6 document that we've been talking about today; is that
7 correct?

8 A. That is correct.

9 Q. And you indicate that there can and would be
10 some relative rotation at the joint, such as in a seismic
11 event; is that correct?

12 A. That is correct.

13 Q. What do you mean by that sentence?

14 A. Okay. So let me read the sentence. Rigid in
15 this context is meant to convey the intent is to limit
16 the relative rotation between the framing members for
17 intended use. However, there can and would be some
18 relative rotation at the joint such as -- I'm not saying
19 only in a seismic event.

20 The reason I used the example of a seismic event
21 is because when we design structures seismically, we
22 reduce the design force. Structures that are designed --
23 steel structures that are designed with rigid
24 connections, which are also referred to as
25 moment-resistant connections, they resist moment. So

1 that's probably more appropriate to -- but engineers know
2 what we mean. Because we reduce the design force, we
3 expect the members to be designed a certain way. Because
4 we do not know exactly what an earthquake force will
5 bring.

6 So to try to bring to fore the example that if
7 the force is large enough, you will get a lot of
8 deformation. Seismic is an example that I think is vivid
9 in everyone's mind because you see what happens to
10 buildings when the force is larger than what we expected.

11 And so that was the intent of saying seismic,
12 was to give an example of a force that can be large
13 enough that will change, but it is not the force that you
14 would expect to be happening in normal use.

15 That said, and because I also said that the
16 document that we're looking at, 10 -- 2056 -- sorry --
17 AISC document is not a seismic document, it does not mean
18 it is not adopted in the seismic specification. Those
19 are two different things.

20 It is not a seismic document so it applies to
21 any design. But it is adopted in the seismic. And
22 seismic is given in the example here as a magnitude of
23 force that can be relatively high. Not the regular
24 earthquake, but the maximum earthquake that we are
25 expecting, and we don't really know what it is. So

1 that's the intent.

2 Q. So based on your statements here in paragraph
3 11, is it fair to say that in practice, designers would
4 design a hanger intending to allow some rotation in case
5 of force on the hanger such as a seismic event; is that
6 correct?

7 MR. EIDSON: Object to the form.

8 Q. BY MS. HOLOUBEK: You can answer the question.

9 A. A seismic event is a large event. And the way
10 you do design is at several levels. So we would expect
11 that when we get a small seismic event, nothing changes.
12 You get a moderate seismic event, you get some damage.
13 You get the maximum considered seismic event, you do not
14 want the structure to collapse, but it will look awful.

15 So given the fact that when we do a design, we
16 have these different levels of design, can you rephrase
17 the question?

18 Q. Is it fair to say that in practice, a hanger
19 designer or a manufacturer would design the hanger so as
20 to allow for some rotation due to shear force?

21 A. I don't know what "some" means because we're --
22 typically as an engineer, you have to quantify.

23 Q. Okay. When you in your -- sorry, let me
24 rephrase.

25 In your paragraph 11, you refer to "relative

1 rotation." Can you define what you mean by "relative
2 rotation"?

3 A. The rotation of one -- if two members are
4 connected to each other, and there is a pre-configured
5 orientation of the members, one member -- if you hold one
6 member in place, the other member can move, rotate
7 relative to that one. That's that relative rotation that
8 I am referring to. Or relative deformation.

9 Q. Okay. And so that relative rotation would be
10 possible even in a hanger designed as described in the
11 AISC document; is that correct?

12 A. Relative rotation would be possible in any
13 configured structure if the force is high enough because
14 all materials are deformable. But the intent is not to
15 build it so that it can be deformed. The intent is if
16 it's configured pre-confined -- or pre-confined -- if the
17 orientations are predefined, it is manufactured that way,
18 it is sold that way. What happens after that, the
19 engineer has no control over.

20 The engineer is doing calculations based on the
21 configuration of the hanger, which is predefined. It is
22 not intended to be deformed. The configuration is not
23 intended to be changed, and all of the engineer's
24 calculations are based on that.

25 The engineer -- it is impossible for the

1 engineer to design for something that they do not know
2 will happen in the field.

3 MS. HOLOUBEK: I know that we took a short
4 break, but I think it's been a while since we've had a --
5 sort of a standard-sized break. We've been going for a
6 couple of hours now. Can we take a 15-minute break?

