IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GENERAC POWER SYSTEMS, INC.

Petitioner

V.

CHAMPION POWER EQUIPMENT, INC.,

Patent Owner.

Patent No. 10,697,398

Issued: Jun. 30, 2020

Inter Partes Review No. IPR2025-01271

VIDEO-RECORDED REMOTE ZOOM VIDEOCONFERENCE

DEPOSITION OF DR. WILLIAM SINGHOSE

Taken on Tuesday, August 4, 2026

Scheduled for 9:00 a.m. CDT

STENOGRAPHIC REPORTER: DANA S. ANDERSON-LINNELL

Job No. MW 8345697

VIDEO-RECORDED REMOTE ZOOM VIDEOCONFERENCE DEPOSITION OF DR. WILLIAM SINGHOSE taken on Tuesday, August 4, 2026, commencing at 9:22 a.m. CDT, via a REMOTE ZOOM PROCEEDING, before Dana S. Anderson-Linnell, a Stenographic Shorthand Reporter, Remote Notary and Notary Public of and for the State of Minnesota, Commission #20011229.

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(Appearances continued on next page.)

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ALSO PRESENT: Dave Young, videographer

NOTE: The original transcript will be filed with the Merchant and Gould Law Firm, pursuant to the applicable Rules of Civil Procedure.

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WITNESS: DR. WILLIAM SINGHOSE
EXAMINATION BY:
Mr. Stemler 8

INSTRUCTIONS NOT TO ANSWER: (None.)

PRODUCTION REQUESTS: 14

INDEX OF EXHIBITS MARKED:

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(Original exhibits attached to original transcript; copies to counsel as requested. Previously marked exhibits referenced not attached.)

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

THE COURT REPORTER: Do all counsel stipulate that I may swear in the witness remotely over the Zoom videoconference?

MR. STEMLER: Yes.

MR. FINCH: Yes.

THE VIDEOGRAPHER: Good morning. We're going on the record at 9:22 a.m. on August 4th, 2026.

Please note this deposition is being conducted virtually. Quality of recording depends on quality of camera and Internet connection of participants. What is seen from the witness and heard on the screen is what will be recorded. Audio and video recording will continue to take place unless all parties agree to go off the record.

This is Media Unit 1 of the video-recorded deposition of Dr. William Singhose, taken by counsel for the petitioner in the matter of Generac Power Systems, Incorporated versus Champion Power Equipment, Incorporated, filed in the United States Patent and Trademark Office before the Patent and Appeals Board, Case Number IPR2025-01271.

My name is Dave Young. I'm the

videographer. Our court reporter today is Dana Anderson. We are both representing Veritext Legal Solutions. I'm not related to any party in this action, nor am I financially interested in the outcome.

If there are any objections to this proceeding, please state them at the time of your appearance. Will counsel now state their appearances and affiliations for the record, beginning with the noticing attorney.

MR. STEMLER: Yep. My name is Taylor Stemler. I'm with the law firm Merchant and Gould. I represent Generac Power Systems in connection with this proceeding.

MR. FINCH: My name is Thomas Finch with the law firm Perilla, Knox and Hildebrandt on behalf of patent owner, Champion Power Equipment, Incorporated.

THE VIDEOGRAPHER: And will the court reporter please swear in the witness, and then we can proceed.

DR. WILLIAM SINGHOSE,

called as a witness, being first duly sworn, was examined and testified as follows:

MR. STEMLER: All right. Thank you.

EXAMINATION

BY MR. STEMLER:

Q. Good morning, Dr. Singhose.

A. Good morning, Mr. Stemler. You're a little hard to see, but I see your name there.

Q. Sorry. Yes. I've got a bright light in my background. I'll try to fix that so we can see each other a little better. How's that?

A. Oh, yeah, it looks better. I can see you now.

Q. All right. Sorry about that. Like I said, I'm Taylor. I represent Generac Power Systems in this matter. Nice to finally meet you. Sorry about some of the scheduling delays this morning. Really appreciate you working through that and joining us this morning. So --

A. No problem for me.

Q. So like I said, I represent Generac in connection with IPR2025-01271. And this IPR relates to United States Patent Number 10,697,398. I understand you submitted a declaration in connection with that IPR, is that correct?

A. Yes.

Q. Thank you. Dr. Singhose, you understand today that your testimony is under oath, and this testimony has the same force and effect as it would as if you were administering it in a courtroom in front of a judge and a jury, right?
A. Yes.
Q. Okay. Throughout today's deposition, I'll do my best to make my answers [sic] absolutely clear. If they are not clear, please let me know, and I will attempt to rephrase them. Otherwise if you do proceed with answering a question, we'll understand that you understand the question as it was asked. Does that make sense?
A. Yes, it does.
Q. Okay. And then you understand that the testimony that you're providing today is being recorded by a court reporter, right?
A. Yes.
Q. And that it's important that you understand -- that you answer the questions audibly?
A. Yes.
Q. Okay. One other thing that I would like

to do today is to agree to not talk over each other. I will do my best to not talk over you. I will ask that you do your best to not talk over me. Does that all sound okay?

A. Yes.

Q. Dr. Singhose, any reason you can't give fair and accurate testimony today?

A. No.

Q. Where are you today?

A. I'm in -- well, I'm just north of Atlanta. I'm not exactly sure of the town. Maybe it's Marietta or Sandy Springs.

Q. In, like, a hotel or something?

A. Oh, I'm in the law offices of the attorneys here.

Q. Oh, okay.

A. I mean, not in the same room as them. I'm in a conference room. They're somewhere else. I'm not sure where they're at.

Q. I see. Got it. What law firm is that?

A. That's the Perilla Knox law firm.

Q. Okay. And are you alone in the conference room then?

A. Yes, I am.

Q. Got it. Okay. Do you have any

documents in there with you?
A. Yeah. When I showed up here, there was -- looks like there's five binders of materials on the desk here for me.
Q. Oh, what's in the binders?
A. Well, let's see. One of them is my declaration --
Q. Okay.
A. -- talking about there. The next one over -- oh, this is the patent and its file history.
Q. Okay.
A. I mean, I'm just looking at what they put on the front there.
Q. Sure. Yeah.
A. This one, it's Exhibit 1003, 1004, 1005, 1006, 1007, 1009 and 1012.
Q. Okay.
A. And then let's see what they put over here. Here are some more exhibits. I'm not -- if you want me to read them, I will, but they're basically other exhibits, other patents. And I'll show this --
Q. If can you read the exhibit numbers on there, that would be great.

A. Okay. Yeah. Exhibit Number 1014, 1015, 1018, 1029, 1030, 1031, 1032, 1033, and then 1034, 1038, 1039 and 2080. And the last one is Exhibit 2079, 2081, 2100, 2101, 2126 through 2131. So --

Q. Okay.

A. -- [unintelligible] is what it says. I'm assuming that's what's inside.

Q. Thank you.

A. Okay.

MR. FINCH: And, Taylor, I'll represent for you that the binders contain the exhibits listed in the table in paragraph 24 of Dr. Singhose's declaration --

MR. STEMLER: Okay.

MR. FINCH: -- with the exception of, I guess, 1035 through 1037, which were videos, and therefore not suitable for printing in a binder.

MR. STEMLER: Understood. I would like to ask Dr. Singhose to flip through all of those documents and ensure that there are no notes or other alterations through the exhibits that are listed on the cover of those binders.

THE WITNESS: Okay.

MR. STEMLER: However, we may be able to short-circuit that process if Mr. Finch can represent that -- to me that there are no such notes provided by anyone from his firm.

MR. FINCH: No. The binders just contain the exhibits as filed with the exception of Exhibit 101, the '398 patent, which when printed out, was borderline illegible. So we printed a clean copy of Exhibit -- of U.S. Patent Number 10,697,398.

MR. STEMLER: I see. Thank you.

BY MR. STEMLER:

Q. Dr. Singhose, have you made any notes on any of those materials since they were printed?

A. No. I just opened them up -- actually, I didn't even open them up. I just showed you the covers just now.

Q. Sure. Okay. Anything else in there with you today?

A. I see a pen over there and a remote control, water. Oh, there's one other sheet here. Let's see. I think it was under one of the binders. Oh, I think this is a -- this is a sheet (indicating) that highlights the claims that are in my report.

Q. I see.
A. I'm pretty sure that's what this is.
Q. Okay.
A. I think this is -- actually, this is from my report. It's just a blown-up version with the claims that I addressed highlighted.
Q. Sure. I see the -- I see that.
A. Okay. Yeah.
Q. Can you hold that up one more time for me, Dr. Singhose?
A. Sure.
Q. Okay.

MR. STEMLER: I would like to request that we receive a copy of that exhibit following today -- or a copy of that document following today's deposition.

MR. FINCH: Sure thing.

BY MR. STEMLER:

Q. Dr. Singhose, could you please read for me which of the claims are highlighted in each of those columns?
A. Sure. Under ground 1, I addressed claims 1, 3, 22 and 57.
Q. Uh-huh.
A. Under ground 2, I addressed claims 2, 4

through 14, 19 through 21, and claim 58. Under ground 3, I addressed claims 1, 3, 22 and 57. Under ground 4, I addressed claim 2, 4 through 14, 19 through 21 and claim 58. In ground 5, I addressed claim 1 and claim 15 and 16. And then in ground 8, I addressed claim 17. And in ground 9, I addressed claim 17 as well.

Q. Okay. Could you identify which of those claims you did not address?

A. Yes. So in ground 2, I was not asked to address claims 32 to 42. And then in claim 4, I was not asked to address claims 23 or 32 to 42. In claim 5, I was not asked to address claims 43 and 44. In ground 6, I was not asked to address claims 43 to 46, nor claim 56. In ground 7, I was not asked to address claims 43 to 46 or claims 53, 54, 56. And then ground 8, I was not asked to address claims 23 to 26. And in ground 9, I was not asked to address claims 23 to 26.

Q. Okay. And then can you hold that sheet up one more time for me, Dr. Singhose?

A. Yes.

Q. Thank you. Sorry. Just a little

longer.
A. Okay.
Q. Thank you. Do you know why you weren't asked to address those claims?
A. No. It's a long time ago. They just gave me a list, and I worked on the claims that they gave me.
Q. When did they give you the list?
A. I'm sure it's probably when I started working on my declaration, so it would have been maybe a month or two months before I submitted it.
Q. Okay. So that would be, like, four or four months ago, five months ago or something like that?
A. Yeah. Let's see. I submitted this declaration, I think, in late May.
Q. Okay.
A. So, yeah, probably in the -- you know, I kind of -- when I really first started working on it probably in March or April, they probably said: Just look at these claims.
Q. Did you ever ask about the other claims?
MR. FINCH: Objection, form.
THE WITNESS: I don't think so. I

wasn't looking for more work here. I just said: Which ones do you want me to work on here?

BY MR. STEMLER:

Q. Okay. Did you discuss this exhibit with any of the lawyers for Champion before you sat for today's deposition?

A. I mean, when I came into this room and they were setting me up, I saw it.

Q. Yeah.

A. And at that point they're like: Yeah, these are just -- you know, just in case it comes up, this is a simple way of saying which ones you worked on. I mean, it's all in my report, but I think --

Q. Yeah.

A. -- this was a -- it's just a simple way of putting it all in one page.

Q. A cheat sheet or whatever?

A. Yeah.

Q. Okay. Okay. Were there any claims that -- were there any claims that you were asked to address that you did not provide an opinion on?

MR. FINCH: Objection, form.

THE WITNESS: No.
BY MR. STEMLER:
Q. Okay. So this highlighted listing of claims reflects not only the claims that you did not provide an opinion on, but it's instead the claims that you were not asked to provide an opinion on, right?
MR. FINCH: Objection, form.
THE WITNESS: Yeah, I don't know about -- or I don't recall what I was asked specifically what to do. So I feel most confident saying it's the list of claims that I addressed.
BY MR. STEMLER:
Q. Okay. Sure. Okay. Have you looked at any of the non-highlighted claims?
A. Oh, I'm sure that when I first went to the patent, I looked at them, yeah. I probably read every word in the patent the first time through.
Q. Sure. Do you know if you formed an opinion on any of them?
A. Oh, [unintelligible] --
MR. FINCH: Objection, scope.
THE WITNESS: I would not have

formed an opinion. Takes me a while to form an opinion.
BY MR. STEMLER:
Q. Yeah. Okay. Okay. Nothing else in the room besides the pens, water, binders, remotes --
A. Yeah, I mean, there's a lot of stuff --
Q. -- [unintelligible] --
A. -- that's not mine. I don't --
Q. Yeah.
A. Like, plants and so forth, but --
Q. Yeah. Okay.
A. I basically brought nothing except my phone, which I turned off. And there's a pen over here for me to use. That's --
Q. All right. Cool.
A. That's all my stuff.
Q. Dr. Singhose, I know you've been deposed before. Could you tell me how many times you've been deposed?
A. I'm going to guess in 25 years or so I've probably been deposed about 50 times.
Q. Okay. What kind of cases have you been deposed in connection with?
A. The majority of my work has been in

intellectual property, so certainly IPRs like we're here for today, ITC cases, federal district court cases, some trade secret cases, some -- even some -- I think I did a contract case that involved intellectual property. And then I've also done a fair amount of work in what you might call product liability or standard of care, basically cases where people have been injured and I've been asked to investigate. And, again, it's not all product liability, but it could be, like, people did something wrong. So basically cases where people got injured generally.

Q. Sure. Dr. Singhose, you understand that this proceeding involves Generac Power Systems, Inc., right?

A. Yes.

Q. Will you understand that I'm referring to that party when I just use the term "Generac"?

A. Yes, I will.

Q. Okay. And same thing with Champion Power Equipment, Inc., will you understand that I'm referring to that party if I just use the term "Champion"?

A. Yes, I will understand that.
Q. Okay. Have you worked for Champion Power Equipment -- or how about I'll try that acronym -- or shorthand. Have you worked for Champion before?
A. Well, I haven't worked directly for Champion the company. I've worked for law firms that are representing them in other issues.
Q. Okay. Which law firms?
A. There's a company -- there's a law firm called Snell -- Snell and Willmar, I think, that's representing Champion versus Firman. And then Hush Blackwell, the law firm that is -- I don't exactly know all the details, but I think that Hush Blackwell is handling a lot of the matters versus Generac.
Q. Okay. Just those firms?
MR. FINCH: Objection, form.
THE WITNESS: No. There was another firm, Ziolkowski, that was involved in the first, like, year, year and a half of these matters, so I worked with them.
BY MR. STEMLER:
Q. Okay. Have you worked with them in

other matters?
A. I don't think so.
Q. Did you review any materials in preparation for today's deposition?
A. Yes, I did.
Q. What materials did you review?
A. Well, all those materials that we just talked about, those -- all those exhibits, I reviewed those at some point in this case. I think in the more recent past sort of targeting this deposition, I reviewed my declaration in this matter, the patent, the -- little bit of the file history, and then the prior art that has been asserted against the patent. I think that's primarily what I looked at in the last, like, say, week.
Q. Sure. Any other materials that you reviewed that were not filed as exhibits in this IPR?
MR. FINCH: Objection, form.
THE WITNESS: I don't think so. I think the only thing I looked at were these exhibits that are here.
BY MR. STEMLER:
Q. Okay. Did you meet with anybody to

prepare for this deposition?
A. Yes, I did.
Q. Who did you meet with?
A. My first meeting was with my wife to prepare picking up and dropping off kids depending on how long this goes. She's the most important person involved in this kind of operation. And then I did meet with some of the attorneys yesterday.
Q. Okay. I also had a meeting with my wife to prepare for today's deposition. What attorneys did you meet with to prepare for today's deposition?
A. Let's see. Tom, Thomas Finch, Scott Amy and Joe Staley.
Q. You said that meeting occurred yesterday?
A. Yes. It was actually a couple of meetings.
Q. All of which occurred yesterday?
A. Yes.
Q. How long did those meetings go for?
A. I'd say in total it was probably four, five hours.
Q. What did you guys discuss?

