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Transcript of Troy L. Thornton

Date: June 25, 2025

Case: Imperative Care, Inc. -v- Inari Medical, Inc. (PTAB)

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INARI-2010
Imperative Care, Inc. v Inari Medical, Inc.

IPR2024-01157

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2 BEFORE THE PATENT TRIAL AND APPEAL BOARD

3
4 IMPERATIVE CARE, INC.,)

5 Petitioner,)

6 VS.)

7 INARI MEDICAL, INC.,)

8 Patent Owner.)

Case No. IPR2025-00156
U.S. Patent No. 11,697,012

9 _____)
10
11
12
13 IN-PERSON VIDEOTAPED DEPOSITION OF
14 TROY THORNTON
15 WEDNESDAY, JUNE 25, 2025
16
17
18
19
20
21
22

23 STENOGRAPHIC REPORTER: CHRISTA YAN, CSR NO. 14316, RPR
24 _____
25

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--oOo--

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--oOo--

E X H I B I T S

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Exhibit 2006 -	US Patent Application	107
	Publication US 2008/0087853 A1	

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Transcript of Troy L. Thornton
Conducted on June 25, 2025

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1 BE IT REMEMBERED that on WEDNESDAY, the 25TH DAY OF
2 JUNE, 2025, at the hour of 9:01 A.M., of said day, at
3 333 Bush Street, 21st Floor, San Francisco, California
4 94104, before me, CHRISTA YAN, a Certified Shorthand
5 Reporter, State of California, personally appeared TROY
6 THORNTON, who was examined as a witness in said cause;
7 that said transcript format was prepared in accordance
8 with California Code of Regulations Section 2473.

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Transcript of Troy L. Thornton
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1 THE VIDEOGRAPHER: Here begins Media Number 1 in the
2 videotaped deposition of Troy L. Thornton in the matter of
3 Imperative Care, Inc., versus Inari Medical, Inc., PTAB in
4 the United States Patent and Trademark Office before the
5 Patent Trial and Appeal Board, Case Number IPR2025-00156.

6 Today's date is June 25th, 2025. The time on the
7 video monitor is 9:01. The videographer today is Philip
8 Astor, representing Planet Depos. This video deposition
9 is taking place at Knobbe Martens, San Francisco,
10 California.

11 Would counsel please voice identify themselves
12 and state whom they represent.

13 MR. HAMILTON: Good morning. This is Joseph Hamilton
14 from Perkins Coie representing patent owner.

15 MR. STOWELL: Joshua Stowell of Knobbe Martens
16 representing petitioner and the witness.

17 THE VIDEOGRAPHER: The court reporter today is Christa
18 Yan representing Planet Depos.

19 TROY THORNTON,
20 the Witness, called on behalf of the Patent Owner, being
21 duly sworn to state the truth, the whole truth, and
22 nothing but the truth, testified on oath as follows:

23 EXAMINATION

24 BY MR. HAMILTON:

25 Q Good morning, Mr. Thornton.

09:01:31
09:01:33
09:01:38
09:01:43
09:01:47
09:01:55
09:01:59
09:02:03
09:02:05
09:02:09
09:02:10
09:02:12
09:02:13
09:02:17
09:02:20
09:02:24
09:02:26
09:02:30
09:02:30
09:02:30
09:02:30
09:02:30
09:02:40
09:02:40
09:02:42

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1	A	Good morning.	09:02:43
2	Q	Could you state your full name for the record?	09:02:44
3	A	Troy Layne Thornton.	09:02:46
4	Q	And what's your current address?	09:02:50
5	A	773 Rhode Island Street, San Francisco, 94107.	09:02:51
6	Q	Do you recall being deposed by me mid-March in a	09:03:00
7		related matter for the '011 patent?	09:03:07
8	A	Yes.	09:03:12
9	Q	I know I went over this before. But I'm just	09:03:12
10		going to go through it again just so it's clear today.	09:03:17
11		You understand you're under oath?	09:03:20
12	A	Yes.	09:03:21
13	Q	Do you understand at the conclusion of this	09:03:22
14		deposition, you're going to be given a transcript, and	09:03:27
15		you'll have an opportunity to correct any errors in that	09:03:29
16		transcript, and if you -- any substantive changes that you	09:03:32
17		make may be commented upon and may affect your	09:03:36
18		credibility. Do you understand that?	09:03:40
19	A	Yes.	09:03:41
20	Q	If at any time there's something you don't	09:03:41
21		understand or you don't hear me, please feel free to ask	09:03:45
22		for clarification, definitions, explanations. One thing I	09:03:48
23		would ask is that we not speak over each other. We have a	09:03:53
24		court reporter here who is recording everything we say.	09:03:56
25		So I'll try to wait for your answer before I ask the next	09:03:59