7 THE WITNESS: Sure.

8 (Recess.)

9 Q. BY MS. HOLOUBEK: Dr. Serrette, did you speak to
10 anyone on the break that we just had?

11 A. No.

12 Q. And did you review any documents on the break
13 that we just had?

14 A. No documents related to this.

15 Q. Okay. I'd like you to turn to or open
16 Exhibit 1041, please.

17 A. Yes. I am there.

18 Q. Okay. And this is a US patent to Young; is that
19 correct?

20 A. Yes, that's what it says.

21 Q. Do you recognize this document?

22 A. Yes, I do.

23 Q. Okay. Can you take a look -- I guess it's
24 page 2 of the document showing figure 1.

25 A. Yes.

1 Q. So figure 1 shows an uninstalled hanger, while
2 on the next page, figure 4 shows the same hanger as
3 installed; is that correct?

4 A. Yes.

5 Q. Can you turn back to figure 1 again.

6 A. Uh-huh.

7 Q. Would you characterize the hanger elements shown
8 in figure 1 as rigidly fixed with respect to each other?

9 A. Looking at the picture, without knowing exactly
10 what the manufacturer intended, they look -- they appear
11 to me to be rigidly fixed.

12 I also note, however, on the first page in the
13 abstract, it describes -- just a minute, I have to move
14 this up -- a slope and skew hanger for connecting a
15 rafter to a beam for a variety of slope and skew angles.

16 So this variety has some meaning, I would think.
17 But otherwise, just looking at the figure, and if you
18 told me looking at the figure -- and this is just one
19 piece of metal that was punched and bent into shape, I
20 would respond in the affirmative, it looks like the
21 elements are rigidly fixed with respect to each other.

22 Q. And to tell any different, you'd go to the
23 abstract or the specification to see if there are any
24 further details; is that correct?

25 A. Well, if an engineer's providing this drawing,

1 they will indicate what is -- what is the intent of the
2 drawing. I believe in -- and you would have to excuse
3 me, I am not an attorney -- I believe I have to then read
4 the language to figure out what was intended.

5 Q. Okay. Let's go back to your declaration,
6 Exhibit 2057, and turn to paragraph 21.

7 A. Okay. I'm there.

8 Q. Paragraph 21, you say that the term "extending
9 from" should be construed to mean that the starting point
10 of element A's extension is on element B; is that
11 correct?

12 A. Yes, that's what it says.

13 Q. Okay. And in the following several pages, which
14 are paragraphs 22 through 24, you provide examples of
15 that; correct?

16 A. Yes.

17 Q. And in paragraph 25, you refer to the dictionary
18 definition that you used for your construction; is that
19 correct?

20 A. Yes.

21 Q. And that dictionary definition explicitly
22 defines the word "from"; is that correct?

23 A. It gives a definition of the word "from," yes.

24 Q. Okay. Does the addition of the word "away" in
25 the phrase "extending away from" change that definition

1 of the word "from"?

2 A. It changed the definition of the phrase
3 "extending from."

4 Q. And how does it change the definition of the
5 phrase "extending from"?

6 A. Well, "extending from," as you correctly
7 indicated, is defined in paragraph 21. "Extending away
8 from" gives a direction.

9 Q. So is the base word "from," is that definition
10 changed at all when you add the word "away" to the
11 phrase?

12 A. "From" is the dictionary definition?

13 Q. (Nods head.)

14 A. Again, I think it's not -- in my opinion, you
15 have to look at the phrase, not just the individual
16 words. And the two phrases are "extending from" and
17 "extending away from."

18 I can take a number of words and just use them
19 without context and they will have very little meaning.
20 One example is the word "run."

21 Q. So in the -- in the declaration, in construing
22 the phrase "extending from," you used this dictionary
23 definition of "from"; is that correct?

24 A. No. The dictionary definition was there in the
25 declaration in trying to explain what "extending from" in

1 the language of the patent meant. I was not trying to
2 define "from" specifically. I was trying to use it --
3 explain the word "from" in the context of how it's used
4 in the phrase.

5 Q. So this dictionary definition you were not
6 relying on for its definition of the word "from"; is that
7 correct?

8 A. I am using the dictionary definition in the
9 context of "extending from," "extending away from."

10 Q. So how does the use of this dictionary
11 definition of the word "from" change when you add the
12 word "away" to that phrase?