A. Just my declaration, for the most part, and the prior art that's asserted against the patent.
Q. Any particular parts of your declaration or the prior art that you reviewed?
A. I think we kind of went through the whole thing front to back just discussing it.
Q. Okay. And you reviewed the '398 patent, you said?
A. Yes.
Q. All right. I'm going to go ahead and introduce that now into Exhibit Share. I understand you -- do you have some kind of -- well, yeah, you're speaking to me on a computer, so I'm guessing you do have a way to view these exhibits that I'm sharing with you, is that right?
A. I hope so. We'll see if we can get that done. Otherwise, remember, I do have the hard copy that was printed.
Q. Okay. All right.
A. So if this doesn't work, I got that.
Q. Yeah. All right. Well, I'm going to try to introduce this thing now and see if this works. All right. I think this should be in

the Exhibit Share Marked Exhibits folder. Let me know if you can open that. And, you know, maybe I'll just share my screen with you too so we can just kind of walk through it together, but you can --

A. Exhibit Share, is that in the chat window or -- because I'm not seeing -- I'm just seeing a chat window. I'm not seeing anything that says Exhibit Share.

Q. How about I send you the link to it that I have, and you can see if that works for you?

A. Okay.

Q. I just dropped it in the chat with the --

A. Yeah. That's popping up now.

Q. And are you able to see my screen?

A. Yeah. I mean, it's pretty -- it's really blurry.

Q. Yeah. Okay.

A. I can see nominally what's on there.

Q. Sure.

A. It says I need a username for this Exhibit Share --

Q. Oh.

A. -- and exhibit -- a username and

password.

THE VIDEOGRAPHER: Is there an option to enter as a guest?

THE WITNESS: It's just asking me for a username. That's the first thing it's asking me for.

BY MR. STEMLER:

Q. Do you want to share your screen?

A. Do I want to share mine?

Q. Yeah. We can maybe --

A. Oh.

Q. -- help you walk through this.

A. Sure.

THE VIDEOGRAPHER: Do we want to go off the record to get this figured out?

MR. STEMLER: Yeah, maybe.

BY MR. STEMLER:

Q. Are you able to scroll down at all, Dr. Singhose?

A. Scroll --

THE COURT REPORTER: All of this is becoming part of the transcript. So, Taylor, I would suggest we do what Dave said and go off the record.

MR. STEMLER: Oh. All right. Let's

go off the record then.

THE COURT REPORTER: Thanks.

THE VIDEOGRAPHER: We are going off the record.

Time now is 9:48.

(Off the record 9:48 to 9:51.)

THE VIDEOGRAPHER: We are back on the record.

Time now is 9:51.

BY MR. STEMLER:

Q. Dr. Singhose, I am sharing a copy of Exhibit 1001, which I understand that you have in front of you in a printed-out copy. This is a copy of the '398 patent. Have you seen this document before?

A. (Views document.) Yes.

Q. Can you describe for me in your own words what this document is?

MR. FINCH: Objection, form.

THE WITNESS: This document is a patent. You read the full number of the patent before. It's titled Batteryless Dual Fuel Engine With Liquid Fuel Cut-Off, and it's generally a patent describing technology related to a dual-fuel engine.

BY MR. STEMLER:
Q. Sure. Okay. I'd like you to turn to the end of the document, specifically to claim 1.
A. Okay.
Q. Are you there?
A. Yes, I am.
Q. Okay. Can you identify the claim element that refers to a gaseous fuel valve that is positioned along a gaseous fuel line?
A. Yes.
MR. FINCH: Objection, form.
BY MR. STEMLER:
Q. And can you please read for me that element from claim 1?
A. Okay. "A gaseous fuel valve positioned along a gaseous fuel line coupling the gaseous fuel source to the carburetor; and..."
Q. Thank you. Dr. Singhose, could you please turn to Figure 1 of this document?
A. Okay.
Q. I'm going to rotate mine clockwise so we can see it without cocking our heads. Can you describe for me generally what is shown here in Figure 1?

A. Sure. Figure 1 is a perspective view of a dual-fuel generator coupled to a fuel delivery system, I mean, according to an embodiment of the invention.

Q. Can you identify the gaseous fuel line in this figure?

MR. FINCH: Objection, form.

THE WITNESS: Yes. I mean, it may have more than one fuel line, but I will look up the numbers. I think it's 36, but it should say in the text of the patent. Well, the text of the patent calls 36 the LPG supply hose 36, but that would be a gaseous fuel line.

BY MR. STEMLER:

Q. Okay. Where does the gaseous fuel line start?

MR. FINCH: Objection, form.

THE WITNESS: In this figure, I'm not sure it actually says exactly where it starts, but it starts approximately -- start -- maybe I should be more precise. "Starting," meaning starting near the fuel source side.

BY MR. STEMLER:

Q. Yeah.

A. That would be approximately where 43 is.

And 43 -- I can probably find what that is. I don't have a searchable version since we're not sharing the electronic copy here, but 43 is generally some type of connector or interface between that line and the fuel source, and then it would travel from there towards the generator, and it would attach to the side of the generator.

Q. You mentioned that piece 43 appears to be some kind of connector. Would that be part of the gaseous fuel line?

A. I would want to see exactly what it says, 43. It says an outlet coupled to LPG supply hose 36. So in that case it's teaching it's not part of the hose. It's actually coupled to the hose, so it's a coupler or a connector.

Q. Okay. And coupler -- things that are coupled to the hose would then not be part of the gaseous fuel line?

A. Well, I think, in this -- you're asking me about Figure 1. So, I think, in Figure 1 it wouldn't be, but I can imagine a version of this technology where you would put some kind of valve in the middle of a gaseous fuel line.

And then I'd have to think about that. But in this particular case, I don't think it is. I think it's just what the patent describes, which is this coupler to the line.

Q. Do you see that illustrated portion of -- it's a segment of a hose that's between the structures that are labeled 44 and 42 in Figure 1?

A. Yeah, there's quite a few things between 44 and 42, but did you say something that looks like a hose?

Q. Correct.

A. Okay. Yeah. It's not labeled.

Q. Correct.

A. But there is some kind of a hose or a line that passes from approximately 42 to over near 44.

Q. Yeah. Is that part of the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: Let me look up to see what these are. So 42 is a primary pressure regulator, and 44 is a secondary pressure regulator, as I recall, so I don't know. In this case, I don't think it has to be. I

haven't really considered that question until now. Often you would find those primary and secondary pressure regulators right up next to each other. So the fact that this has a piece of tubing in there, I'd have to think about whether or not it is part of the fuel line. It appears to be upstream from the fuel line that's identified here in this particular embodiment.

BY MR. STEMLER:

Q. What would you have to think about?

A. I'd probably want to go through this patent and see if it describes it as part of the fuel line because what I'm looking at here in Figure 30 -- in Figure 1 and the texts that I just looked up it's indicating that 36 is the gaseous fuel line.

Q. Okay.

A. It hasn't taught me that there's some other parts of the fuel line somewhere else.

Q. Okay. Can you do that thinking and let me know whether you think this segment of the hose is part of the gaseous fuel line?

MR. FINCH: Objection, form, scope.

THE WITNESS: I mean, that might

take a while. And so what -- I'm just -- give you a heads-up. I'd probably want to go to the claim language and see how the claim language is describing this.

BY MR. STEMLER:

Q. Okay.

A. And then I'd probably have to go back and read through some relevant sections for the specification.

Q. Sure.

A. So I can do all that, but it's probably going to take a while, and I feel a little uncomfortable doing that under the gun.

Q. Understood. We're going to be asking a lot of questions today about the '398 patent, so it may -- if you haven't already reviewed it in preparation for today's deposition, it may make sense to go ahead and take that time to do it now.

A. Well, I reviewed this. I haven't looked at it for a long time. But it's not a question of reviewing it, it's a question of reviewing it with the specific question, you know, in mind.

Q. Okay.

A. And to do that -- that analysis takes some amount of hours to go through. And basically the kind of question that you're asking me is hard to rule out that somewhere in, you know, column 21, line 6, it doesn't say: By the way, in Figure 1, that little piece of line was part of the gaseous fuel line. So it's almost like an exhaustive search, the kind of question that you're asking me --

Q. Sure.

A. -- [unintelligible] rule out or rule in some portion of it that's not immediately obvious from Figure 1 or the accompanying texts of Figure 1.

Q. I see. Okay. How about if the '398 patent were to not discuss that section of line between the two regulators that are identified as 44 and 42?

A. Okay.

MR. FINCH: Objection, form, scope.

THE WITNESS: That's --

BY MR. STEMLER:

Q. If that were the case, would there be any way for you to know whether that is part of

the gaseous fuel line?

MR. FINCH: Objection, form, scope.

THE WITNESS: I would say if I read through this, and there was no further discussion about that line except for what we see in Figure 1, I would say it's not part of the gaseous fuel line because it's identified 36 and labeled 36 as the gaseous fuel line, but that's just one particular embodiment in Figure 1.

BY MR. STEMLER:

Q. I thought you said 36 was identified as the LPG hose?

A. Right. So the LPG hose is the gaseous fuel line --

Q. Okay.

A. -- in this embodiment. And since 36 doesn't appear to be pointed at another short piece of hose, the patent's not teaching me -- at least what we're looking at in the figure and the description of 36 that I read, it's not teaching me that that small piece is part of the fuel line as well, the gaseous fuel line.

Q. How do you know that the LPG hose is the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: Oh, because it's going from the gaseous fuel source over to the generator portion. And that's what a gaseous fuel line does, is it connects the fuel -- the gaseous fuel source to the -- to the generator.

BY MR. STEMLER:

Q. And that's how you tell if something is a gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: That's how I -- yeah, that's how I tell -- that's how I determine it in relation to Figure 1.

BY MR. STEMLER:

Q. How do you determine if it's a gaseous fuel line in relation to the claim language of claim 1?

MR. FINCH: Objection, form.

THE WITNESS: Well, I'd go back to the claim language and read it, and that's what I'm going to do right now to answer your question.

BY MR. STEMLER:

Q. Okay.

A. So the limitation that you pointed me to

early in this line of questioning is particularly relevant. Just, again, to read it so it's fresh in our mind, "A gaseous fuel valve positioned along a gaseous fuel line coupling the gaseous fuel source to the carburetor..." So that's teaching us what the claimed gaseous fuel line is. It's something that couples the gaseous fuel source to the carburetor.

Q. Okay. Does that hose 36 extend all the way to the carburetor?

A. From this picture, it doesn't appear that. There could be some internal components there. But, again, just to remind you what the claim language says, it says it's the gaseous fuel line coupling the gaseous fuel source to the carburetor. It doesn't actually say it has to extend all the way to the carburetor.

Q. Okay. What components does 36 extend between?

MR. FINCH: Objection, form.

THE WITNESS: Well, it extends between that coupler 43. And then sort of the side of the generator where the control inputs are, like, there's -- that's basically side of

the generator where people get to make selections and turn it on and off and plug in the power and stuff like that. So it's clearly extending from 43, that coupler, to that control interface on the side of the generator.

BY MR. STEMLER:

Q. Okay. That control interface, though, that's not a carburetor, right?

MR. FINCH: Objection, form.

THE WITNESS: No, it's not. The carburetor would be inside there somewhere.

BY MR. STEMLER:

Q. Okay. So that -- is that -- component 43, is that the gaseous fuel source?

MR. FINCH: Objection, form.

THE WITNESS: No. I think maybe it's 22. I'd have to look at the terminology of the patent that's used in -- but it's basically the -- you know, the tank is the source of that gaseous fuel.

BY MR. STEMLER:

Q. I see. So that line 36 doesn't necessarily connect directly to that tank 30 or the carburetor, as shown here in Figure 1, right?

MR. FINCH: Objection, form.

THE WITNESS: Right. The line is clearly connected to that coupler 43, which is part of 22, which is the -- you know, the fuel delivery system, if you will. And then the line 36 extends over to that control interface of the generator that we see in Figure 1. Whether or not it extends through that interface all the way to the carburetor, we don't know looking at this figure.

BY MR. STEMLER:

Q. Okay. So is there any reason why you're excluding that segment of hose between the two regulators as part of the gaseous fuel line?

MR. FINCH: Objection, misstates prior testimony.

THE WITNESS: Yeah, I'm not necessarily -- I mean, I'm not necessarily excluding it. You kind of asked me a question: If it didn't say anything about it, what would I feel? And I would think that 36 -- the labeled part that's clearly 36 would be the gaseous fuel line. But whether or not that other piece is the gaseous fuel line, I didn't have enough information to go forward with, but

you -- you said to assume that there's nothing else said about it. Now, if I read it, and I got a fuller description or understanding of what that little piece was, you know, maybe I would then think it's part of the gaseous fuel line. And that -- that material that's around 43 and 44, you know, that might be something that's just sort of attached to the fuel line, but we don't have that kind of information. I'm just looking at Figure 1, and it's clearly teaching that 36 is the gaseous fuel line.

BY MR. STEMLER:

Q. What is your understanding of what that little segment in between the two regulators does?

A. Oh, the hose segment between the primary and the secondary. That's just a way of passing the gaseous fuel from the primary to the secondary pressure regulators. So that hose doesn't really have to be there. You could just directly attach them and have a two-stage regulator all in one piece, all in one assembly, if you will.

Q. And you're saying the only way for you to determine whether that is a gaseous fuel

line would be for the '398 patent to specifically state that it's part of the gaseous fuel line?

MR. FINCH: Objection, form, misstates prior testimony.

THE WITNESS: I don't think it has to specifically state it. I'd want to read through the patent to understand how it's describing the operation of all those. But I do know that there's a lot of dual-stage pressure regulators that don't have such a hose, they just connect directly. So viewing this figure and thinking in my mind that hose getting smaller and smaller and smaller until they're touching, I wouldn't -- in that configuration where that hose is really, really short, I wouldn't think it was part of the gaseous fuel line, I would just think it's a connector between the primary and secondary pressure regulators.

BY MR. STEMLER:

Q. So whether or not it would be part of the gaseous fuel line would be dependent on the length of that hose?

MR. FINCH: Objection, form.

THE WITNESS: Not really the length of the hose, but again, the operation of that whole assembly. But I'm just saying that I can imagine that hose going all the way to a zero-length hose, and then I don't think it's part of the fuel line there. I think it's just now a connector of a dual-stage pressure regulator.

BY MR. STEMLER:

Q. But in its current form where it's got some length to it, there's no way for you to determine whether that's part of the gaseous fuel line without this extensive review of the '398 patent specification?