Transcript of Troy L. Thornton
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1	question. If you could wait for my question before you	09:04:02
2	answer. Can you do that?	09:04:05
3	A Yes.	09:04:06
4	Q Thank you.	09:04:07
5	In terms of responses, I'll also ask that you	09:04:07
6	give an audible response and not a head nod, but a yes or	09:04:12
7	a no. Is that fair?	09:04:16
8	A Yes.	09:04:18
9	Q Is there any reason you can't give your full,	09:04:18
10	complete, and truthful testimony today?	09:04:20
11	A No.	09:04:22
12	Q Are you on any medications or have any health	09:04:24
13	conditions that might prevent you from giving your full,	09:04:27
14	complete, and truthful testimony today?	09:04:30
15	A No.	09:04:33
16	Q If at any time you need a break, feel free to	09:04:34
17	ask. One thing I request is we don't take a break while a	09:04:36
18	question is pending. Is that fair?	09:04:40
19	A Yes.	09:04:41
20	Q Did you bring any documents with you today?	09:04:42
21	A No.	09:04:50
22	Q Did you do any preparation for your deposition	09:04:51
23	today?	09:04:56
24	A I didn't do any preparation today.	09:04:57
25	Q Did you do any preparation for your deposition?	09:05:02

Transcript of Troy L. Thornton
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1	A	Yes.	09:05:04
2	Q	And what did you do?	09:05:06
3	A	Reviewed a number of documents including my	09:05:08
4		declaration. I met with patent counsel yesterday.	09:05:13
5	Q	Do you recall which documents you reviewed?	09:05:16
6	A	Not all of them. Not each of them.	09:05:20
7	Q	Other than your declaration, what documents do	09:05:25
8		you recall reviewing?	09:05:28
9	A	The '012 patent, Schaffer patent, maybe some	09:05:28
10		other patents that are referenced in my declaration.	09:05:39
11	Q	Do you recall reviewing any documents that aren't	09:05:44
12		marked as an exhibit in this matter?	09:05:50
13	A	No.	09:05:51
14	Q	So you had said you met with counsel yesterday;	09:05:53
15		is that right?	09:06:09
16	A	Yes.	09:06:09
17	Q	How long did you meet?	09:06:10
18	A	About four hours.	09:06:12
19	Q	And where did you meet?	09:06:18
20	A	Here in this building.	09:06:19
21	Q	And who was present at that meeting?	09:06:22
22	A	Joshua.	09:06:24
23	Q	Anybody else?	09:06:28
24	A	No.	09:06:29
25	Q	Other than that meeting for four hours yesterday	09:06:29

Transcript of Troy L. Thornton
Conducted on June 25, 2025

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1	and your reviewing of the documents as you previously	09:06:37
2	testified, did you do any other preparation for your	09:06:39
3	deposition?	09:06:42
4	A No.	09:06:43
5	Q So I had asked at the last deposition in March	09:06:44
6	about your prior deposition experience and testimony.	09:07:02
7	Since that deposition, have you been deposed in any other	09:07:06
8	matter?	09:07:09
9	A No.	09:07:09
10	Q Have you testified in any other matter?	09:07:10
11	A No.	09:07:12
12	Q Do you bill your time for this matter by the	09:07:13
13	hour?	09:07:35
14	A Yes.	09:07:36
15	Q What's your rate?	09:07:37
16	A \$500 per hour.	09:07:38
17	Q And how many hours have you spent total on this	09:07:41
18	matter?	09:07:44
19	A Preparing for the deposition? Or writing the	09:07:44
20	declaration? Or...	09:07:51
21	Q Total.	09:07:52
22	A I don't know.	09:07:53
23	Q Less than 20?	09:07:55
24	A No.	09:07:57
25	Q Less than 30?	09:08:05

1	A	I don't remember. Could be around there.	09:08:08
2	Q	Have you provided declarations or worked on	09:08:13
3		matters that are related to this specific IPR?	09:08:19
4	MR. STOWELL:	Objection. Vague.	09:08:23
5	THE WITNESS:	Yeah, can you clarify?	09:08:24
6	BY MR. HAMILTON:		09:08:28
7	Q	What don't you understand about my question?	09:08:29
8	A	Can you repeat the question?	09:08:30
9	Q	Have you provided declarations or worked on	09:08:33
10		matters that are related to this specific IPR?	09:08:38
11	MR. STOWELL:	Same objection.	09:08:41
12	THE WITNESS:	I worked on an IPR related to the 011	09:08:41
13		patent which is, you know, has the same specification, and	09:08:51
14		there were prior IPRs that also had the same	09:08:54
15		specification. I can't remember how many that I've worked	09:08:57
16		on. Several.	09:08:59
17	BY MR. HAMILTON:		09:09:00
18	Q	When you say several, does nine, say, sound about	09:09:10
19		right?	09:09:13
20	A	Seems like less than that.	09:09:13
21	Q	Okay. Other than with counsel in this matter,	09:09:16
22		have you discussed your testimony, declaration, or any	09:09:44
23		other aspect of this matter with anybody else?	09:09:51
24	A	No.	09:09:52
25	Q	Have you ever communicated in any way with anyone	09:09:53