13 A. "Away" gives a direction. It does not give a
14 starting point.

15 Q. Okay. So the word "away" does not change the
16 starting point; is that correct?

17 MR. EIDSON: Object to the form.

18 THE WITNESS: Sorry.

19 Q. BY MS. HOLOUBEK: You can answer the question.

20 A. It's not that it -- the word "away" has nothing
21 to do with the starting point. It only -- only talks
22 about a direction.

23 Q. Okay. I'd like to go back to the Motion to
24 Amend and the proposed substitute claims. So that's the
25 paper 37 that we talked about before.

1 A. Let me bring that up again. Okay.

2 Q. And at the end of that document, as you recall,
3 there was a listing of claims we talked about earlier
4 today. Can you scroll down to claim 38. And this is
5 page 42 of the PDF. It's page 8 of the appendix. The
6 number at the bottom is eight.

7 A. Appendix. And I think I noted this was not a
8 document that I looked at except for those tables that we
9 talked about earlier this morning.

10 Q. Okay. So if you look at claim 38, do you see
11 that it says that it replaces claim 18?

12 A. The language here says replaces claim 18.

13 Q. Okay. And do you see that the claim 38 says
14 that the extension portion includes extension flanges
15 extending away from the channel-shaped portion?

16 A. I see that language here, yes. I read it for
17 the first time here in this document.

18 Hello?

19 Q. Yes. Are you ready?

20 MR. EIDSON: Is there a question pending?

21 THE WITNESS: I just thought I had missed
22 something.

23 Q. BY MS. HOLOUBEK: Oh, no. I thought you said
24 you were reading the claim.

25 A. Oh, no, I read it. I read it.

1 Q. Okay. Sorry.

2 So in your opinion, is this claim 38 broad
3 enough so that the extension flanges can start anywhere
4 in relation to the channel-shaped portion?

5 MR. EIDSON: Objection. Foundation.

6 Q. BY MS. HOLOUBEK: Go ahead, Dr. Serrette. You
7 can answer the question.

8 A. I was not asked to comment to that. I was asked
9 to respond to the things that I responded to in my
10 declaration.

11 Q. Okay. And so this isn't covered in your
12 declaration; is that correct?

13 A. I was not asked to respond to that.

14 Q. Okay. In that case, I'd like to move on and
15 talk about Tsukamoto. This is Exhibit 1009. Although
16 we're talking about Exhibit 1009, I'm going to be asking
17 you some questions about your declaration, Exhibit 2057.

18 A. Okay. So I would need to be switching back and
19 forth?

20 Q. Probably not. I think there are some figures in
21 your declaration that we can refer to.

22 A. Okay.

23 Q. So if you can turn to paragraph 68 of your
24 declaration, Exhibit 2057.

25 A. Okay. I am there.

1 Q. Okay. In the middle of that paragraph 68, you
2 say that due to the sheet metal thickness, a bend of
3 sheet metal is performed over a radius and not a sharp
4 90-degree angle; is that correct?

5 A. That is correct.

6 Q. Okay. So now let's take a look at paragraph 64
7 of that same declaration.

8 A. Uh-huh. Yes.

9 Q. At the bottom of paragraph 64, I guess it's the
10 bottom of page 41, you have an enlarged view of Tsukamoto
11 figure 3; is that correct?

12 A. That is correct.

13 Q. And you've placed a red circle around a bend in
14 the sheet metal; is that correct?

15 A. Yes.

16 Q. Okay. In this figure with the statement that a
17 bend in sheet metal occurs over some radius, how can you
18 tell where flange 3B ends and flange 3A starts?

19 A. Looking at this figure, just this drawing that
20 is blown up here?

21 Q. Uh-huh. Yes.

22 A. The -- the drawing itself, because it has no
23 breaks that I can see from 3A to 3B. It looks that is
24 continuous.

25 Q. So can you tell where 3B transitions over to 3A

1 from this drawing?

2 A. If I am interpreting this drawing with nothing
3 else, and based on just CAD detailing, I would say this
4 is continuous.