MR. FINCH: Objection, form.

THE WITNESS: Yeah, that's correct. I mean, I can envision somewhere in this many, many columned patent that it could say that, for example, 44 is optional and we don't really have to have it, and here it's just added into the middle of the fuel line. If I saw something like that, then I would -- then I would think: Oh, the patent is teaching that that little segment is part of the fuel line. But in the absence of that teaching, I would

think it's not part of it.
BY MR. STEMLER:
Q. Okay. In the absence of a teaching saying that it's optional, you're saying you would think that that segment is not part of the gaseous fuel line?
MR. FINCH: Objection, form, misstates prior testimony.
THE WITNESS: Yeah, that's correct. Without some sort of affirmative teaching that that small segment is part of the fuel line, I think it's not part of the fuel line, I think it's part of a dual-stage pressure regulator.
BY MR. STEMLER:
Q. Okay. Is the fuel source then the output of the dual-stage pressure regulator?
MR. FINCH: Objection, form.
THE WITNESS: Oh, I think the fuel source is -- is where the fuel is -- is stored, and that would be [unintelligible]. You can see from the [unintelligible] there they've labeled the [unintelligible] there the fuel source.
BY MR. STEMLER:
Q. How about that little section of pipe

labeled right below the arrow, 39?

Do you see that?

MR. FINCH: Objection, form.

THE WITNESS: I see that, yes. I don't know what 39 is without looking at the number. Do you --

BY MR. STEMLER:

Q. Okay.

A. -- know what [unintelligible]?

Q. You're welcome to --

A. Okay. I'll take a look, see what that is. The patent teaches that 39 is not that piece alone. It's saying that 39 is the fuel regulator system, which includes the -- what we've been talking about, the secondary pressure regulator and the primary pressure regulator. So that's not actually pointing to the hose, it's pointing to the assembly of pressure regulators.

Q. I see. I guess I was just using that arrow as more of a reference to refer to the component that I wanted to ask you about. That pipe, I guess, may be unlabeled, but do you see the pipe that I'm mentioning that's below the end of the arrow extending from the number 39?

A. Yeah, it doesn't really look like so much a pipe to me. There's no bend to it. Like, the other pipes in here show bending. It looks like maybe it's a handle or something.
Q. Do you see my screen still?
A. Yes.
Q. Are you stating that this straight component with the two elbow components at the two ends of it does not appear to be a pipe to you?
MR. FINCH: Objection, form.
THE WITNESS: Yeah, I don't know that it's a pipe. It looks kind of like a handle because I don't know why the gaseous fuel would go over there. I think the gaseous fuel goes through the two pressure regulators and out to the generator. I'm not understanding why it would flow over there.
BY MR. STEMLER:
Q. How do you think the gaseous fuel enters pressure regulator 42?
A. Well, it's got to come from the -- well, what I'll call the service valve, and then go into one side of 42. And we can't -- we can see the output of 42. We really can't see the

input. So it's somewhere back in there that the gaseous fuel is flowing into the primary pressure regulator 42, but I'm not seeing from this point of view the -- exactly how it gets in there.

Q. In your experience, where would the input for such a pressure regulator be located?

A. Sort of on the opposite side of where the output is where generally the gas flows through a structure and has its pressure reduced. So we can see the output of it pretty clearly there. But where it's coming in, I can't see that from this perspective, but it would somewhere be on the opposite side or the backside of 42.

Q. Do you see any components that appear to be attached to the opposite side of 42 from the outlet?

MR. FINCH: Objection, form.

THE WITNESS: Well, that whole thing is mounted on -- see, in this figure we can't tell. I know how these things work. So reading in that understanding, somewhere on the backside is the input to it, but there are a couple of different ways that these are laid

out. So it's somewhere on the backside or the opposite side of where we can see the output hose.

BY MR. STEMLER:

Q. Yeah. And that thing that I'm referring to as a pipe and that you're referring to as a handle --

A. No, I'm not -- just -- I don't want to talk over you, but I'm not referring to it as a handle. Since it's not numbered, I don't know exactly what it is without some further study.

Q. Okay. Would you like to take the time to do that further study?

A. I mean, I think what will help is if we identify what 40 and 41 are.

Q. Okay.

A. Might work back from that, and then we can have -- maybe have a better understanding.

Q. Sure.

A. (Views document.) Okay. I think I can probably take a run at answering your question now if you restate it.

MR. STEMLER: Dana, can you please repeat the question back?

THE COURT REPORTER: "Do you see any

components that appear to be attached to the opposite side of 42 from the outlet?"

MR. FINCH: Objection, form.

THE WITNESS: I see a couple of things that are sort of opposite to that, and they're unlabeled, but generally they seem to -- there seems to be a series of components that go from that outlet over towards that linear segment that is -- it's not 39. It's unlabeled, but I think that you're asking about. So there's several components between that outlet and that segment that we've been discussing that looks like a handle or a pipe.

BY MR. STEMLER:

Q. Okay. And do you think that -- that segment that we've been discussing that you're saying may be a handle, you don't think that that's attached to the opposite side of the outlet on regulator 42?

A. No. It appears to be connected to some other device that's connected to 42. 42 -- the label of 42 appears to be generally a round-shaped structure or a disk, and then there's another structure to the upper right of that, which is not round but curved. And then

that pipe is -- that pipe is kind of connected to that portion through an L-shaped structure.

Q. Does the '398 patent disclose any structures that connect the gaseous fuel source to the primary fuel regulator 42?

MR. FINCH: Objection, form.

THE WITNESS: Yes. If we look at column 4, going down, starting at line 41, there's a description of this part of Figure 1. And I'm not going to read it all, but that's what I was reviewing. And that figure explains that there is a service valve 40. And that's the -- essentially the valve that allows the compressed LPG gas to flow out, and it goes through this inlet 41, and then through that pipe that we've been discussing and makes some kind of U-turn, and then heads back towards the primary pressure regulator fitting.

BY MR. STEMLER:

Q. Okay. Is -- that pipe that we've just been discussing, is that part of the gaseous fuel line?

A. I don't think so. I think it's part of -- it's described -- the way that I just -- that paragraph that I just read, it describes

as apparently linked or a part of the fuel regulator system 39. So that 39 is not pointing to anything specific because 39 contains all the components, I think, from -- that go from 40 all the way through 43. That would be the fuel regulator system.

Q. Okay. So the segment of pipe between the gaseous fuel source and the regulator system -- or I'm sorry. Strike that.

The segment of pipe between the service valve 40 and the primary fuel regulator 42 would then not be part of the gaseous fuel line?

A. Correct. It's part of the fuel -- it appears to be part of the fuel regulator system 39.

Q. Yep. How about if we look at the regulators 40 -- well, maybe just referring to that regulator system 39, is that part of the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: I think in this embodiment, no. As we read -- as we saw earlier, the patent teaches that the fuel line -- the LPG or the gaseous fuel line

basically ends at 43, the way it's described in the patent.
BY MR. STEMLER:
Q. Ends at 43. Okay. So none of the regulators 42 or 44 would be part of the gaseous fuel line?
MR. FINCH: Objection, form.
THE WITNESS: Again, I think in this embodiment and the way that it's described, no, not in this particular embodiment.
BY MR. STEMLER:
Q. Does the '398 patent say anywhere that the LPG hose 36 is part of the gaseous fuel line?
A. No, it doesn't use that words, but it is the gaseous fuel line because it's the line that couples the gaseous fuel source to the carburetor.
Q. Even though it doesn't extend all the way to the gaseous fuel source or the carburetor?
MR. FINCH: Objection, form.
THE WITNESS: That's correct. There's no requirement it has to go all the way to it. It has to couple it.

BY MR. STEMLER:
Q. And that segment of the hose between regulators 44 and 42 does not perform any part of that coupling?
MR. FINCH: Objection, form.
THE WITNESS: I think that is part of the structure that couples it. I mean, if it wasn't there, it wouldn't be coupled. But as we discussed, those are sort of internal connect -- internal connecting portions of 39, the fuel regulator system.
BY MR. STEMLER:
Q. If something's part of the regulator system, are you saying it can't be part of the gaseous fuel line?
MR. FINCH: Objection, form, misstates prior testimony.
THE WITNESS: I think for this particular embodiment and the description that goes along with it, it can't because the description that we discussed, it indicates that the fuel line ends at 43.
BY MR. STEMLER:
Q. Where does it indicate that the fuel line ends at 43?

A. Well, in column 4, starting on line 49, when discussing Figure 1, the patent states, "An outlet 43 coupled to LPG supply hose 36." That's teaching that those are different components. And so that's what I've been referring back to when I say that LPG supply hose 36 ends at 43, it's from that teaching there.

Q. Does the gaseous fuel line have to be a hose?

A. I don't think so. I don't see that requirement. I don't remember that requirement.

Q. Can the gaseous fuel line ever include couplings?

A. I think it can, yes.

Q. How do you know whether those couplings would be included as part of the gaseous fuel line or not?

A. Well, I think the test would be if the gaseous fuel line continued on beyond that connector. For example, if we go to -- go back to column 4, but we go up to line 32, at that point the patent teaches, "LPG supply hose 36 is coupled to a second fuel line within

generator 20." So I think in that case it's teaching that that fuel line that we see in Figure 1 goes up to that user interface, and then obviously there's a coupler there, but then it passes through and continues on to the carburetor through a second fuel line. And I think in that case we would know that second fuel line is also part of the gaseous fuel line.

Q. Can you turn to column 8, line 1 of the '398 patent for me?

A. Column 8, line 1, yes. I'm there.

Q. And can you read for me the first full sentence that appears there?

A. "Accordingly, first fuel line 66 may be a liquid fuel line, and second fuel line 70 may be a gaseous fuel line."

Q. And if I scroll down to Figure, sorry, 4A, do you see second fuel line 70 shown here?

A. Yes, I do.

Q. Are you aware of any similar description in the '398 patent that refers to the gaseous fuel hose 36 in Figure 1 as the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: I'm not sure I understood the question. Can you repeat that?
BY MR. STEMLER:
Q. Yeah.
MR. STEMLER: Dana, do you mind reading it back one time?
THE COURT REPORTER: "Are you aware of any similar description in the '398 patent that refers to the gaseous fuel hose 36 in Figure 1 as the gaseous fuel line?"
MR. FINCH: Objection, form.
THE WITNESS: Not off the top of my head, but the question is a little bit odd to me, to be honest. It's not using the terminologies that are here in the patent, so I'm a little confused by it.
BY MR. STEMLER:
Q. I'm sorry. I should have used the word "LPG supply hose 36."
A. Okay.
Q. And so I'll restate my question for you.
A. Okay.
Q. Are you aware of any similar description in the '398 patent that refers to the LPG supply hose 36 shown in Figure 1 as the gaseous

fuel line?

MR. FINCH: Objection, form.

THE WITNESS: Off the top of my head, I don't know that it uses those words, but the description of it throughout this disclosure is clearly teaching that it's a gaseous fuel line.

BY MR. STEMLER:

Q. And how exactly do you reach that conclusion?

A. Well, reading the specification, understanding how this technology is described. And, for example, going back to Figure 1, when you read all of the description of what's involved in Figure 1, you understand that that hose 36 is coupling the gaseous fuel source to the carburetor, and so therefore it's a gaseous fuel line.

Q. But not all components that couple the gaseous fuel source to the carburetor are part of the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: Yeah, I think that's correct.

BY MR. STEMLER:

Q. How do you tell then which of the components that couple gaseous fuel source to the carburetor are part of the gaseous fuel line and which of them are not?

MR. FINCH: Objection, form.

THE WITNESS: Well, essentially you would look for components that are lines or hoses and/or other conduits of the -- that allow the gaseous fuel to flow from the fuel source towards the carburetor.

BY MR. STEMLER:

Q. But not the hose between 44 and 42?

MR. FINCH: Objection, form.

THE WITNESS: Well, again, that's a very specific embodiment. And going through and reading how that's described, that's an internal component of that 39, which is that fuel regulator system.

BY MR. STEMLER:

Q. So if a hose or a conduit could be described as a different -- part of a different system but still connects between the gaseous fuel source and the carburetor, that would be excluded from being part of the gaseous fuel line?

MR. FINCH: Objection, form.
THE WITNESS: I didn't quite understand that question. I'm sorry.
MR. STEMLER: Dana, can you read that one back, please?
THE COURT REPORTER: "So if a hose or a conduit could be described as a different -- part of a different system but still connects between the gaseous fuel source and the carburetor, that would be excluded from being part of the gaseous fuel line?"
MR. FINCH: Objection, form.
THE WITNESS: Yes. I think it could be excluded. And this particular description that we've gone through is teaching that those are internal components of the fuel regulation system 39, and that's why in this case I think what we are clearly being taught is that 36 is the gaseous fuel line or at least part of it. And then what we read recently indicates there's another portion of that gaseous fuel line inside the generator that's not shown, but it's described in the text. So those parts that are described as the LPG line would be the gaseous fuel line.

BY MR. STEMLER:
Q. Okay. Are you familiar with threaded connections, Dr. Singhose?
A. Yes, I am.
Q. Do you think that the end of the gaseous -- I'm sorry. Strike that.
Do you think that the end of the LPG supply hose 36 could be connected to the outlet 43 via a threaded connection?
MR. FINCH: Objection, form.
THE WITNESS: I think it could be unless somewhere in the patent it says 43 cannot be a threaded connector. From what I -- what we've read today, it just says it's a coupler, so in that case I think it could be a threaded connector.
BY MR. STEMLER:
Q. Sure. And so I understand --
MR. FINCH: Taylor, we've been going for almost an hour and a half. So whenever you get to a minute, let's take a break.
MR. STEMLER: All right. I'll wrap up here soon.
BY MR. STEMLER:
Q. I understand that your position is that

fuel outlet 43 of the regulator would not be part of the gaseous fuel line because it is part of the regulator system. Would the metal fitting at the end of the LPG supply hose 36 that could thread into that connection be part of the gaseous fuel line?

MR. FINCH: Objection, form, misstates prior testimony.

THE WITNESS: I'm not exactly sure what you're referring to. Are you referring to the 43 side or the other side of 36 that goes into the user interface?

BY MR. STEMLER:

Q. Nope. I'm referring to the side that attaches to 43.

MR. FINCH: Objection, form.

THE WITNESS: Okay. Yeah, I don't exactly know what's in there. As we just discussed, I don't know what kind of a connector is there, so I'm not sure there's a metal part.

BY MR. STEMLER:

Q. Okay.

A. You basically said there's a metal part. I'm not sure what that is.

Q. Say, for example, there's a female-style connection of the threaded connection that's attached to the hose 36. Can you understand what I'm talking about there?
A. I think so, yeah.
MR. FINCH: Objection, form.
THE WITNESS: There's some kind of connector on the end.
BY MR. STEMLER:
Q. Sure. Would the connector on the end of 36 be part of the gaseous fuel line?
A. I mean, I think in this particular embodiment -- again, I'm going to go with what the patent says, and the patent is saying that that coupler 43 is not part of the hose, so I'm not exactly sure what you're describing. But to the extent that it's part of the coupler, then the patent is teaching us that in this embodiment the coupler is not part of the fuel line.
Q. Okay. What if it's part of the hose?
A. Yeah, I think if you --
MR. FINCH: Objection, form.
THE WITNESS: -- if you just had a relatively low-pressure system, and you could

push the hose onto, like, a spigot outlet that kind of has some ridges that connect it, and then maybe you put a clamp over it, I would think that all of that hose is part of the line, but the connector is not.