1	at Imperative Care?	09:10:01
2	A No. Can you repeat the question?	09:10:07
3	Q Are you concerned your answer wasn't correct for	09:10:19
4	that question?	09:10:29
5	A I may need to add something to the answer.	09:10:30
6	Q Okay. Sure.	09:10:32
7	Have you ever communicated in any way with anyone	09:10:32
8	at Imperative Care?	09:10:34
9	A Yes. I know a couple of people at Imperative	09:10:36
10	Care.	09:10:40
11	Q And have you communicated with those people in	09:10:40
12	connection with any of your work on this IPR or the	09:10:43
13	related IPRs that we just discussed?	09:10:46
14	A No.	09:10:48
15	Q When was the last time you communicated with	09:10:49
16	anybody at Imperative Care?	09:10:51
17	A I don't remember exactly. Except that I was at	09:10:52
18	Dr. Fogerty's 90th birthday party when I communicated with	09:11:04
19	somebody I used to work with who is now at Imperative	09:11:10
20	Care. Probably a year and a half ago.	09:11:13
21	Q Do you recall if that was before or after your	09:11:15
22	retention in this matter or any of the related IPRs?	09:11:20
23	A Before.	09:11:24
24	Q So since your retention in this matter or any of	09:11:25
25	the related IPRs, have you communicated with anybody at	09:11:29

1	Imperative Care?	09:11:33
2	A No.	09:11:33
3	Q I'm going to hand you what's been previously	09:11:39
4	marked as Exhibit 1001.	09:11:59
5	Do you recognize Exhibit 1001?	09:12:07
6	A Yes.	09:12:10
7	Q What is 1001?	09:12:12
8	A U.S. Patent 11,697,012 B2.	09:12:14
9	Q And earlier, you had referred to the '012 patent.	09:12:21
10	Is this the patent you were referring to?	09:12:28
11	A Yes.	09:12:29
12	Q So today, as we go through the -- your testimony,	09:12:30
13	you and I may both refer to the '012 patent. Is it fair	09:12:39
14	that you understand that we're referring to this	09:12:43
15	Exhibit 1001?	09:12:46
16	A Yes.	09:12:46
17	Q I'm going to hand you what's marked as	09:12:47
18	Exhibit 1003.	09:13:14
19	Do you recognize Exhibit 1003?	09:13:17
20	A Yes.	09:13:23
21	Q What is Exhibit 1003?	09:13:23
22	A It's my declaration related to this '012 patent.	09:13:26
23	Q If you turn to the last page, 157, is that your	09:13:38
24	signature?	09:13:48
25	A It's my electronic signature.	09:13:48

1	Q	And what do you mean by your electronic	09:13:50
2		signature?	09:13:52
3	A	I signed it using a PDF signature block.	09:13:52
4	Q	Does that mean you inserted your signature into	09:13:59
5		this PDF document?	09:14:07
6	A	Yes.	09:14:07
7	Q	Is that an electronic representation of your	09:14:09
8		signature, or is that your actual as you would write it by	09:14:16
9		hand?	09:14:21
10	A	The former.	09:14:21
11	Q	So that writing Troy Thornton was generated by	09:14:23
12		the PDF program; is that right?	09:14:29
13	A	Yes.	09:14:31
14	Q	And did you personally insert that signature onto	09:14:32
15		this page?	09:14:38
16	A	Yes.	09:14:38
17	Q	And did you do that on November 8th, 2024?	09:14:39
18	A	Yes.	09:14:43
19	Q	Have you submitted any other declaration or	09:14:44
20		testimony in this IPR?	09:15:11
21	A	I don't believe so.	09:15:11
22	Q	Is your Declaration Exhibit 1003 your full and	09:15:19
23		complete testimony in this IPR?	09:15:26
24	A	Yes.	09:15:28
25	Q	Are there any mistakes in Exhibit 1003 that	09:15:29