5 Q. So what do you mean by the word "continuous"?

6 A. "Continuous" means that you -- the definition of
7 "continuous" that is used in engineering and science,
8 mathematics, is the slope on the right and the left at a
9 point is equal. And so that if I pick any point on that
10 curve going from 3A to 3B, and I draw a tangent on the
11 left and a tangent on the right, they will be essentially
12 the same tangent line.

13 And that is a definition that would be used in
14 engineering, mathematics, and science.

15 Q. Is it your position that a flange has to be
16 flat?

17 A. A flange is essentially a plate, and so it has
18 to be used in context. You can have a flange that is --
19 it's the context. And in engineering, depending on the
20 orientation of a member, you can call it a flange. You
21 can turn it 90 degrees, it sudden becomes a web. So the
22 context has to be explained.

23 If you're talking about planes that's a
24 completely different issue. Planes are well defined.

25 Q. So let's look back at this figure here in your

1 corresponding text in paragraph 64. You indicate that
2 the component labeled 3D appears to intersect the 3B
3 prior to the completion of the curved transition to 3A;
4 is that correct?

5 A. That's what the language says.

6 Q. Okay. Why can you also say the opposite, that
7 if you're extending from flange 3A, that 3B doesn't start
8 until the curved transition from 3A is complete?

9 A. Can you repeat that again slowly?

10 Q. Sure, sure. And I'll back up again referring to
11 that statement in your Paragraph 64.

12 You seem to start with figure -- sorry. You
13 seem to start with flange 3B and say that flange 3B is
14 not complete until it completes the curve transition to
15 3A.

16 A. Okay.

17 Q. Am I correct?

18 A. And you're reading -- is that an interpretation
19 or we're reading the last sentence?

20 Q. I'm asking if that's what your last sentence
21 means.

22 A. The figure 3 also appears to contradict -- this
23 is what it says -- intersecting planes. Argument labeled
24 3D, intersecting. It's talking about 3D and 3B
25 intersecting, 3B prior to the completion of the curve.

1 Q. So you're saying as the component labeled 3D
2 appears to intersect 3B prior to completion of curve
3 transition 3A. So is that as the component and
4 everything that follows, is that your explanation or is
5 that your understanding of Simpson's argument?

6 A. Let me just read the sentence again so that I
7 don't give you just the different -- just mine.

8 So it says figure 3 appears to contradict
9 Simpson's intersecting plane argument that 3D appears to
10 intersect 3B. Okay.

11 So 3B is continuous with 3A. There is nothing
12 in this diagram that says, except for the drawing showing
13 that the lines reach up and touch in this one particular
14 drawing, that 3B is going to be intersecting on that
15 corner radius that continuous piece that is labeled 3B
16 and 3A.

17 Q. So is it fair to say that 3A and 3B essentially
18 overlap there? How would you describe that connection
19 between 3A and 3B?

20 MR. EIDSON: Object to the form.

21 Q. BY MS. HOLOUBEK: You can answer the question.

22 A. 3B and 3A are continuous around that corner.
23 Continuity implies that there is -- if you take any point
24 on that sloped region or that radiused region, the slope
25 on the left, which is also called the tangent, and the

1 slope on the right, which is also called the tangent,
2 will be the same.

3 Q. And can you clearly define any point along that
4 curve as being part of 3B versus 3A?

5 A. The curve belongs to neither 3A or 3B.
6 Mathematically, engineering wise, it is a transition
7 because you bent the member.

8 So if I assume that 3A and 3B were straight
9 horizontally; right? Then it will be one plane that
10 defines 3A and 3B. Once I've bent it, that curve you
11 cannot say belongs to A or B. The material has not
12 changed, the piece has not changed, but you have now bent
13 it.

14 So the how you define what happens in that curve
15 is what tells you that it is still continuous. It
16 started as a continuous piece, it was bent, it is still
17 continuous, and it is still continuous because the
18 tangent on the left and the right at any point in that
19 curve is the same. That is the only way I can describe
20 that.

21 Q. Is it possible that this curved part between the
22 flanges isn't part of any flange? So this curved part
23 between three -- I'll rephrase.

24 Is it possible that this curved part between 3B
25 and 3A isn't part of any flange?

1 A. Is it possible or are we talking the context of
2 Tsukamoto?

3 Q. In this context of Tsukamoto.

4 A. In the context of Tsukamoto, if you look at the
5 full context of Tsukamoto, that is not the case.

6 Q. Okay. And thinking about the '510 patent, the
7 '510 patent hanger is also made out of bent sheet metal;
8 is that correct?