BY MR. STEMLER:

Q. Okay.

MR. STEMLER: We can take a quick break.

THE VIDEOGRAPHER: We are going off the record.

Time now is 10:42.

(Off the record 10:42 to 10:54.)

THE VIDEOGRAPHER: We are back on the record. This is the start of Media Number 2.

The time is 10:54.

BY MR. STEMLER:

Q. Dr. Singhose, I'm sharing Figure 1 of the '398 patent again. Do you see this?

A. Yes, I do.

Q. Before we broke, we were talking about the connection between hose 36 and the regulator system outlet labeled as 43. Do you recall that?

A. Yes.
Q. We discussed a couple of different connection mechanisms, one of which that you mentioned was if the hose extended over a protrusion and was connected via some type of wrap around the hose. Do you remember that?
MR. FINCH: Objection, form, misstates prior testimony.
THE WITNESS: Yes, I do remember something like that.
BY MR. STEMLER:
Q. Now, I'm not aware of any instance in the '398 patent where any particular form of connection is specified between the hose 36 and the outlet 43. Are you?
MR. FINCH: Objection, form.
THE WITNESS: Oh, I see -- I can understand the question. You're saying is there somewhere in there where the 43 is described as being a particular kind of coupling? Is that your question?
BY MR. STEMLER:
Q. Correct.
A. Okay. I mean, off the top of my head, I don't know that. I'd have to search.

Q. Okay. Are you able to imagine a scenario where there might be a threaded coupler that connects line or hose 36 to outlet 43?

MR. FINCH: Objection, form.

THE WITNESS: Yes. And we were -- I'm a little confused by the question. I thought we were talking about that before, that 43 could be a threaded connector.

BY MR. STEMLER:

Q. Yeah. We were -- we were discussing that.

A. So yeah, it could be a threaded connector.

Q. Okay. Can you imagine a scenario for me in which the hose includes a male-style portion of that threaded connection?

MR. FINCH: Objection, form.

THE WITNESS: Yes. The end of 36 could have a male-style connector. I mean, it would be essentially like a garden hose. Is that what you're envisioning?

BY MR. STEMLER:

Q. Exactly.

A. [Unintelligible] hose?

Q. Yeah, similar to that. And in that case, the outlet 43 may be a female-style portion of that threaded connector?

MR. FINCH: Objection, form.

THE WITNESS: Yeah. So I'm trying to understand. So you're making an interpretation, I think, that I wasn't about 43, that 43 isn't both parts of a connector. The way the patent reads is that 43 is an outlet coupled to the LPG supply hose. We read that several times. So I'm not viewing 43 as being sort of one half of a connector. I'm viewing it as the entire coupler.

BY MR. STEMLER:

Q. In which case that would include the male-style portion of the hose and the female-style portion?

A. Yes, it could.

MR. FINCH: Objection, form.

THE WITNESS: Yes.

BY MR. STEMLER:

Q. And so you're saying then that the male-style portion of the hose -- I'm sorry. Strike that.

You're saying then that the male-style

portion of the threaded connector would not be part of the gaseous fuel line?

MR. FINCH: Objection, form, misstates prior testimony.

THE WITNESS: I'm not ruling it out. I mean, I just don't think the patent teaches that level of specificity.

BY MR. STEMLER:

Q. All right. I'd like to pull up another exhibit. I've got -- I'm introducing your declaration now, which is Exhibit 2133.

THE COURT REPORTER: A new exhibit then?

MR. STEMLER: This will be a new exhibit. That's correct.

(Exhibit Number 2133 marked for identification.)

BY MR. STEMLER:

Q. All right. This exhibit should now be displayed on the screen. Do you see this, Dr. Singhose?

A. Yes, I do.

Q. All right. And I would like to turn to page 56 of this exhibit.

A. Okay.

Q. All right. Would you please read paragraphs 115 and 116 to yourself for me, and let me know when you've finished reading those paragraphs?

A. Okay. (Views document.) Okay. I've read paragraphs 115 and 116.

Q. Okay. So it's my understanding, after reading these two paragraphs, that you're basing your understanding on whether something is a gaseous fuel line as dependent on whether or not a fuel within that line is in the gaseous state, is that generally correct?

MR. FINCH: Objection, form, misstates prior testimony.

THE WITNESS: Well, I think it needs to do exactly what the claim limitation says, which it has to couple the gaseous fuel source to the carburetor. That's what determines whether or not it's the gaseous fuel line. The gaseous fuel line could, for example, be empty of any gas -- there could be no gaseous fuel in there if you run out of gas.

BY MR. STEMLER:

Q. Sure. Would that be a gaseous fuel line then?

A. Yes, because it's coupling the fuel source, which happens to be, I guess, empty in that case, to the carburetor.
Q. Sure. What if there was a liquid fuel in that line, but the line was still coupling the gaseous fuel source to the carburetor, would that be a gaseous fuel line?
MR. FINCH: Objection, form.
THE WITNESS: Yes. There could be -- I mean, somebody could hook this thing up incorrectly and put some water or some kind of liquid in there. That doesn't change that it's the gaseous fuel line. It's just being used incorrectly.
BY MR. STEMLER:
Q. And so if I filled a gaseous fuel line with liquid fuel, but it was still coupling a gaseous fuel source to the carburetor, that would still be a gaseous fuel line?
MR. FINCH: Objection, form.
THE WITNESS: Yeah, I think so. I don't understand how you're doing that, because you'd have to, like, disconnect from the gaseous fuel source. And I think if you're in that situation, I don't quite understand what's

going on. Seems like you're breaking it, and then asking me questions about the broken system. It's hard to do that.

BY MR. STEMLER:

Q. Yeah, or just uncoupling a connection and filling it and recoupling it?

MR. FINCH: Objection, form.

THE WITNESS: I think in a case like that where somebody is purposely misusing a generator, you're not changing the fact that it's the gaseous fuel line, you're just using it in a way you're not supposed to be using it. I think misuse of something doesn't change what the component is, it's just being misused.

BY MR. STEMLER:

Q. Sure. Even though the state of the fuel within that particular portion of the line would not be gaseous during that period of misuse?

MR. FINCH: Objection, form.

THE WITNESS: Yeah, that's right. I don't think it's even functioning properly under that -- I don't see how it could function properly. If you put gasoline, for example, in the gaseous fuel line, this -- I don't think

that's even going to work.
BY MR. STEMLER:
Q. Okay. I'd like to turn back to the '398 patent. We read claim 1 -- a particular element of claim 1 earlier on in the deposition. I asked you to read this portion, "A gaseous fuel valve positioned along a gaseous fuel line coupling the gaseous fuel source to the carburetor..." Do you recall reading that, Dr. Singhose?
A. Yes, I do.
Q. Can you identify for me where in the '398 patent a gaseous fuel line positioned along -- strike that.
Can you identify for me where in the '398 patent a gaseous fuel valve positioned along a gaseous fuel line is disclosed?
MR. FINCH: Objection, form.
THE WITNESS: Let me see. Without rereading the whole thing, I'd be tempted to go back to that Figure 4 that we were talking about before.
BY MR. STEMLER:
Q. Yep. I can do that.
A. There's likely to be disclosures there,

so it's probably one of those numbers. You talked about it before, how 70 would really be -- we talked about before 70 being the gaseous fuel line, was that correct?

Q. Right.

A. So I think if I -- if we were to pull up and look at the description that goes along with that, I think what we'll find is that 59 or 50A, maybe it's 50A and B, let me see if I can find those, those described here. So 50A and 50B are described as, I believe, parts of a quick disconnect hose coupling. And 70 is clearly part of the gaseous fuel line. But then also you can see in Figure 4A there is a line running from 50B down to the propane tank that's also part of the gaseous fuel line. So I think one looking at this and realizing that the gaseous fuel line is going from that propane tank up to the carburetor, one disclosure of a valve is that quick disconnect connector 50A and 50B, there's a valve in there.

Q. Is -- that line between 50B and propane tank 68, is that always part of the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: I don't think it always has to be. But if we were to combine the teachings of Figure 1 and Figure 4A, then that segment that's unlabeled in Figure 4A would be 36 that we were talking about before from the propane tank up to the user interface.

BY MR. STEMLER:

Q. Sure.

A. So I think -- you know. And then we also read earlier the part of the patent that says that 36 is one part of the line, and there's another internal line which goes up to the carburetor, and so that would be 70. So I think taking Figures 1, 4A and that textual description we had before is a teaching of a gaseous fuel line that has a gaseous fuel valve positioned along it.

Q. Okay. Is -- the component 59, is that part of the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: I think I can answer your question if I just find where 59 is described. Give me a second to do that. Well, if we go to column 8 of the patent and go to

line 17, the patent describes, "Mechanical fuel valve 54 to block and unblock fuel inlet 59 of second fuel line 70." I think that's teaching us that 59 is part of the second fuel line.

BY MR. STEMLER:

Q. Okay. And it's -- you said it's the inlet of the second fuel line, right?

A. Yes.

Q. And the second fuel line is the gaseous fuel line?

A. Yeah. The gaseous fuel line 70, the second fuel line, yes.

Q. Is it your understanding then that component 50A would also be part of the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: Well, 50A is the -- what we talked about before, it's the gaseous fuel valve positioned along the gaseous fuel line.

BY MR. STEMLER:

Q. Is it part of the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: I don't think it necessarily has to be part of the line. It

just has to be positioned along it.
BY MR. STEMLER:
Q. Is it part of the fuel line in this figure?
MR. FINCH: Objection, form.
THE WITNESS: In Figure 4A?
BY MR. STEMLER:
Q. Yeah.
A. I'm not sure I can make that determination just looking at the figure. Again, probably want to read how it's described, but it's clearly a valve along the line. And there's the first part of the line and the second part of the line, it's positioned along it.
Q. How come you can't tell if it's part of the gaseous fuel line here?
MR. FINCH: Objection, form, misstates prior testimony.
THE WITNESS: Well, I'd want to read about how it's described in the patent is all I'm saying, if it says that 50A and 50B are not part of the fuel line and simply a quick connect connector. But it may also say that those are part of the fuel line, it's

positioned along it. I'm not sure that we have a clear teaching one way or the other, but it's positioned along it. Whether or not it's part of it, I'd probably have to do more research.

BY MR. STEMLER:

Q. How do you know if it's positioned along the gaseous fuel line, but you can't tell if it's part of the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: Well, I've read the description of how this works, and those quick connectors go together. So at that point the fuel line is running from the propane tank up to the carburetor, and that valve is positioned along the line. That is, there's a part of the line before it, and there's a part of the line after it. That's what it means to be positioned along it.

BY MR. STEMLER:

Q. When the connector is not attached -- strike that.

When the two sides of the connector are not attached, so -- as shown in Figure 4A, is 50B part of the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: Again, I think it could be. I didn't study the patent for this particular sort of subtle teaching whether or not how much of the ends of the fuel line are part of the fuel line or not, those connector ends.

BY MR. STEMLER:

Q. Can you review the patent and let me know now?

A. Okay. Just --

MR. FINCH: Objection, form.

THE WITNESS: Let me understand the question correctly. You're saying when it's not in the connected state, is it part of the fuel line or not?

BY MR. STEMLER:

Q. Yeah. When it's not in the connected state, would 50B be part of the gaseous fuel line?

A. Okay.

MR. FINCH: Objection, form, scope.

THE WITNESS: (Views document.) Okay. I think I've reviewed enough of the patent to give an answer to your question, if I could just have the question one more time.

BY MR. STEMLER:

Q. Sounds good.

MR. STEMLER: Dana, could you please read it back?

THE COURT REPORTER: "When it's not in the connected state, would 50B be part of the gaseous fuel line?"

MR. FINCH: Objection, form.

THE WITNESS: I think to answer that question it's instructive to look at column 7 of the patent. Starting on looks to be about line 18, the patent teaches, "Hose coupling 50 has a second end 50B coupled to the outlet of LPG supply hose 36." So we know that 36 is part of the gaseous fuel line. So that teaching indicates that the coupler's not part of the hose itself.

BY MR. STEMLER:

Q. How about the section that you're -- I guess we're looking at it here on Figure 4A that extends between 50B and 60A. I know you mentioned that that's analogous to the hose 36 shown in Figure 1. Is that part of the gaseous fuel line when in the disconnected state shown in Figure 4A?

A. Yes. In fact, that's what --

MR. FINCH: Objection, form, misstates prior testimony.

THE WITNESS: Yes, that's what the passage that I just read speaks to. It says that that second end 50B is coupled to the outlet of LPG supply hose 36. So even though 36 is not labeled there in 4A, that text is teaching us that that is 36.

BY MR. STEMLER:

Q. Okay. And that's part of the gaseous fuel line --

A. Yes.

Q. -- when in the disconnected state?

A. Yes.

MR. FINCH: Objection, form.

BY MR. STEMLER:

Q. How about that flange 58 that's shown between 50A and 50B, is that part of the gaseous fuel line?

MR. FINCH: Objection, form.

THE WITNESS: No.

BY MR. STEMLER:

Q. Okay. If I were to place a vaporizer along the length of line 70 and connect an LPG

tank where 68 is shown and flow liquid LPG from the tank through 50B and 50A into the vaporizer, would you still consider 50A and/or 50B to be a gaseous fuel valve?

MR. FINCH: Objection, form, scope, incomplete hypothetical.

THE WITNESS: So 50A and 50B are described as quick connectors, right, you're wanting me to keep them as quick connectors but have liquid flowing through them?

BY MR. STEMLER:

Q. Yeah.

A. Okay. As an initial matter, I think they have to be different kinds of connectors to do that, so I don't think they can be the same connectors. So I'll have to change that to something appropriate to connect liquid. So if you'll allow me to make that change, let me see if I can answer the question. I think in that case it's a liquid valve because you're stopping and starting the flow of liquid. So I wouldn't consider -- I don't -- to the extent I can understand this, I don't think that's a gaseous valve anymore. I think it's a liquid valve because it's controlling the flow of

liquid.
Q. How about if you didn't change the valves, if you kept valves 50A and 50B as they were?
A. I don't think it would work. I think the kind of quick connectors for a gas are different than the connectors you would use for pressurized liquid.
Q. Can you turn to column 11, line 15 of the '398 patent for me?
A. I'm at column 11 and line 15.
Q. All right. And I'll pull that up for Dana. Could you please read the first full sentence that appears there?
A. "Embodiments of the invention also contemplate mechanical fuel valve 54 configured to operate along second fuel line 70 to provide a flow path for second fuel source 30 to carburetor 62 when the valve is in second position 38B."
Q. And could you please show for me where in Figure 4A and 4B that is described?
MR. FINCH: Objection, form, lacks foundation.
THE WITNESS: Well, there's several

things in that sentence, but let's start at the first one. It says that there's a mechanical fuel valve 54. So 54 is labeled on the left side, kind of the left middle side of Figure 4A. And then the rest of the sentence says it's configured to operate along a second fuel line 70. So 70 is labeled there. And then it's -- we need to look at flow path for second fuel source 30. So second fuel source 30 is basically pointing to the propane tank at the bottom. And then carburetor 62 is -- well, it's labeled sort of in the very center of the device. So those -- that's where those components -- those physical components are shown in Figure 4A.