1	you're aware of?	09:15:34
2	A Not that I'm aware of.	09:15:34
3	Q Is there anything that's not correct in	09:15:36
4	Exhibit 1003 that you're aware of?	09:15:41
5	A Not that I know of.	09:15:42
6	Q Is there anything you want to change in	09:15:45
7	Exhibit 1003?	09:15:47
8	A No.	09:15:48
9	Q Do you want to withdraw any of your opinions set	09:15:49
10	forth in Exhibit 1003?	09:16:02
11	A No.	09:16:03
12	Q If you take a look at the table of exhibits, I	09:16:05
13	believe it's identified as page 1. It's a couple of pages	09:16:42
14	into the declaration. You see that?	09:16:47
15	A Yes.	09:16:50
16	Q Other than what's listed in this table of	09:16:51
17	exhibits, have you reviewed any other exhibits in	09:16:54
18	connection with preparing your declaration?	09:16:57
19	A I did review the transcript from the last	09:16:59
20	deposition, which is not listed here.	09:17:15
21	Q Okay. So I just want to clarify. So my question	09:17:17
22	was in preparing your declaration, and at the time this	09:17:21
23	declaration was signed, you hadn't been deposed, correct?	09:17:25
24	A Yes. I misunderstood the question. Can you	09:17:27
25	repeat the question?	09:17:32

1	Q	Well, let's clarify a couple things.	09:17:32
2	A	Okay.	09:17:36
3	Q	So actually, at that time you had been deposed in	09:17:37
4		the litigation, hadn't you?	09:17:39
5	A	I don't remember the timing of that deposition.	09:17:40
6	Q	Okay. So in preparing your declaration, did you	09:17:44
7		review a deposition transcript?	09:17:47
8	A	I don't believe so.	09:17:48
9	Q	In preparing your declaration, did you review any	09:17:53
10		other documents or information that's not listed on this	09:17:58
11		table of exhibits?	09:18:02
12	A	I don't believe so.	09:18:03
13	Q	Okay. So when you said you reviewed a deposition	09:18:06
14		transcript, what deposition were you referring to?	09:18:11
15	A	The most recent one that was with you -- I don't	09:18:14
16		remember the date -- in preparation for this deposition	09:18:19
17		today.	09:18:23
18	Q	And was that -- was that deposition transcript in	09:18:23
19		relation to an IPR related to the '011 patent?	09:18:27
20	A	If that was the most recent deposition, yes.	09:18:32
21	Q	Okay. Fair enough.	09:18:38
22		When did you review that transcript?	09:18:39
23	A	A day or two ago.	09:18:45
24	Q	So is it fair to say you reviewed it in	09:18:50
25		preparation for your deposition today?	09:18:53

1	A	Yes.	09:18:54
2	Q	Other than a day or two ago, had you reviewed	09:18:54
3		that transcript before?	09:18:59
4	A	I reviewed it shortly after to look for	09:19:00
5		corrections or to make corrections.	09:19:09
6	Q	And did you make any corrections to that	09:19:11
7		transcript?	09:19:19
8	A	I believe there were a few.	09:19:19
9	Q	Other than those few corrections, are you aware	09:19:23
10		of any other errors in that transcript?	09:19:26
11	A	No.	09:19:28
12	Q	Is there anything else you want to change in that	09:19:30
13		transcript?	09:19:32
14	A	No.	09:19:32
15	Q	Okay. So since preparing your declaration --	09:19:34
16		I'll just remind you the date, November 8, 2024 -- have	09:19:50
17		you reviewed any other documents or information in	09:19:54
18		connection with this IPR?	09:19:56
19	A	I don't believe so.	09:19:57
20	Q	And just to clarify, other than your deposition	09:20:01
21		transcript?	09:20:04
22	A	I don't believe so.	09:20:04
23	Q	In this list of exhibits you'll see some	09:20:07
24		references, for example, Exhibit 1005 which is referred to	09:20:25
25		as Schaffer, 1006 Hartley, 1007 Eller. Do you see that?	09:20:31

1	A	Yes.	09:20:40
2	Q	Did you find those references for your	09:20:41
3		declaration, or were those given to you by counsel?	09:20:42
4	A	I believe those were first given to me by counsel	09:20:46
5		sometime ago related to one of the first IPRs, I believe.	09:20:54
6	Q	Is there any document on this list of exhibits	09:20:57
7		that was not given to you by counsel that you found on	09:21:02
8		your own?	09:21:04
9	A	Well, my résumé, Exhibit 1004, I provided to	09:21:05
10		counsel, and the rest of them, I believe were provided by	09:21:20
11		counsel.	09:21:29
12	Q	And that would include Exhibit 1003, do you see	09:21:29
13		that, the dictionary definition?	09:21:47
14	A	Yes.	09:21:49
15	Q	Did you look at any other dictionaries in	09:21:50
16		conjunction with -- in preparing your declaration?	09:21:57
17	A	I may have. I don't remember.	09:21:59
18	Q	So as you sit here today, do you recall looking	09:22:04
19		at any dictionaries in preparing your declaration?	09:22:07
20	A	I may have looked up certain words. I don't	09:22:09
21		really remember.	09:22:18
22	Q	Okay. So since preparing your declaration and in	09:22:18
23		connection with this matter, this IPR, is it correct that	09:22:24
24		you have reviewed no other documents except your	09:22:33
25		deposition transcript from mid-March that we just	09:22:37