9 A. It is -- yes, out of formed sheet metal.

10 Q. So the bends in the '510 patent hanger wouldn't
11 have sharp 90-degree bends, either; is that correct?

12 A. The framing angle between the elements is
13 90 degrees, but you must have a radius. The reason you
14 must have a radius is if you make a sharp 90-degree bend,
15 all materials will break, every one on the planet.
16 Because the strain will go to infinity. And if the
17 strain goes to infinity, there is nothing that we know of
18 that can stretch forever.

19 So you cannot possibly make in any material a
20 right-angle bend. You must have a radius. It's just a
21 mechanics, structural mechanics-based thing, if you wish.

22 Q. And when you say it must have a radius, you're
23 referring there to the sheet metal from which the hanger
24 is made; is that correct?

25 A. I am referring to the bend. So, for example, in

1 what we're looking at, when we're looking at 3B and 3A,
2 that radius is what I am referring to.

3 Q. But it's that bend in the sheet metal; correct?
4 Not a framing member, but a bend in the sheet metal?

5 A. If you're forming it, yes, you're bending it.
6 So it's in the metal that you're bending, hopefully.

7 Q. Looking at paragraph 68 of your declaration.
8 This is Exhibit 2057.

9 A. Yes.

10 Q. There is a picture of a blank at the top of the
11 page; is that correct?

12 A. Yes.

13 Q. And you describe this as a version of a blank
14 for Tsukamoto; is that correct?

15 A. I describe it as the corrected version of the
16 blank that was provided by -- in Fennell's declaration.

17 Q. And this blank is intended to correspond to the
18 hanger in the Tsukamoto; is that correct?

19 A. This blank is intended to correct the error in
20 the Fennell declaration concerning the circled portion of
21 the elliptical blown up -- well, if we go to the
22 elliptical blown-up portion, there is a shift between
23 that sort of diagonal -- well, the dashed diagonal line
24 and the horizontal solid with the dashed line.

25 Q. Looking at this blank, though, we're talking

1 about this blank in the context of Tsukamoto; is that
2 correct?

3 A. This is the context in which it was used in the
4 Fennell declaration, correct.

5 Q. Would this blank as shown in your figure, when
6 assembled, form the hanger of Tsukamoto?

7 A. It is the exact same blank that Fennell claimed
8 would form the hanger of Tsukamoto. This image is a
9 correction of an error in Fennell's drawing.

10 Q. Do you believe that this blank, when formed,
11 would create the Tsukamoto hanger?

12 A. I believe it to the same extent that Fennell
13 believed it.

14 Q. Okay. Did you create this image of the blank?

15 A. This image was made for me to just shift that
16 one space that I have indicated.

17 Q. Who made this image for you?

18 A. I asked counsel's drafters to make that image.

19 Q. Okay. Did you try to actually make a metal
20 hanger from this blank?

21 A. This blank was taken from Fennell. Whatever he
22 assumed, I assumed. I made a correction to it. So your
23 question was did I try to make a hanger from this blank?
24 I will precede that question with what I just said. No,
25 I did not personally try to make a hanger out of this

1 blank.

2 And so the only difference, I would say again,
3 between this blank and the blank that Fennell made was
4 that change in that position. So if Fennell could not
5 make a hanger out of it, it doesn't matter. The focus is
6 what was important.

7 Q. You've been talking about Mr. Fennell's actions.
8 You said that you assumed what he assumed. Are you aware
9 of what his assumptions were in making the original
10 blank?

11 A. His assumption is what I was responding to in my
12 declaration, that there was a common point. And I was
13 pointing out that that was an error in his judgement in
14 reviewing the diagrams that illustrated the Tsukamoto
15 hanger.

16 Q. So what assumptions or what of your assumptions
17 were you referring to when you said that you assume what
18 he assumed?

19 A. Okay. So in Fennell's declaration, that -- if
20 we're looking again at the figure above paragraph 68, I'm
21 going to be looking -- there are two circular-ish
22 figures, and then there are two lines, one extending from
23 the smaller circular shape to the large elliptical shape.
24 I'm looking at the large elliptical shape. There's
25 something called a top flange. And just above that text,

1 there's a solid line, and if I continue -- starting on
2 the left and I continue to the right, it changes to a
3 dashed line.