BY MR. STEMLER:

Q. Okay. So as shown here, the mechanical fuel valve 54 is operating along the second fuel line 70 to provide a flow path for second fuel source 30?

A. Yes.

Q. Okay.

MR. STEMLER: I'd like to take a quick break.

THE VIDEOGRAPHER: We are going off

the record.

Time now is 11:35.

(Off the record 11:35 to 12:27.)

THE VIDEOGRAPHER: We are back on the record. This is the start of Media Number 3.

The time is 12:27.

BY MR. STEMLER:

Q. Hello again, Dr. Singhose.

A. Good afternoon.

Q. During the course of our lunch break or any of our other breaks, did you speak with any of Champion's attorneys about this proceeding?

A. Well, yeah, generally about the proceeding, like, how much of the day is going to be spent doing this and when we're coming back online, that kind of thing.

Q. Did you discuss the substance of your testimony with them?

A. No.

Q. Okay. What does LPG stand for?

MR. FINCH: Objection, form.

THE WITNESS: Well, it can stand for different things, but liquid petroleum gas.

BY MR. STEMLER:

Q. And that's the term, "LPG," that's used in the '398 patent?

MR. FINCH: Objection, form.

THE WITNESS: Yeah, generally that's what it means.

BY MR. STEMLER:

Q. How would you describe the chemical composition of LPG?

A. I mean, I'm not a chemistry expert, but I do understand that it has hydrocarbons in it, basically complex molecules that are what we call flammable. If you bring them up to a certain temperature, they tend, like, to break apart violently and explode or cause a fire.

Q. How does that chemical composition differ from the chemical composition of gasoline?

A. Again, I'm not a chemistry expert, but it's related. I mean, it's not the same chemicals, but they're related chemicals in the sense that they -- when you vaporize them or put them in gaseous form and you put them near something hot, they tend to explode violently.

Q. Do you understand LPG's chemical composition to change depending on whether it's

in the gaseous form or in the liquid form?
MR. FINCH: Objection, form.
THE WITNESS: The chemical composition in terms of the -- of the baseline molecules, the hydrocarbons wouldn't change, but certainly they bind together through their molecular bonds differently. When you're in a liquid state, you have what's called intermediate bonding, and so the molecules tend not to -- they tend to move around relative to each other, but they won't, like, bust off and fly away like they will in a gas.
BY MR. STEMLER:
Q. Generally, how does the chemical composition of gaseous fuel differ from the chemical composition of liquid fuel?
MR. FINCH: Objection, form, foundation, scope.
THE WITNESS: I don't know -- I don't understand the use of "differ" in that question.
BY MR. STEMLER:
Q. How is it different?
MR. FINCH: Objection, form.
THE WITNESS: Again, I don't think

that the chemical composition changes when you take a gas and you either compress it or you freeze it, and it comes together and forms a liquid. I think the chemicals are the same, but they get close to each other and they tend to stick together rather than flying apart. So it's not a chemical composition, it's more of a chemical structure.

BY MR. STEMLER:

Q. I see. Let me ask that question in a slightly different way. How does the chemical composition of a fuel that is in a gaseous state at standard temperature and pressure differ from the chemical composition of a fuel that is in a liquid state at standard temperature and pressure?

MR. FINCH: Objection, form, foundation, asked and answered, scope.

THE WITNESS: Again, I'm not a chemistry expert, but I do understand it to the level that those two different kinds of fuels would have two different types of molecules, and the one that's liquid at room temperature would essentially tend to stick together better than one that is normally gaseous at room

temperature and pressure.
BY MR. STEMLER:
Q. Would that have to do with, like, the polarity of the bonds in the molecules?
MR. FINCH: Objection, form.
THE WITNESS: I don't understand it well enough at that level to answer the question. The way you're using "polarity" is a little confusing to me. And, again, I'm not a chemist, and I haven't prepared to answer chemical questions here today.
BY MR. STEMLER:
Q. Do you understand the word "liquified" in the term "LPG" to refer to the fuel -- to refer to the state of the fuel at any given time?
MR. FINCH: Objection, form.
THE WITNESS: Not at any given time. I understand liquified to refer to it being stored essentially under pressure or at a colder temperature so that it does liquefy.
BY MR. STEMLER:
Q. And the word "gas" in LPG, what is your understanding of that term?
A. Gas is -- well, like, I'm not even sure

I know the source of where that term came from. But gas in that sense probably refers to the fact that it's, like, gas, a gasoline, like, it can explode, it's hydrocarbons.

Q. Does it refer to the phase of the fuel?

MR. FINCH: Objection, form.

THE WITNESS: Yeah, that would be -- I don't think so. It would be kind of contradictory to say it's liquid and gas. Usually we take a material and we consider it to be liquid or gas, although there is some overlap there. But it also could refer to the fact that when we first get it out of the ground, it's in a gaseous state, and we compress it into a liquid state. That's also another reasonable interpretation of the use of LPG.

BY MR. STEMLER:

Q. And so the word "gas" could refer to the state of the fuel at standard temperature and pressure?

MR. FINCH: Objection, form.

THE WITNESS: It could. Again, I didn't study that issue, where the term came from. So those are both reasonable things.

They're gas in the sense that they explode. And they're also gas in that it's a gaseous substance when we first pull it out of the ground.

BY MR. STEMLER:

Q. I'll share my copy of the '398 patent again, Figure 1. Do you see this document?

A. Yes, I do.

Q. I think we referenced component labeled 30 here during our earlier discussion. Do you remember that?

A. Yes.

Q. What is component 30 referring to?

A. That's the second fuel source.

Q. I think the patent notes that in this embodiment the second fuel source can be an LPG tank.

MR. FINCH: Objection, form.

BY MR. STEMLER:

Q. Do you recall that?

A. Yes, I remember something like that. I'm not sure that's the exact words that you used, but maybe those were the exact words.

Q. Are you familiar with LPG tanks --

A. Yes.

Q. -- like the ones down here?
A. LPG --
Q. Sorry.
MR. FINCH: Objection, form.
THE WITNESS: I've got -- I have one at my house.
BY MR. STEMLER:
Q. Me too. But like the one shown here?
MR. FINCH: Objection, form.
THE WITNESS: Similar to that. I don't have the dolly. And then my pressure -- I don't have that whole pressure regulator attachment at the top of mine.
BY MR. STEMLER:
Q. I understand that these tanks are at least partially full of liquid state LPG, is that right?
A. Well, not when they run out. But yeah, when you get them, they are usually filled with a certain amount of pounds of LPG in the liquid state, yes.
Q. How high does that liquid -- how high is the liquid state usually filled up to?
MR. FINCH: Objection, form.
BY MR. STEMLER:

Q. Strike that. How high is the liquid state LPG usually filled up within the tank 30?
A. I assume you mean it's sitting on the ground, and it's settled to the bottom, and how high up until we get to the transition from liquid to gas. That I don't know. I mean, I've picked them up. When I first picked them up and they're pretty full, it seems like it's near the top. It sloshes around, so there's always some air in there. And then, of course, as it depletes over time, eventually it's all the way at the bottom, it's all gone. So it has a variable position.
Q. I'm going to pull up your declaration once again, Exhibit 2133. And I'm referring to paragraph 133. I have a section in your declaration highlighted. Could you please read that section for me?
A. Do you want me to read it into the record or just to myself?
Q. Yeah, into the record, please.
A. Okay. "For example, if an LPG tank was used improperly such that LPG vapor exited the LPG tank and was sent to the vaporizer, then the vaporizer could not function properly to

generate an appropriately-rich fluid flow into the carburetor."

Q. Thank you. And you say the same thing regarding Nakafushi's vaporizer at paragraph 219, right?

MR. FINCH: Objection, form.

THE WITNESS: I think I say about the same thing. You've highlighted a little bit more where I say, "In such a case, the engine would die."

BY MR. STEMLER:

Q. And these phrases, do you mean that the vaporizer would not function properly if it received any vapor, or that the vaporizer would not function properly if it received only vapor and no liquid?

MR. FINCH: Objection, form.

THE WITNESS: What I meant was that if the vaporizer doesn't get liquid into it, and you go through all the process that's in the vaporizer, what will come out the exit of the vaporizer is a very low energy gas. It won't have enough energy per unit volume to drive the engine, an engine will die. It's like running -- if you were operating it

properly and you ran out of gas, liquid gas, the end part of that process would be little bits of liquid gas and, you know, gaseous substance going into the vaporizer, what comes out of the other side is not enough to run the engine, the engine dies. Essentially I'm describing the process of running out of gas, and the vaporizer not being able to generate enough energy per unit volume to run the engine.

BY MR. STEMLER:

Q. Did you perform any calculations on what the required mass flow rate of LPG would be for the Kubota engine to continue running?

A. No. There would be no way to do that given the information in that manual; at least I don't think so.

Q. Did you perform any calculations on what the required mass flow rate of LPG would be for the Nakafushi engine to continue running?

A. No. I don't think we have the information we need to do that calculation.

Q. Did you perform any calculations regarding the vaporization rate that the LPG tank might be able to support for --

MR. FINCH: Objection, form.
BY MR. STEMLER:
Q. -- [unintelligible] fuel?
THE COURT REPORTER: Can I have a full question? Because the objection was in the middle of there, so I didn't hear you, Taylor.
BY MR. STEMLER:
Q. Did you perform any calculations regarding the vaporization rate that the tank would be able to support for the LPG fuel?
MR. FINCH: Objection, form.
THE WITNESS: I'm uncertain about which LPG tank that you're referring to, but I didn't do that calculation for any such tanks.
BY MR. STEMLER:
Q. Okay. So not for the Kubota tank?
MR. FINCH: Objection, form.
THE WITNESS: Yes, I did not perform a calculation like that for the Kubota tank.
BY MR. STEMLER:
Q. And not for the Nakafushi tank?
MR. FINCH: Objection, form.
THE WITNESS: No, I didn't perform that kind of calculation for the Nakafushi tank

either.
BY MR. STEMLER:
Q. Did you perform any calculations regarding the volume of liquid that might be available for vaporization in cases where the LPG tank of Kubota is providing gaseous state LPG?
MR. FINCH: Objection, form, scope.
THE WITNESS: I don't understand that question.
BY MR. STEMLER:
Q. You indicated above in paragraph 133 that if LPG vapor exited the LPG tank and was sent to the vaporizer, then the vaporizer could not function properly to generate an appropriately-rich fluid flow into the carburetor, is that right?
A. Yes. We read that sentence. That is correct.
Q. Did you provide -- strike that.
Did you perform any calculations regarding the volume of liquid that might be available for vaporization to provide the LPG vapor that might exit the LPG tank in this scenario?

MR. FINCH: Objection, form, scope.

THE WITNESS: I don't understand that question.

BY MR. STEMLER:

Q. In what cases would the LPG tank be used improperly to provide LPG vapor exiting the tank?

MR. FINCH: Objection, form.

THE WITNESS: Well, one case would be if you took the LPG tank and basically tipped it upside down, the exit would then be at the top. And at the top of the tank, as we sort of talked about before, when you get these cylinders, they're always at the top in the sense of the gravity direction, there's going to be vapor. So if you dump this upside down and you were drawing off LPG, you would be drawing off the vapor, not the liquid. And so that would not be sending out enough energy to the vaporizer. The vaporizer functions properly when it has liquid coming into it, that's how it's designed, not when it has gas coming into it. It's then not a vaporizer. It's just like passing through vapor to vapor. Vaporizer needs to have liquid coming in, and

then it goes through its internal structure, and it creates vapor for its output.

BY MR. STEMLER:

Q. Is it your opinion that the engine described in the Workshop Manual has to be functioning properly for it to anticipate the claims of the '398 patent?

MR. FINCH: Objection, form, scope.

THE WITNESS: Well, I think it needs to be described in such a detail so that a person of ordinary skill in the art knows that it could operate properly. That is, it has to be a -- you know, an enabling reference. That's my understanding of it.

BY MR. STEMLER:

Q. Did you consider whether -- if the Kubota engine described in the Workshop Manual were functioning but were not -- was not properly functioning, whether that engine would anticipate the '398 patent claims?

MR. FINCH: Objection, form, scope.

THE WITNESS: I don't think I considered that question. I considered Kubota to be describing an engine that functioned. So I don't think -- to the extent you're asking

analysis -- did I analyze it not functioning, I didn't do a nonfunctioning analysis.

BY MR. STEMLER:

Q. I'm asking about if it functioned but did not function properly.

MR. FINCH: Objection, form, scope.

THE WITNESS: Yeah, I did not do an investigation where I somehow broke Kubota in some way so it wasn't functioning properly, and then analyzed it under that state. I analyzed under the state described in the Workshop Manual.

BY MR. STEMLER:

Q. So you did not analyze a case where the Kubota engine was functioning but functioning improperly?

MR. FINCH: Objection, form, scope, asked and answered.

THE WITNESS: Correct. I did not analyze Kubota in a not-functioning or improperly-functioning state. I just analyzed it in the state that is described in the manual.

BY MR. STEMLER:

Q. You said that the engine would die --

that the Kubota engine would die in cases where the Kubota engine draws vapor LPG from the -- strike that.

You said that the Kubota engine would die in cases where LPG vaporizer was sent to -- strike that.

You said that the Kubota engine would die in cases where LPG vapor was sent to the vaporizer, correct?

A. Yes.

Q. Would the engine die immediately?

MR. FINCH: Objection, form.

THE WITNESS: No. It would -- it has some momentum in it, right? It's going around and around. So that momentum is going to keep the engine operating for a little bit, but it's not going to be able to explode enough on each engine compression cycle to keep the whole system going. So it's going to, you know, hiccup and burp and slow down and stop working like you do when you run out of gas in your car.

BY MR. STEMLER:

Q. How long would the engine continue to run between when LPG vapor is first sent to the

vaporizer and between when the engine fully dies?

MR. FINCH: Objection, form, incomplete hypothetical, scope.

THE WITNESS: That kind of information is not in the manual.

BY MR. STEMLER:

Q. Turning back to paragraph 219 of your declaration, discussion of the Nakafushi reference. Do you see this paragraph?

A. Yes, I do.

Q. You indicated here that if LPG vapor exited the LPG tank and was sent to the vaporizer, like the Kubota engine, the Nakafushi engine would die, is that correct?

MR. FINCH: Objection, form.

THE WITNESS: I guess that's generally what I wrote here.

BY MR. STEMLER:

Q. Did you consider an instance where if the Nakafushi engine was functioning but not functioning properly, whether the Nakafushi reference would anticipate the claims of the '398 patent?

MR. FINCH: Objection, scope,

incomplete hypothetical.

THE WITNESS: No, I did not consider somehow changing Nakafushi so that it doesn't operate properly. I didn't do that kind of analysis.

BY MR. STEMLER:

Q. How long between when the LPG vapor is first sent to the vaporizer in the Nakafushi system -- strike that.

How long would it take for the Nakafushi engine to die between when -- strike that.

How long would it take the Nakafushi engine to die after the LPG vapor is first sent to the vaporizer?