1	discussed?	09:22:42
2	A I think that's true as it relates to this	09:22:42
3	specific IPR.	09:22:47
4	Q Okay. And are you aware that since your	09:22:48
5	declaration, the patent office has issued an institution	09:22:52
6	decision?	09:22:58
7	A Yes.	09:22:58
8	Q Did you read that?	09:23:00
9	A I did.	09:23:01
10	Q Okay. So there's one document. Right?	09:23:04
11	Any others now that you can think of?	09:23:09
12	A Not that I can think of.	09:23:10
13	Q Are you aware that the patent owner submitted a	09:23:14
14	response to your declaration and a declaration from	09:23:21
15	another expert since the filing of your declaration here?	09:23:23
16	A Yes.	09:23:27
17	Q Did you read any of those?	09:23:33
18	A I did read a declaration from Zalesky, I believe.	09:23:37
19	Q Okay. So there's another one?	09:23:42
20	A Yeah.	09:23:44
21	Q And did you read the response from patent owner?	09:23:45
22	A I don't believe so. I believe I saw the	09:23:47
23	declaration from Zalesky, is what I read recently.	09:23:55
24	Q And are you aware that Dr. Zalesky referred to	09:23:58
25	some exhibits in his declaration?	09:24:02

1	A	I don't know. I can't remember what he might	09:24:03
2		have referred to in there.	09:24:09
3	Q	Did you review any exhibits that were referred to	09:24:10
4		in his declaration?	09:24:14
5	A	I don't recall.	09:24:14
6	Q	So as you sit here today, you remember reading	09:24:19
7		his declaration, but you don't recall whether you read any	09:24:21
8		of the exhibits attached to his declaration; is that	09:24:24
9		correct?	09:24:26
10	A	I --	09:24:26
11	Q	Or excuse me, referred to in his declaration?	09:24:30
12	A	What I recall is most of the references were	09:24:32
13		similar to the ones that I have in here, Schaffer,	09:24:39
14		Hartley, Eller. So I don't remember reading any other	09:24:45
15		exhibits that he might have referenced.	09:24:49
16	Q	Okay. So in connection with this matter, other	09:24:51
17		than the exhibits that are set forth here, you've reviewed	09:24:56
18		your deposition transcript from March in a related IPR,	09:24:59
19		you've reviewed the institution decision and you reviewed	09:25:04
20		a declaration from Dr. Zalesky; is that right?	09:25:08
21	A	Yes.	09:25:11
22	Q	And as you sit here today, do you recall	09:25:12
23		reviewing anything else in connection with this IPR?	09:25:16
24	A	No.	09:25:21
25	Q	If you could turn to paragraph 35 of your	09:25:21

1	declaration. And before I ask you that, I just want to	09:25:48
2	clarify, in connection with this IPR or any other IPR,	09:26:01
3	have you reviewed any devices in connection with these	09:26:05
4	matters?	09:26:07
5	A No.	09:26:08
6	Q Okay. So paragraph 35. You see paragraph 35,	09:26:09
7	are you there?	09:26:16
8	A Yes.	09:26:16
9	Q You see paragraph 35 as defining the	09:26:16
10	qualifications of a person of ordinary skill in the art?	09:26:31
11	A Yes.	09:26:34
12	Q Is this the perspective of a person of ordinary	09:26:34
13	skill in the art that you applied in preparing your	09:26:44
14	opinions in this matter and in this declaration?	09:26:46
15	A Yes.	09:26:48
16	Q Is there anything you want to change about this	09:26:48
17	definition as you sit here today?	09:27:08
18	A No.	09:27:09
19	Q Is there anything that's not correct about this	09:27:10
20	definition?	09:27:12
21	A No.	09:27:13
22	Q Is there anything you want to add to it?	09:27:14
23	A No.	09:27:17
24	Q Do you have any reason to believe that	09:27:18
25	Dr. Zalesky's not qualified as an expert in this matter?	09:28:18

1	A	No.	09:28:20
2	Q	When you determined the qualifications of a	09:28:21
3		person of ordinary skill in the art, what factors did you	09:28:35
4		consider?	09:28:38
5	A	Education, years of experience, the type of	09:28:39
6		engineering discipline, being mechanical engineering or	09:28:47
7		related to mechanical engineering.	09:28:50
8	Q	Did you come up with this definition?	09:28:58
9	A	Yes.	09:29:00
10	Q	Did you consider the education level of the	09:29:00
11		inventors of the '012 patent?	09:29:09
12	A	No.	09:29:10
13	Q	Do you know anything about the education level of	09:29:13
14		the inventors of the '012 patent?	09:29:17
15	A	No.	09:29:18
16	Q	If you could turn to paragraphs 20 and 21.	09:29:18
17		That's on page 6. You'll see those two paragraphs fall	09:29:54
18		under the heading, Claim Construction. Do you see that?	09:30:08
19	A	Yes.	09:30:11
20	Q	Is what's set forth in paragraphs 20 and 21 your	09:30:11
21		full understanding of how to construe a patent claim?	09:30:23
22	A	Yes, it represents my understanding.	09:30:26
23	Q	And is -- did you construe the claims of the '012	09:30:42
24		patent based on what's set forth in paragraphs 20 and 21?	09:30:48
25	A	Well, I'm not a lawyer. So I'm not sure that	09:30:54