4 On the solid part of that horizontal line, as I
5 start moving left, there's a vertical dashed line. So
6 I'm just trying to establish the point there's a "T" at
7 that point. I just want to make sure that we're at the
8 same position in the drawing I'm trying to describe.

9 Q. Sure.

10 A. As I move from the "T," at that "T" point,
11 Fennell's drawing -- and the only difference between
12 Fennell's drawing and this one is that in Fennell's
13 drawing, as I move from that "T" and I move across to the
14 right, there's a solid diagonal line that goes up and to
15 the left. Fennell had that line directly at the "T."

16 I moved -- had that line moved to the right.
17 And I had that line moved to the right. If you go now to
18 page -- well, above paragraph 69, and this is a drawing
19 that was produced by -- I believe it was Fennell in one
20 of his original declarations. You would see that there
21 is a little bit of a gap there.

22 Now if you look at Tsukamoto, it becomes
23 completely evident, looking at the totality of the
24 drawings, that Fennell's interpretation of the blank and
25 that intersection of that left-leaning diagonal with that

1 "T" point must have been in error.

2 Q. Did you -- but you did not actually try to make
3 a metal hanger to see if it could be made from the blank
4 provided in Mr. Fennell's declaration; is that correct?

5 A. I did not make a blank and try to form the
6 hanger.

7 Q. Have you ever created a hanger blank before?

8 A. I have never created a hanger blank before.

9 Q. Have you ever made a metal hanger from a hanger
10 blank before?

11 A. I have never made a metal hanger from a hanger
12 blank before.

13 MS. HOLOUBEK: Okay. I see that we're about
14 to -- I guess it's 12:20 your time. Can I propose that
15 we break for lunch for maybe 45 minutes?

16 THE WITNESS: That's okay with me.

17 MS. HOLOUBEK: Does that work for everyone?

18 MR. EIDSON: Yeah.

19 THE WITNESS: So come back at 1:05 or 1:00?
20 1:05 will be 45.

21 MS. HOLOUBEK: We can do 1 o'clock to make it
22 easier for everyone.

23 THE REPORTER: Off the record.

24 (Recess.)

25 THE REPORTER: Back on the record, Counsel.

1 Q. BY MS. HOLOUBEK: Dr. Serrette, over the break
2 did you speak to anyone about the substance of your
3 deposition today?

4 A. No.

5 Q. And over the break, did you review any documents
6 related to your deposition today?

7 A. No.

8 MS. HOLOUBEK: No further questions, and pass
9 the witness.

10 MR. EIDSON: Joe, you weren't kidding.

11 We have no questions at this time.

12 Dr. Serrette, thank you for your time.

13 THE WITNESS: Thank you.

14 MS. HOLOUBEK: Thank you, Dr. Serrette. I
15 appreciate your time today.

16 THE REPORTER: Can I ask you, Mr. Eidson, if you
17 need a copy of the transcript?

18 MR. EIDSON: Yeah, we'll take a copy and I
19 think -- yes, we'll take a copy.

20 (Time noted: 1:03 p.m.)

21 --oOo--

22

23

24

25

I declare under the penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on _____, 2020, at _____.

SIGNATURE OF THE WITNESS

1 STATE OF CALIFORNIA) ss:

2 COUNTY OF MARIN)

3
4 I, LESLIE ROCKWOOD ROSAS, RPR, CSR NO. 3462, do
5 hereby certify:

6 That the foregoing deposition testimony was
7 taken before me at the time and place therein set forth
8 and at which time the witness was administered the oath;

9 That testimony of the witness and all objections
10 made by counsel at the time of the examination were
11 recorded stenographically by me, and were thereafter
12 transcribed under my direction and supervision, and that
13 the foregoing pages contain a full, true and accurate
14 record of all proceedings and testimony to the best of my
15 skill and ability.

16 I further certify that I am neither counsel for
17 any party to said action, nor am I related to any party
18 to said action, nor am I in any way interested in the
19 outcome thereof.

20 IN WITNESS WHEREOF, I have subscribed my name
21 this 22nd day of December, 2020.

22
23 
24

25 LESLIE ROCKWOOD ROSAS, RPR, CSR NO. 3462

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS
COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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