MR. FINCH: Objection, form, incomplete hypothetical.

THE WITNESS: The document just doesn't have that kind of information. It doesn't describe how it stops working when it runs out of gas, when it runs out of liquid LPG.

BY MR. STEMLER:

Q. Would you expect there to be a period of time between when LPG vapor is first sent to the vaporizer and the engine dies?

A. Yes. The engine --

MR. FINCH: Objection, form.

THE WITNESS: Yes. The engine cannot stop immediately. It's got momentum. It's rotating. So when it stops getting enough energy to run, it just goes through the process of running out of gas and, you know, comes to a stop eventually because there's just not -- it's not getting enough energy to keep turning, but nobody knows -- or this document doesn't give us any information to indicate how long that running-out-of-gas process would take.

BY MR. STEMLER:

Q. Would the engine continue to combust LPG as LPG vapor is provided to the vaporizer?

MR. FINCH: Objection, form, scope.

THE WITNESS: As long as the engine is turning, the spark plugs should be lighting up each time around. And so if there's any -- whatever little bit of residual LPG gas is in the cylinders there, it should -- it should burn at least some of it. Again, there may not be enough density to actually cause an explosion. So it may just end up coming out of the exhaust without being burned because there

wasn't enough of it to cause a reaction.
BY MR. STEMLER:
Q. Did you perform that analysis in writing this declaration?
MR. FINCH: Objection, form, scope.
THE WITNESS: No. I -- I and people of ordinary skill in the art understand the running-out-of-gas process well enough not to -- not to need to do an analysis for that.
BY MR. STEMLER:
Q. Could I generate an appropriately-rich fluid flow of LPG into the carburetor by increasing the diameter of the portion of the LPG line between the LPG tank and the vaporizer?
MR. FINCH: Objection, form, scope, incomplete hypothetical.
THE WITNESS: Yeah, the -- I don't understand the question. There seems to be something missing in the question. Under what conditions are we running this whole thing? I didn't -- I don't understand that.
BY MR. STEMLER:
Q. Sorry. I guess I'm --
A. [Unintelligible] enlarge the exit pipe,

but there's a lot of other stuff going on. I'm not sure exactly what we're talking about.

Q. I'm referring to the conditions described here in paragraph 219 where an LPG cylinder was used improperly such that LPG vapor exited the LPG tank and was sent to the vaporizer. If I were to increase the diameter of the fuel line between the vaporizer and the LPG tank, could I then have an appropriately-rich fluid flow of LPG into the carburetor?

MR. FINCH: Objection, form, scope.

THE WITNESS: I don't think so. That doesn't -- that doesn't have anything to do with it. It has to do with the fact that not enough energy per unit time is getting into the vaporizer. The problem is the input to the vaporizer, not the output.

BY MR. STEMLER:

Q. Yeah. And wouldn't the input to the vaporizer be the conduit between the LPG tank and the vaporizer?

MR. FINCH: Objection, form, scope.

THE WITNESS: I don't recognize that as a question. Something's missing there.

BY MR. STEMLER:
Q. If I increased the diameter of the conduit between the LPG tank and the vaporizer, when LPG vapor exited the LPG tank, could I then generate an appropriately-rich fluid flow into the carburetor?
A. No. Because --
MR. FINCH: Objection, form, scope, incomplete hypothetical.
THE WITNESS: No. Because the vaporizer is designed to match its input lines and its output lines. So that's how this works. That vaporizer is designed to take liquid in and to emit vapor. If it doesn't have liquid in, it's not going to be designed appropriately.
BY MR. STEMLER:
Q. Do you know what the typical pressure is in an LPG tank?
MR. FINCH: Objection, form, scope.
THE WITNESS: I'm not -- I don't think there is a typical one. I think that it can vary.
BY MR. STEMLER:
Q. How about, like, a gas grill LPG tank?

MR. FINCH: Objection, form, scope.
THE WITNESS: Again, the LPG tank for, like, a barbecue grill, that's going to come with a certain pressure, and I knew that value at some point in my life, I can look it up, but it actually decreases over time. As you get near the bottom, there's less and less pressure there. So I don't know the exact values. I mean, they're easy to look up and find out what they are.
BY MR. STEMLER:
Q. Okay. Could you look one of those values up?
A. Like, right now?
MR. FINCH: Objection, form, scope.
BY MR. STEMLER:
Q. Yep.
A. Okay. Let me open a web browser here.
Q. And if you could share your screen, Dr. Singhose, that would be great.
A. All I did was do a Google search. Okay. Let me share my screen. "Someone else is sharing. Send request."
Q. That's me. Sorry.
A. Okay. Okay. It seems to be sharing.

And the AI Overview provided by Google says that, "The internal pressure of a liquified petroleum gas (LPG/propane) tank typically ranges from 100 to 200 psi."

Q. Does that seem accurate to you?

MR. FINCH: Objection, form, scope.

THE WITNESS: Yes, that seems pretty reasonable to me.

BY MR. STEMLER:

Q. Okay. If I hooked up an LPG -- you can go ahead and stop sharing, Dr. Singhose.

A. Okay.

Q. Thank you.

A. Just a second here.

Q. If I were to hook up an LPG tank with a much lower pressure than that to the configuration described in the '398 patent, do you expect that would affect the ability of the regulator to deliver the correct amount of fuel?

MR. FINCH: Objection, form, scope, incomplete hypothetical.

THE WITNESS: No. It really depends on what the output pressure of the regulator is set to. So if we start at 200 psi, and the

regulator is set to exit 10 psi -- to emit 10 psi, then if we could drop it down to 150, one hundred fifty, you could go all the way down to, like, 20 or 15, and you would still have the 10 psi coming out that we need to run the generator.

BY MR. STEMLER:

Q. Would anything over 10 psi be appropriate?

MR. FINCH: Objection, form, scope, incomplete hypothetical.

THE WITNESS: Again, that 10 psi I'm just using as a number of what that pressure regulator might be set to. Basically, you would just need to be incrementally above that pressure in the tank.

BY MR. STEMLER:

Q. How much is "incrementally above"?

MR. FINCH: Objection, form.

THE WITNESS: I couldn't answer that question precisely. It depends on the regulator. But generally regulators are designed, you know, pretty well. And so if there's 10 psi coming out, you only need a little more of that to essentially open the

flow and let it come out at 10, but you'll need just a little bit more.

BY MR. STEMLER:

Q. Okay. How about if my tank was filled with a psi of much greater than a hundred or 200 psi, would you expect that to impact the ability of the regulator to deliver the correct amount of fuel?

MR. FINCH: Objection, form, scope, incomplete hypothetical.

THE WITNESS: Well, you used the term "much greater." A little bit greater would be totally fine. Much, much greater, essentially you have too much pressure and you're going to break your connectors. And the internal structure of the regulator can be damaged if you hooked it up to really, really high pressure.

Q. I'm going to share another document. So I am introducing Exhibit 1039, which is the Sugimoto publication. Do you happen to have a copy of that one with you, Dr. Singhose?

A. Yes, I do. I'll get it out in front of me just so it's easier to see.

Q. Okay.

A. I have a hard copy in front of me here.
Q. Okay. I'd like to scroll down to Figure 1. I guess, first, have you seen this document before, Dr. Singhose?
A. You know, I have seen it. I did not study it all that carefully or all the way through really. I looked at certain parts of it.
Q. Okay. Can you tell me what this component 62 is referring to in Figure 1?
A. (Views document.) Paragraph 78 of this Sugimoto application states, "The fuel pressure regulator 62." So given that, I think it's the fuel pressure regulator.
Q. Okay. Do you see component 61?
A. Yes, over on the right side.
Q. Can you tell me what that is?
A. Well, it seems to be two things. And in paragraph 72, this application states, "The fuel bottles 61." So there are fuel bottles.
Q. Can you tell me what the phase of the fuel inside those fuel bottles is?
A. Well, again, as we talked about before -- I mean, any time you have sort of bottles of fuel, you're going to have some

vapor. And this has some liquid in it. I think the liquid lines are sort of shown there schematically. So it's supposed to be -- I mean, what they're using, I think, is liquid gas, but there's certainly vapor at the top portions of these bottles.

Q. Can you tell whether they're drawing liquid or vapor from fuel bottles 61?

A. Schematically from that figure it looks like they're drawing liquid because essentially they have what appear to be, like, straw structures going to the bottom of it, but to verify that, I'd probably have to look up in the application how that function is actually described, but schematically it looks like they're essentially sucking liquid off the bottom of those tanks.

Q. Okay. Do you want to go ahead and review the application and confirm that?

A. Okay.

Q. And maybe just to save us a little bit of time I'll give you a hint to look to paragraph 78.

A. Okay. (Views document.) Okay. Good hint. If you could reask your question.

Q. Could you describe to me whether the fuel bottles 61 are providing liquid state fuel or gaseous state fuel?

MR. FINCH: Objection, form, scope.

THE WITNESS: Well, I'll -- I think I'll just read the important part of paragraph of 78, it says, "The fuel bottles 61 supplies the first fuel gas in liquid phase to the fuel pressure regulator 62." So that portion of this device is using liquid fuel.

BY MR. STEMLER:

Q. And the liquid fuel is going into the pressure regulator 62?

A. Yes, that's how it's described.

Q. Okay. What phase would you understand the fuel that is supplied by the fuel bottles 61 to be as it exits the fuel bottles 61?

MR. FINCH: Objection, form.

THE WITNESS: Well, as we just read, the patent application describes that fuel leaving in the liquid phase because it's showing up at the regulator in liquid phase, so it has to be leaving in liquid phase as well, has to be leaving the bottles in liquid phase to get to the regulator in liquid phase.

BY MR. STEMLER:
Q. So would it be your opinion that in that section of fuel line labeled A1, that fuel would be in liquid phase as well?
MR. FINCH: Objection, form, scope.
THE WITNESS: Yes. That A1 seems to be the only path going from those bottles 61 making its way to 62. So from what I understand looking at this figure and what we just read, that that would be liquid in that line.
BY MR. STEMLER:
Q. How about when it goes through component 12?
MR. FINCH: Objection, form.
THE WITNESS: Well, I know that 12 is the fuel system selector valve, but I need to read up about fuel selector valve 12 to see how it's described as operating. So if you have any helpful hints on where that is located, I will accept those hints at this time.
BY MR. STEMLER:
Q. 71, paragraph 71 includes details about the selector valve, as does paragraph 79.

A. (Views document.) Okay. So I read paragraph 71, and it wasn't that clear, so I read other descriptions of this selector valve 12. It's actually called sort of different names sometimes, selector valve 12 and also fuel cut-off valve 12. So why don't we try hearing the question again so I can answer it.

Q. Yeah. What would the state of the fuel that is drawn from bottles 61 be as it passes through component 12?

MR. FINCH: Objection, form, scope.

THE WITNESS: We don't know that. I know that it's teaching that when it gets to it, it's liquid, but it doesn't say exactly how the internal function of 12 is working. So I don't think it teaches exactly what's going on in 12. So the whole passing through part, I don't think we know that from what I was able to read about in this period of time.

BY MR. STEMLER:

Q. What would the state of the fuel supplied by bottles 61 be as it goes through line segment A2?

MR. FINCH: Objection, form, scope.

THE WITNESS: Again, that we don't

know for certain because we don't know what 12 did to it. Did it open in such a way to keep it in liquid form, or did it open with really small orifices and essentially spit out droplets that are vapor? I couldn't find that description in the amount of time I studied it here.

BY MR. STEMLER:

Q. Can you go back to paragraph 78?

A. Okay.

Q. And read that first sentence to yourself again.

A. (Views document.) Okay.

Q. Are you still unable to tell me what state the fuel supplied from the fuel bottles 61 would be as it passes through the line segment A2 shown here?

MR. FINCH: Objection, form, scope, misstates prior testimony.

THE WITNESS: Well, we know that that's telling us it supplies the first fuel in liquid phase to the fuel pressure regulator 62, but it's not totally clear whether that stays in liquid phase all the way to 62, but it's definitely supplying it, but it's coming out of

those tanks in liquid phase and certainly passing through that first segment that's labeled A1, but I don't know what happens in 12. Whether it converts it into a gaseous phase as it opens and closes, I don't know that.

Q. Could you envision a scenario where valve 12 did not convert the fuel from liquid to gaseous phase?

MR. FINCH: Objection, form, scope, incomplete hypothetical.

THE WITNESS: It's hard for me to envision that because there's gas coming in in the gaseous phase from tank 71. So it's coming into 12 is -- one line is liquid and one line is gaseous. And it only has one output line, which is A2 that I see here. And that A2 is going to a pressure regulator. And the pressure regulator is described as, you know, regulating the gas pressure. So that pressure regulator would have to be able to take both liquid in and gas in through at the same point, and then output a desired pressure of a gas. That seems like a very challenging mechanism to make. And, again, I didn't see that teaching

anything that was able to do that. That's why I just don't know what happens in 12, but it seems likely that 12 would be structured in such a way that it would emit small droplets or a vaporized form of the liquid going into it, but I haven't seen a teaching clearly of what's going on in 12.

BY MR. STEMLER:

Q. So you think 12 might be a vaporizer?

MR. FINCH: Objection, form, scope, misstates prior testimony.

THE WITNESS: Yeah, I just don't know what it is. It's not exactly a vaporizer because it's actually able to pass through it. Like, there's vapor or there's gas -- let's put it this way. There's gas coming into the right side in A4 and passing through and coming out in A2. So that's not a vaporizer, but there may be some part of it that's acting somewhat like a vaporizer in that it's -- it does have liquid coming into it -- into the top part of it through A1. And what exactly is coming out at A2 when the A1 flow is enabled, I just don't know at this point.

BY MR. STEMLER:

Q. So what I'm hearing is that there's some component between bottles 61 and regulator 62 that you believe to be vaporizing the fluid from the fluid bottles 61 before it reaches the regulator 62?

MR. FINCH: Objection, form, scope, misstates prior testimony.

THE WITNESS: Yeah. I'm just not sure how that gets converted from liquid to gas. We know it's ultimately converted to a gaseous state, but whether that conversion is done in 12 or possibly in 62, I just don't think that this application is teaching me that, or at least I haven't read those parts. But I just don't know at this point whether 12 or 62 is providing the conversion, or maybe it's a combination. I just don't know.

BY MR. STEMLER:

Q. Can you read the last sentence in paragraph 78 for me?

A. (Views document.) Okay. I've read it.

Q. Does that change your opinion?

A. I think that provides some clarification. It says, "The fuel pressure regulator 62 functions as a vaporizer for

vaporizing the first gas supplied thereto in liquid phase." So some part of 62 is acting like a vaporizer.

Q. Do you have an understanding now as to whether the fuel provided by bottles 61 would be liquid or gas state when passing through valve 12?

MR. FINCH: Objection, form, scope.

THE WITNESS: Yes. This portion appears to be describing that there is a path. And when I combine this, what we just read, with the picture in Figure 1, it does teach that that gas -- that fuel is being passed through in a liquid state through 12 somehow to 62 and is arriving in 62 in its liquid phase.

BY MR. STEMLER:

Q. After the first fuel, gas leaves the regulator 62, would you understand it to remain in the gaseous phase?

MR. FINCH: Objection, form, scope.