1	construing the claims is my responsibility in this IPR.	09:31:05
2	Q Did you construe the claims in the '012 patent?	09:31:11
3	A I'm not exactly sure what you mean by that.	09:31:15
4	Q Do you understand the meaning of the claims in	09:31:25
5	the '012 patent?	09:31:29
6	A Yes.	09:31:29
7	Q Do you understand the scope of the claims in the	09:31:36
8	'012 patent?	09:31:38
9	A Yes.	09:31:38
10	Q If you could look at paragraph 21, four lines up	09:31:41
11	from the bottom. Middle of that line, there's the word	09:31:51
12	redefine.	09:31:55
13	A Yes.	09:32:00
14	Q What did you mean by that?	09:32:00
15	A I understand that the patentee can redefine a	09:32:01
16	claim term in either the specification or statements made	09:32:09
17	to the patent office during prosecution. It goes on to	09:32:11
18	talk about... Earlier, it talks about that patentee can	09:32:18
19	act as its own lexicographer to provide a definition that	09:32:32
20	should be applied instead of the plain ordinary meaning.	09:32:41
21	Q Okay. So by redefine, you mean giving a meaning	09:32:44
22	of a term that's different than its plain and ordinary	09:32:48
23	meaning; is that right?	09:32:50
24	A That's how I understand it.	09:32:51
25	Q And do you believe in understanding the meaning	09:32:56

1	of the claims in the '012 patent that the patentee has	09:33:09
2	redefined any terms different from their plain and	09:33:14
3	ordinary meaning?	09:33:18
4	MR. STOWELL: Objection. Vague. Compound.	09:33:20
5	THE WITNESS: Well, I know the term filament is the --	09:33:21
6	is being defined as given definition by the patentee.	09:33:53
7	BY MR. HAMILTON:	09:33:59
8	Q And that definition is different from its plain	09:34:00
9	and ordinary meaning; is that right?	09:34:02
10	A I'm not sure.	09:34:03
11	Q Do you understand the plain and ordinary meaning	09:34:05
12	of the term filament?	09:34:08
13	A I think it's important to how it relates to the	09:34:11
14	patent since they're construing it to mean something	09:34:16
15	specific to the patent.	09:34:20
16	Q So does the patent use the term filament	09:34:23
17	according to its plain and ordinary meaning?	09:34:33
18	A I'm not sure.	09:34:35
19	Q In the field of -- in the medical field, does the	09:34:42
20	term filament have an understood meaning?	09:34:57
21	A Well, I've used the term filament for certain	09:35:00
22	pull lines. So I think there's a -- is used in the field.	09:35:33
23	Q And when that term's used in the field, what does	09:35:39
24	it mean?	09:35:43
25	A Well, when I use the term for some products that	09:35:43

1	I worked in, on, it was used for pull lines to curb a	09:35:49
2	catheter.	09:35:56
3	Q So I understand you've used it for something, but	09:36:03
4	what does the term mean when you've used that term?	09:36:06
5	MR. STOWELL: Objection. Asked and answered.	09:36:09
6	THE WITNESS: In my case, it was for a tensioning	09:36:10
7	mechanism to pull the tip of a catheter to create a curve.	09:36:18
8	We called it a fiber or a filament or a cable.	09:36:29
9	BY MR. HAMILTON:	09:36:32
10	Q So are you saying the term filament means a	09:36:37
11	tensioning mechanism to pull the tip of a catheter to	09:36:40
12	create a curve?	09:36:43
13	MR. STOWELL: Objection. Misstates testimony.	09:36:44
14	THE WITNESS: I'm saying we use the term for the	09:36:45
15	component that was used to perform that action.	09:36:47
16	BY MR. HAMILTON:	09:36:50
17	Q So when you used the term filament for that	09:37:02
18	component, what was your understanding of the meaning of	09:37:05
19	the term filament?	09:37:08
20	A Well, the meaning to us was the tensioning member	09:37:10
21	that we were using in the catheter.	09:37:18
22	Q Was that tensioning member flexible?	09:37:27
23	A It definitely had flexibility.	09:37:30
24	Q Could it conform to different shapes?	09:37:34
25	MR. STOWELL: Objection. Vague.	09:37:40

1 THE WITNESS: It certainly depends on the shape it was
2 trying to go through. Depending on the diameter of the
3 cable we were using, for instance.