THE WITNESS: Yes. I believe that what we just read says that it leaves 62 in a gaseous state because it's been vaporized. And then the diagram shows it going to 63, which is essentially a cut-off valve, and that can open

and close the fuel. And then it appears to leave that and go up into a venturi, which goes up into the engine. So I don't see any structure there that somehow compresses it back into a liquid form. I believe it's gaseous form.

BY MR. STEMLER:

Q. Okay. You mentioned that you think fuel drawn from 71 is drawn in a gaseous phase, correct?

MR. FINCH: Objection, form, scope.

THE WITNESS: Yes. We read -- some part of this application indicated that certainly in some embodiment that's being pulled off in a gaseous state.

BY MR. STEMLER:

Q. Okay. Would you understand that fuel to remain in the gaseous state as it passes through fuel line A5?

MR. FINCH: Objection, form, scope.

THE WITNESS: Well, the only thing it's going through is 72. So let me quickly check what 72 is.

MR. FINCH: Taylor, while he's looking at that, we've been going about an

hour, 15. So whenever you get to a good breakpoint.

MR. STEMLER: All right. Thanks.

THE WITNESS: So I found in paragraph 73 that it's teaching that 72 is a pressure-reducing device. So I don't think that -- that would not convert it back to a liquid if it comes off there in a gas. It's just going to be a gas at a lower pressure.

BY MR. STEMLER:

Q. Okay. And so would it be in a gas as it passes through segment A5?

MR. FINCH: Objection, form, scope.

THE WITNESS: Yes, that's my understanding, is that it would leave as a gas, go through a pressure reducer and still be a gas at A5.

BY MR. STEMLER:

Q. Okay. And then also when it goes through pipe connector 14?

MR. FINCH: Objection, form, scope.

THE WITNESS: Pipe connector? I mean, yeah, 14 is a connector. So a connector generally wouldn't change it from gas to liquid. It's going to pass through that as a

gas.
BY MR. STEMLER:
Q. And then it would remain gas as it goes through section A4?
MR. FINCH: Objection, form, scope.
THE WITNESS: Yes, that's my understanding how this embodiment would work.
BY MR. STEMLER:
Q. And would it remain gas as it goes through valve 12?
MR. FINCH: Objection, form, scope.
THE WITNESS: You know, I haven't read everything that 12 does. As I told you, I don't really know all that 12 does, but I haven't -- see no indication that it's somehow able to amplify the pressure and squeeze that down to a liquid. So from what I've read so far today and looking at this diagram, it seems like it would pass through there in a gas state.
BY MR. STEMLER:
Q. And same with as it goes through line segment A2?
MR. FINCH: Objection, form, scope.
THE WITNESS: Yeah. I'd want to

read up about A2, because it appears that A2 is [unintelligible] liquid and a gas.

THE COURT REPORTER: I'm sorry. Can you say that again?

THE WITNESS: Yes. I think A2 does carry some gas, but I'd probably want to read up about if A2 is actually one line or two lines, because it's passing both liquid from the tank 61 -- or it's passing, you know, a fuel and liquid phase, and then it's also being described as passing the fuel from 71 in a gaseous state. So I'd like to read up on A2 and see if it's not actually two different lines physically and just being represented as one in this schematic diagram.

BY MR. STEMLER:

Q. Okay. I have the electronic version of this document up. I can send it to you as well if that'd be helpful.

A. Okay.

Q. But running a controlled find for A2 leads me to only two instances in paragraph 79 where that reference numeral was used. I recognize we're now probably overdue for a break, so maybe we can take that ten-minute

break. Perhaps you can read that paragraph during the break if you have some extra time, Dr. Singhose, and we can pick up where we left off here.

A. Okay. Sounds good.

Q. Okay.

THE VIDEOGRAPHER: We are going off the record.

Time now is 1:45.

(Off the record 1:45 to 1:55.)

THE VIDEOGRAPHER: We are back on the record. This is the start of Media Number 4.

The time is 1:55.

BY MR. STEMLER:

Q. Dr. Singhose, did you have a moment to review paragraph 79 when we were on our break?

A. Oh, yes, I did.

Q. After reviewing paragraph 79, do you have an opinion on whether the fuel provided by fuel bottles 61 would be gas or liquid in that section of the fuel line A2?

MR. FINCH: Objection, form, scope.

THE WITNESS: I think we discussed that before. I think that that teaching before

the break indicates that it would arrive in a liquid state.

BY MR. STEMLER:

Q. And the fuel provided by container 71 would be gaseous state as it passes through section A2?

MR. FINCH: Objection, form, scope.

THE WITNESS: Yes. I don't -- I think it has to be gas, gaseous.

BY MR. STEMLER:

Q. Okay. Would you consider line segment A2 to be a gaseous fuel line?

MR. FINCH: Objection, form, scope.

THE WITNESS: Yeah, I'm not sure that that terminology, "gaseous fuel line," as we're using it in these patents applies here. It seems to be a somewhat unusual structure that's either two different pipes clumped together, or a pipe that is passing both liquid and gaseous fuel. So I'm not sure I would describe it using the terminology of the patent because it doesn't seem to match up with the terminology in the patent.

BY MR. STEMLER:

Q. Does paragraph 79 describe A2 as being

two pipes clumped together?

MR. FINCH: Objection, form, scope.

THE WITNESS: No. It simply describes it as a pipe that's apparently passing both liquid and gas. So whether that's one pipe or two side-by-side pipes, I don't know.

BY MR. STEMLER:

Q. Would you typically call two side-by-side pipes a pipe?

MR. FINCH: Objection, scope.

THE WITNESS: I certainly would do that if I was a Japanese inventor, which Sugimoto is.

BY MR. STEMLER:

Q. Are you a Japanese inventor?

MR. FINCH: Objection, scope.

THE WITNESS: No. But I've worked with many Japanese inventors, and I have publications in Japanese, and so I have a very good understanding of how a Japanese engineer would characterize two pipes, they would call it a pipe.

BY MR. STEMLER:

Q. But there's nothing in Sugimoto itself

that describes the pipe as being two pipes?

MR. FINCH: Objection, form.

THE WITNESS: Right. The text just refers to it as a pipe, but it talks about it in two different sections of that paragraph and describes it as doing two different functions, that is, passing a liquid, and then also passing a gas, gaseous state fuel.

BY MR. STEMLER:

Q. Okay. I'd like to just switch gears and turn to the Kubota reference next.

A. Do you have an exhibit number for that?

Q. Sorry. I'm just trying to introduce it now. It's EX 1012. I'm pulling a copy of that up now.

A. Okay. I have that.

Q. All right. I'm looking at paragraphs 185 and 186 of your declaration, which is Exhibit 2133, that discusses the Kubota Workshop Manual.

A. Okay.

Q. Let me know when you're there.

A. Yes, I'm there.

Q. Specifically you mention in paragraph 185, "The Workshop Manual does

'utilize a battery or other source of power for starting.'" I'd like to ask you about the Kubota battery.

A. Okay.

Q. Do you know what the battery of Kubota does?

MR. FINCH: Objection, form.

THE WITNESS: Generally, yes.

BY MR. STEMLER:

Q. Generally, what does it do?

A. It supplies electrical energy.

Q. What does it supply electrical energy to?

A. Well, there's a number of, if you will, like, circuit diagrams in here, and so I think we'd have to go through all of those to answer that question fully, but [unintelligible] --

Q. [Unintelligible] --

A. -- provides power to the parts of Kubota's engine that need electricity to function.

Q. Might there be instances where the Kubota battery dies?

MR. FINCH: Objection, form, incomplete hypothetical.

THE WITNESS: Yeah. I mean, any battery can die or run out. I don't recall a section of Kubota describing that situation, though. But if there is one, you could just direct me to it.

BY MR. STEMLER:

Q. No, I'm not referring to any particular section. Would you understand the Kubota engine -- strike that.

Would you understand the Kubota battery to be able to provide electricity to the parts of the Kubota engine that need electricity to function when it is dead?

MR. FINCH: Objection, form, incomplete hypothetical.

THE WITNESS: No. I think if a battery is dead, that means it's -- it doesn't have electrical energy stored in it, so it's -- there's no way for it to provide electrical energy. It's not stored in there anymore.

BY MR. STEMLER:

Q. What might cause a battery to die?

MR. FINCH: Objection, form.

THE WITNESS: Well, it could be damaged. It could leak out its liquid if it's

a -- if it uses liquid, which it probably does. There could be corrosion on the terminals that are attaching the battery to the electrical system. There could be, like I said, a crack in the wall and leak. There could be just a loss of the acid. There could be a loss of the necessary chemicals in there over time, like, they could evaporate off.

BY MR. STEMLER:

Q. Might some of those conditions occur if the battery is not used for a long period of time?

MR. FINCH: Objection, form, incomplete hypothetical.

THE WITNESS: Yes. Batteries, if they just sit there and are not charged, they can trickle out their energy and go dead.

BY MR. STEMLER:

Q. I'm sharing a portion of your declaration. This is from paragraph 187. It's an annotated figure. Do you see what I'm showing you?

A. Yes.

Q. You discussed in your declaration the possibility or the impossibility of switching

the normally closed gas line cut-off solenoid valve with a normally open gasoline cut-off solenoid valve. Do you recall that?

MR. FINCH: Objection, form, misstates prior testimony.

THE WITNESS: I don't recall saying it was impossible. I was saying what's not disclosed or taught or explained, I think, is my opinion on that issue.

BY MR. STEMLER:

Q. Okay. If I were to replace the normally closed gasoline cut-off solenoid shown here in this figure as component 6 with a normally open solenoid valve, do you have any understanding of how I might rewire the circuitry so that only one fuel is delivered at a time?

MR. FINCH: Objection, form, incomplete hypothetical, scope.

THE WITNESS: I mean, I have some idea. I think if I studied it and worked on this, I could -- seems like I could figure out a way to do it, but I didn't do that. I didn't figure it all out. Basically, I read that, you know, there was a claim that it could be rewired. And my opinion is -- I don't see off

the top of my head or it's not obvious how it would be rewired. Please explain that to me essentially was my opinion on that.

BY MR. STEMLER:

Q. Sure. So, like, looking at the circuit diagram on the left-hand side of this page, if I were to replace the normally closed solenoid valve shown there with reference numeral 6 with a normally open solenoid valve and change nothing else and wanted to make sure that only one fuel was delivered at a time, you would not be able to tell me now how I might rewire this diagram to accomplish that?

MR. FINCH: Objection, form, misstates prior testimony.

THE WITNESS: I don't think just rewiring it makes it work. I think that you would need to add some more components. Because as I'm understanding it, the -- if it's normally open, it's -- all that gasoline is going to just leak out. And then when you start up the use of the LPG and you open it, there's going to be a lot of gas left in the float bowl there, as I understand it. And so the -- if that's open, then the gas is going to

be -- the gasoline -- this is a little bit challenging here. I'll try to be clear. The gasoline will be flowing out at the same time as the LPG is flowing. So I don't think it's just rewiring. I think you have to rewire and add some other mechanical components to get that to work.

BY MR. STEMLER:

Q. Do you understand how the rewiring would be accomplished?

MR. FINCH: Objection, form.

THE WITNESS: My understanding is the rewiring hasn't been explained to me, and I didn't do the investigation to figure that out, but I don't think it's just rewiring, I guess, is my answer. I don't -- rewiring wasn't explained to me. And I think it's more than just rewiring is required. So I just didn't go and do that investigation about how we could change all this stuff around to get a normally open gasoline cut-off solenoid. I just didn't do that design exercise.

BY MR. STEMLER:

Q. Could you do that design exercise right now?

A. I just don't think so. I think it's not simple. It's not obvious. How about that?
Q. So ignoring this issue of the gasoline leaking out that you say might occur, you're unable to tell me, sitting here today, how I might rewire this circuit if I were to replace the normally closed valve 6 with a normally open valve?
MR. FINCH: Objection, form, misstates prior testimony.
THE WITNESS: Yeah, I'm not -- looking at this diagram, I'm not seeing how I would do that. I think that I possibly could do it, but I didn't do it. And sitting here, I don't see an obvious way of doing that and getting [unintelligible] --
BY MR. STEMLER:
Q. How could -- how could you possibly do it?
A. Well, I mean, I think I'd have to conduct an engineering, you know, exercise here. I'd have to -- I'd have to take out the normally closed solenoid and replace it with a normally open one, and then go through and figure out all the other stuff I have to change

to make that work, to make it not leak, and then also to get only one fuel to flow at the same time. And so there's other design changes, I think, will have to occur if I change that solenoid state from normally closed to normally open.

Q. But ignoring those other changes, you're not able to tell me how you would rewire it?

A. That -- yeah, that's what I'm saying. Without doing those other ones, I don't know what else I need to do. It may very be likely that I have to add another solenoid somewhere else in the system to cut it off, and so that would affect the wiring. So the wiring flows from the other design choices that I have to do to get this to work.

Q. It sounds like the other issues that you're describing are primarily associated with this problem you're suggesting would occur with fuel leaking from the float bowl. Ignoring that issue, you can't tell me how you would rewire this?

MR. FINCH: Objection, form, calls for speculation, incomplete hypothetical, misstates prior testimony.

THE WITNESS: Well, that's -- that's not the only change. I think we have to make a change to this physical structure so that we stop the remaining gasoline that's in the float bowl from being pulled out when we open up the LPG so -- and let it start flowing. It looks to me like we would have both fuels -- both types of fuels flowing at the same time without adding some additional structure or additional valves to stop that from happening. So I don't know how to rewire it until we figure out the mechanical problem of leaking and, like, fuel crossover, the use of two fuels at the same time, which is really what this technology is trying to prevent.

BY MR. STEMLER:

Q. Okay. In paragraph 112 of your declaration you address claim construction, right?

A. Yes.

Q. Can you read the last sentence of paragraph 112 to me?

A. Yes. "In all cases, I have applied the ordinary and customary meaning of claim terms, as understood by a POSITA, in my analysis

provided herein."
Q. In order to apply the ordinary and customary meaning of the claim terms, did you form an opinion on what the ordinary and customary meaning of each claim term is?
MR. FINCH: Objection, form, calls for a legal conclusion.
THE WITNESS: I mean, I don't think I was that specific about looking at every word or group of words and doing that analysis. But yes, I read these claims in light of a person of ordinary skill in the art at the time of the invention actually, and I used my understanding of what that would be, but I didn't write down on paper, if you will, a converted meaning or trying to put it -- I didn't try to put those terms in some other terms. So I think that's very problematic, actually. Whenever you attempt to take a phrase from a patent claim or rewrite it, you're almost always going to narrow it and not capture the full scope of that, so I didn't -- I didn't write down alternative definitions.
BY MR. STEMLER:
Q. Do you think it's problematic -- strike

that.

I'd like to turn to page 105 of your declaration.

A. Okay.

Q. And this is addressing the Holzapfel reference.

A. I'm sorry. You said page 105?

Q. Yeah. Sorry.

A. I went to paragraph 105. Sorry. Okay. I'm there, 105.

Q. So looking at pages 105 to 108, I only see that you disclosed an opinion for elements 1.3 and 1.4, right?

MR. FINCH: Objection, form.

THE WITNESS: I think I did more than that. There's kind of an introduction to it. But yes, the claim elements that I addressed, you know, specifically are claim elements -- 1.3 and claim element 1.4.