4 BY MR. HAMILTON:

5 Q So in the context in which you were using it,
6 could that filament conform to different shapes?

7 MR. STOWELL: Objection. Vague.

8 THE WITNESS: The context we were using it in the pull
9 line, it had to make a tight bend at the tip to be
10 attached to a tip ring. So it was conforming to a tight
11 bend at the tip.

12 BY MR. HAMILTON:

13 Q So in the medical field generally, does the term
14 filament mean one or more threads, lines, cords, ropes,
15 ribbons, flat wire, sheets or tapes?

16 A Can you point me to where that statement is?

17 Q What do you mean where that statement is?

18 A The line you're reading from.

19 Q I'm reading your definition of the term filament
20 in this patent.

21 A Can you point me to that paragraph?

22 Q Sure.

23 That's paragraph 48.

24 A Can you repeat the question? Sorry.

25 Q So in the medical field generally, does the term

09:37:41

09:37:49

09:37:58

09:37:59

09:38:00

09:38:04

09:38:09

09:38:11

09:38:19

09:38:22

09:38:28

09:38:29

09:38:40

09:38:44

09:38:48

09:38:52

09:38:59

09:39:03

09:39:07

09:39:10

09:39:11

09:39:14

09:39:16

09:39:32

09:39:37

1 filament mean one or more threads, lines, cords, ropes,
2 ribbons, flat wires, sheets, or tape -- tapes? Excuse me.

3 A Certainly, the component that I'm thinking about
4 relating to the project I'm thinking about would have
5 fallen under the category of line, cord, possibly flat
6 wire.

7 Q Was it thin?

8 MR. STOWELL: Objection. Vague.

9 THE WITNESS: It was a diameter that would fit through
10 the aluminum of the catheter which was a fairly small
11 lumen for the cord to fit through.

12 BY MR. HAMILTON:

13 Q So compared to its length, it was relatively
14 thin, correct?

15 A Yes. It was relatively thin compared to its 3-
16 or 4-foot length we were using.

17 Q And I believe you've already said it was also
18 flexible for the application; is that right?

19 A It was flexible enough to perform the actions
20 that we needed it to in the application.

21 Q And those actions were to conform to different
22 shapes or bend so to speak through a -- as it's inserted;
23 is that right?

24 A Less important for that. We chose its mechanical
25 characteristics such that it could make a bend at the tip

1	so it could be inserted and attached to a metal ring at	09:41:30
2	the tip. So that was the -- that's the location where the	09:41:36
3	flexibility was needed.	09:41:40
4	Q So you said less important. But still that was	09:41:42
5	the -- the component you're talking about was flexible,	09:41:44
6	correct?	09:41:50
7	A Yes. I would consider it a flexible cable is	09:41:50
8	what we're using.	09:42:04
9	Q If you could turn to Exhibit 1001, that's the	09:42:05
10	'012 patent. I want to talk about Claim 1 which is on	09:42:27
11	Column 22, page 30. Do you understand the meaning of	09:42:39
12	Claim 1?	09:42:54
13	A Yes.	09:42:54
14	Q Do you understand the meaning of the individual	09:42:58
15	words and phrases used in Claim 1?	09:43:03
16	A I believe so.	09:43:07
17	Q Do you understand the scope of Claim 1?	09:43:08
18	A Yes.	09:43:10
19	Q Okay. So let's talk first about the very last	09:43:13
20	line, Reducing a diameter of the loop. Do you see that?	09:43:20
21	A Yes.	09:43:24
22	Q What does that mean?	09:43:27
23	A Well, as it reads, The first actuator in a	09:43:28
24	direction that pulls the first end portion such that the	09:43:58
25	diameter of the valve lumen decreases in response to	09:44:00

1	reducing a diameter of the loop.	09:44:03
2	Q Okay. So I see you've read the claim again.	09:44:05
3	What does reducing a diameter of the loop mean?	09:44:12
4	MR. STOWELL: Objection. Asked and answered.	09:44:14
5	THE WITNESS: It means decreasing the size of the	09:44:15
6	loop.	09:44:23
7	BY MR. HAMILTON:	09:44:24
8	Q Does it mean decreasing the size of the loop in	09:44:37
9	any particular way?	09:44:39
10	A As the at least first end is pulled, it results	09:44:40
11	in the diameter of the valve lumen decreasing because the	09:44:53
12	diameter of the loop is decreasing.	09:44:59
13	Q So let's just break that down a little bit. So	09:45:06
14	the claim says reducing, and you said decreasing. So	09:45:09
15	reducing is decreasing; is that correct?	09:45:11
16	A I think they're similar.	09:45:13
17	Q Does reducing mean decreasing in this phrase?	09:45:18
18	A They seem the same to me.	09:45:24
19	Q And then the phrase says, Reducing in diameter,	09:45:30
20	and you said, Decreasing the size. Does size mean	09:45:38
21	diameter in this claim -- excuse me, diameter means size	09:45:42
22	in this phrase?	09:45:47
23	A They seem similar to me.	09:45:47
24	Q Is there any other way to decrease the size of	09:45:52
25	the loop other than decreasing its diameter?	09:45:55