BY MR. STEMLER:

Q. Were you asked to form an opinion on any of the other elements of claim 1 with respect to ground 5?

MR. FINCH: Objection, form.

THE WITNESS: I don't remember

anything like that. Generally, I'm not asked questions like that. I'm asked to address, like, an entire claim, and then I go through the claim element by element and come up with my opinion. So I don't remember any kind of question, like, if I'd go and reexamine claim element 1.2. I don't remember anything like that.

BY MR. STEMLER:

Q. Have you formed an opinion as to any of the other elements of claim 1?

MR. FINCH: Objection, form.

THE WITNESS: I don't think I formulated an opinion one way or the other. Basically, I chose these two claim elements because I think they're fairly not anticipated by Holzapfel, so those are the ones I put into my report. But if you want to bring up the other ones and discuss it in detail, I'm perfectly happy to do that. Maybe we'll find a problem with some of the other limitations as well.

BY MR. STEMLER:

Q. Dr. Singhose, do you know what the term "STP" stands for?

MR. FINCH: Objection, form.
THE WITNESS: I think it could probably stand for different sorts of things; if you give me some context.
BY MR. STEMLER:
Q. Yeah. In the context of liquid fuel sources and gaseous fuel sources.
MR. FINCH: Objection, form, calls for speculation.
THE WITNESS: Yeah. I'll have to speculate. It could be standard temperature and pressure. Without the context, that's one thing it could mean.
BY MR. STEMLER:
Q. Sure. Well, when I'm talking about standard temperature and pressure, do you know exactly what pressure and what temperature I'm referring to?
MR. FINCH: Objection, form.
THE WITNESS: No. I'm not sure there is an exact -- like, I don't think those are given as exact values. I think that they're indicating the ambient temperatures and pressure that would normally mean atmospheric pressure, but of course that can vary. If

you're operating your engine at sea level or up in the Andes at 16,000 feet, that's going to be quite a bit different. So it generally refers to where you think this is going to be operated and sort of the temperature range over what you think it's going to be operated. Again, that's going to be a variation. If you're operating your engine in Arizona, it's going to be quite different than you're operating it in St. Petersburg in the winter. So it's definitely a range but sort of a -- what you expect the temperatures and pressures to be.

BY MR. STEMLER:

Q. You mentioned in your declaration an example of a forklift that is operated using a liquid LPG supply. I have a section of your declaration up showing paragraph 62 and 63 where you include this discussion. Do you remember that?

A. Yes, I do.

MR. FINCH: Objection, misstates prior testimony.

BY MR. STEMLER:

Q. Do those forklift engines combust the liquid LPG in the liquid phase or in the

gaseous phase in the engine?

MR. FINCH: Objection, form.

THE WITNESS: In the gaseous phase.

BY MR. STEMLER:

Q. What effect does it have on an engine if a vapor service tank is replaced with a liquid service tank and a vaporizer and those two services provide the same air-to-fuel ratio to the engine?

MR. FINCH: Objection, form, incomplete hypothetical.

THE WITNESS: So I understand the hypothetical, I have a system -- you seem to be asking me to swap out one system for another, but I kind of want to understand what I'm starting with. So I'm starting with a system that uses, say, a gaseous LPG source and a pressure regulator, and that's going into an engine, an engine is running. And then you want me to change out the gaseous fuel tank and the pressure regulator with a liquid fuel source and a vaporizer, is that --

BY MR. STEMLER:

Q. Yeah.

A. So you want me to make those two

physical changes?

Q. Make those two physical changes and assume that both of those two groups of structures supply the same air-to-fuel ratio.

MR. FINCH: Objection, form.

THE WITNESS: Okay. It's still kind of incomplete, because there's an air-to-fuel ratio, which I guess might be able to made somewhat similar. But there's another variable I think that's very important which is the volume flow rate. Generally the volume flow rate coming off of that liquid fuel source would be much higher, so you would get a larger amount of fuel per unit time. So I'd also have to somehow -- I have to achieve the same -- to get the same kind of performance, I need the same air-to-fuel ratio plus the same volumetric flow rate. Not sure that can be done, but you're asking me to assume that it could be done. And then I think that the engine wouldn't know that much of a difference. It would be getting the fuel ratio that it needs and the volumetric flow rate that it needs to function on. I think given all that stuff, the engine might operate about the same.

BY MR. STEMLER:
Q. Do you recall noting in your declaration that there's vapor that's occasionally stored in the head of a gasoline tank?
MR. FINCH: Objection, form.
THE WITNESS: Yeah. I don't think those were my exact words, but in any gasoline tank, there's going to be some open air at the top which is generally going to be a vapor.
BY MR. STEMLER:
Q. If that gasoline vapor were extracted from the head of the gasoline tank and sent to the engine, would you then consider the gasoline tank to be a gaseous fuel source?
MR. FINCH: Objection, form, incomplete hypothetical, scope.
THE WITNESS: I think if I had a car, I couldn't get it to run off of just the vapor off the top. But supposed I had, like, a little tiny, I don't know, lawnmower or something, maybe much less powerful, and I'm going to draw off the gasoline vapor at the top, I'm going to have to put a lot of stuff in there like lines in the fuel pump or an air fan or something. I don't know if I can get it to

run, because I don't think there's a lot of fuel density in that vapor. I've never kind of seen them operate that way. So my guess is it may not really work because there may not be enough fuel density. But if somebody did it, like, in a lab somewhere, that would be interesting maybe to see how they got it to work, but it's going to be basically a low-energy density vapor if we do that.

BY MR. STEMLER:

Q. And if you did that, would it be called a gaseous fuel source?

MR. FINCH: Objection, form.

THE WITNESS: Yeah, I think in that special case with however we might do that, I would think that it's -- now you're drawing -- the fuel source is, in fact, a vapor because you're not drawing off the bottom, you're not drawing the liquid. So I think I would call that a gaseous fuel source in whatever kind of mechanism we came up to do that, but that's what I would call it.

BY MR. STEMLER:

Q. Do you know how much force is required to pull-start an engine?

A. Nobody knows the answer to that until you tell me what the engine is and what the temperature is and how much rust is in there. It's just a huge -- it's a huge range of forces required.

Q. What's an approximate range?

MR. FINCH: Objection, form, calls for speculation.

THE WITNESS: I can pull-start -- I have a relatively small lawnmower that I have to pull quite a few times to get it going. Each one of those pulls that I do is probably on the order of about 30 pounds. My lawnmower really takes a little bit more pull, and more importantly it takes a longer pull. The pull string on there, if you will, is much longer for my lawnmower because it's a bit bigger engine.

MR. STEMLER: Let's take another break. About ten minutes work for you guys?

MR. FINCH: Okay.

THE VIDEOGRAPHER: We are going off the record.

Time now is 2:34.

(Off the record 2:34 to 2:45.)

THE VIDEOGRAPHER: We are back on the record. This is the start of Media Number 5.

The time is 2:45.

BY MR. STEMLER:

Q. Dr. Singhose, you remember discussing an example of a system where one draws gasoline vapor from the head space of a gasoline tank to run a hypothetical engine on that gasoline vapor?

MR. FINCH: Objection, form, misstates prior testimony.

THE WITNESS: That's what we were discussing before the break, a possibility of trying to achieve that.

BY MR. STEMLER:

Q. Another question about that example. If during the -- if during the course of the pathway of that gasoline vapor from the head space of the tank to a point right before the carburetor, that gasoline were to stay in the vapor phase and then be recondensed into liquid gasoline immediately before the carburetor, would you still consider that gasoline tank to be a gaseous fuel source?

MR. FINCH: Objection, form, scope, calls for speculation, incomplete hypothetical.

THE WITNESS: I haven't considered that configuration. It sounds very esoteric. I guess it's so unusual to me that I don't think I would use the terminology of this patent. Like, I'm not sure that the terminology and the teachings of this patent we can then take that understanding and apply it to something so unusual.

BY MR. STEMLER:

Q. Why not?

A. I just feel uncomfortable using either gaseous fuel source or liquid fuel source for something that is not at all discussed in these patents. Again, I'm interpreting these claim terms in light of the specification and the prosecution history, and so nothing I can think of in the specification figures or prosecution history is related to that kind of configuration, so I don't know how to apply the claim terms to something that's so unrelated.

Q. You provided infringement opinions on these patents, right?

MR. FINCH: Objection, form, scope.

THE WITNESS: Not that I'm aware of. What are you referring to?
BY MR. STEMLER:
Q. I'm referring to -- strike that.
Do you intend to provide infringement opinions relating to these patents?
MR. FINCH: Objection, form, scope. This is an IPR proceeding. There's no infringement case here.
THE WITNESS: I'm trying to answer your question here. Did you say patents or the patent here? I think there's only one patent here, what we'll call the '398 patent.
BY MR. STEMLER:
Q. Sure. Let's consider first the '398 patent.
A. The '398 patent -- I have not done an infringement analysis on this patent comparing any products yet. Whether or not I do that is not in my -- not my choice really at this point. So it's hard for me because I have [sic] an intention to do it when I haven't really been asked --
MR. FINCH: Dr. Singhose, I'd caution you to not testify as to

attorney-client privileged materials or any discussions you've had with litigation counsel.

THE WITNESS: Sure.

BY MR. STEMLER:

Q. Do you think you would be able to provide an infringement opinion related to the '398 patent?

A. Yes.

Q. So you think you would be able to apply the claim terms of the '398 patent to structures that are not disclosed in the '398 patent, correct?

MR. FINCH: Objection, form, scope, calls for speculation.

THE WITNESS: Well, I think that generally the generators that I'm aware of would have structures that are disclosed. So without an example of that, I can't really answer the question. Seems like I would be looking at generators that have the kind of structures that are disclosed in the '398 patent, so I don't really understand the setup of the question.

BY MR. STEMLER:

Q. I'd like to share another exhibit. I'm

going to share or introduce Exhibit 1009. This is the Holzapfel reference. Pulling up a picture of Figure 1. Do you see this picture?
A. Yes, I do.
Q. Have you analyzed this reference before?
A. Yes, I have.
Q. Can you describe generally to me what this reference relates to?
MR. FINCH: Objection, form.
THE WITNESS: Generally, it relates to a fuel system for an internal combustion engine in a car, I guess possibly a truck, so I guess an automobile.
BY MR. STEMLER:
Q. How many different fuels can the fuel system use?
MR. FINCH: Objection, form.
THE WITNESS: Well, it's described as using two tanks of fuel. Fifteen and 16, I believe, are the two tanks that you can use to power this combustion engine.
BY MR. STEMLER:
Q. Does Holzapfel allow for both of those fuels to be supplied to the engine at a given time, or is it just one of the fuels that's

allowed to be supplied to the engine at a given time?

MR. FINCH: Objection, form.

THE WITNESS: My understanding is there is a switch to switch from which fuel source is being used. I think there's a time period where there's some overlap when possibly some residual of the first fuel that you've cut off is still in the system and going through there, but nominally it's supposed to change from one fuel source to the other and not use both at the same time.

BY MR. STEMLER:

Q. Okay. So there's some type of, what, like, user selection between one fuel or another fuel?

MR. FINCH: Objection, form.

THE WITNESS: Yeah. There's basically a physical mechanism that the -- whoever is driving this automobile will pull or push, and that goes through essentially like a linkage cable down, and it switches effectively a valve that closes off one of the fuel supplies and opens up the other. That's my understanding of what it's describing.

BY MR. STEMLER:
Q. Okay. All right.
MR. STEMLER: No further questions.
MR. FINCH: I don't think I have anything, but let's take a five-minute break while I check my notes.
Dr. Singhose, if you want to just hang out in the conference room, this shouldn't take long.
THE WITNESS: Okay.
THE VIDEOGRAPHER: We are going off the record.
The time now is 2:57.
(Off the record 2:57 to 3:01.)
THE VIDEOGRAPHER: We are back on the record.
Time now is 3:01.
MR. FINCH: I do not have any questions. Thank you for your time today, Dr. Singhose.
THE WITNESS: Okay.
MR. STEMLER: Thank you, Dr. Singhose.
THE WITNESS: Thank you.
THE VIDEOGRAPHER: This concludes

today's deposition.

Time now is 3:02 p.m.

(Deposition concluded at 3:02 p.m.)

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REPORTER'S CERTIFICATE

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

I hereby certify that I reported the remote deposition of DR. WILLIAM SINGHOSE on Tuesday, August 4, 2026, from Maple Grove, Minnesota, and that the witness was by me first duly sworn to tell the whole truth;

That the testimony was transcribed by me and is a true record of the testimony of the witness;

That the cost of the original has been charged to the party who noticed the deposition, and that all parties who ordered copies have been charged at the same rate for such copies;

That I am not a relative or employee or attorney or counsel of any of the parties, or a relative or employee of such attorney or counsel;

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That the right to read and sign the deposition transcript by the witness was reserved.

WITNESS MY HAND AND SEAL THIS 7th day of August, 2026.



Dana S. Anderson-Linnell
Notary Public, Hennepin County, MN
My commission expires 1/31/2030

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1100 Superior Ave
Suite 1820
Cleveland, Ohio 44114
Phone: 216-523-1313

August 7, 2026

To: Mr. Finch

Case Name: 398 Champion Power Equipment, Inc. v. Generac Power Systems, Inc. IPR2025-1271
Veritext Reference Number: 8345697
Witness: Dr. William Singhose Deposition Date: 8/4/2026

Dear Sir/Madam:

Enclosed please find a deposition transcript. Please have the witness review the transcript and note any changes or corrections on the included errata sheet, indicating the page, line number, change, and the reason for the change. Have the witness' signature notarized and forward the completed page(s) back to us at the Production address shown

above, or email to production-midwest@veritext.com.

If the errata is not returned within thirty days of your receipt of this letter, the reading and signing will be deemed waived.

Sincerely,

Production Department

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DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 8345697
CASE NAME: 398 Champion Power Equipment, Inc. v. Generac Power Systems, Inc. IPR2025-1271
DATE OF DEPOSITION: 8/4/2026
WITNESS' NAME: Dr. William Singhose

In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me.

I have made no changes to the testimony as transcribed by the court reporter.

_____ _____
Date Dr. William Singhose

Sworn to and subscribed before me, a Notary Public in and for the State and County, the referenced witness did personally appear and acknowledge that:

They have read the transcript;
They signed the foregoing Sworn Statement; and
Their execution of this Statement is of their free act and deed.

I have affixed my name and official seal

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DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 8345697
CASE NAME: 398 Champion Power Equipment, Inc. v. Generac Power Systems, Inc. IPR2025-1271
DATE OF DEPOSITION: 8/4/2026
WITNESS' NAME: Dr. William Singhose

In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me.

I have listed my changes on the attached Errata Sheet, listing page and line numbers as well as the reason(s) for the change(s).

I request that these changes be entered as part of the record of my testimony.

I have executed the Errata Sheet, as well as this Certificate, and request and authorize that both be appended to the transcript of my testimony and be incorporated therein.

_____ _____
Date Dr. William Singhose

Sworn to and subscribed before me, a Notary Public in and for the State and County, the referenced witness did personally appear and acknowledge that:

They have read the transcript;
They have listed all of their corrections in the appended Errata Sheet;
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