1	A	Decrease the circumference, you know, decrease	09:45:57
2		the area. That decreases the diameter.	09:46:04
3	Q	So is the only way to decrease the size of a loop	09:46:08
4		decreasing the diameter?	09:46:16
5	MR. STOWELL:	Objection. Outside the scope.	09:46:18
6	THE WITNESS:	I think that the size of a loop can be	09:46:19
7		decreased by decreasing the circumference which decreases	09:46:27
8		the diameter, decreases the area. They're all similar	09:46:33
9		actions to me.	09:46:36
10	BY MR. HAMILTON:		09:46:37
11	Q	So if a loop decreases in size, does the diameter	09:46:37
12		always decrease?	09:46:40
13	A	It seems like the circumference and the area and	09:46:41
14		the diameter would necessarily decrease.	09:47:05
15	THE STENOGRAPHIC REPORTER:	I'm sorry. Would or	09:47:10
16		wouldn't necessarily decrease?	09:47:11
17	THE WITNESS:	Would necessarily decrease.	09:47:12
18	THE STENOGRAPHIC REPORTER:	Thank you.	09:47:13
19	BY MR. HAMILTON:		09:47:14
20	Q	Does diameter imply any particular shape?	09:47:22
21	A	Typically, one would think of diameter through a	09:47:27
22		true circle, but I also understand that diameter is used	09:47:38
23		as a measurement for things that are not true circles.	09:47:42
24	Q	What other things are not true circles that would	09:47:48
25		have a diameter?	09:47:50

1 A I know that the term is used for diameter of a
2 tree, let's say, after the tree is felled. It's not a
3 true circle. A tree trunk wouldn't be. I know diameter's
4 used as a measurement for an egg, which is probably not a
5 true circle either.

6 I've used diameter as a -- talking about an
7 ellipse, a minor axis and a major axis of ellipse, a major
8 diameter and minor diameter of an ellipse for a catheter
9 that I worked on some years ago that was elliptical in
10 shape.

11 Q So to break that up a little bit, irregular
12 circles would be one example of something that would have
13 a diameter, is that right, that would be your tree trunk
14 example for one?

15 A Yeah. It's not a true circle from a geometric
16 standpoint.

17 Q Another example you said an oval. So an oval
18 would have different diameters depending on where you are
19 along the circumference; is that right?

20 MR. STOWELL: Objection. Misstates testimony.

21 THE WITNESS: Well, I believe I said an ellipse, which
22 has a minor diameter and major diameter, is a term
23 that's -- that we've used anyway -- I've used anyway.
24 Excuse me.

1	BY MR. HAMILTON:	09:49:54
2	Q What's an ellipse?	09:49:58
3	A An ellipse is an elongated circle.	09:49:59
4	Q Okay. And let's go back to the phrase, Reducing	09:50:28
5	a diameter of the loop. We talked about reducing. We	09:50:31
6	talked about diameter. And you said -- you used the word	09:50:34
7	loop. What is looping in that phrase?	09:50:39
8	A The feature of the constricting mechanism that is	09:50:41
9	formed around the collapsible tubular sidewall.	09:50:56
10	Q So if there's anything formed around the	09:51:07
11	collapsible sidewall, it's a loop, or does the loop imply	09:51:09
12	something specific?	09:51:13
13	MR. STOWELL: Objection. Compound.	09:51:14
14	THE WITNESS: I'm using loop as it's used in Claim 1,	09:51:15
15	that is the constricting mechanism that is looped at least	09:51:29
16	partially around the tubular sidewall.	09:51:35
17	BY MR. HAMILTON:	09:51:43
18	Q So when you say looped, what do you mean looped	09:51:43
19	partially around, what does looped mean?	09:51:46
20	A Well, I interpret loop to mean at least partially	09:51:48
21	surrounding the tube. The tubular sidewall in this	09:52:13
22	example.	09:52:17
23	Q Is the word loop in Claim 1 a noun or a verb or	09:52:17
24	something else?	09:53:31
25	A In Claim 1, it's shown two times, and I believe	09:53:33

1 it's a noun in both times. First filament formed into a 09:54:03
2 loop around the collapsible tubular sidewall. And toward 09:54:08
3 the end of Claim 1, Reducing a diameter of the loop. So I 09:54:12
4 believe it's a noun in both cases. 09:54:19

5 Q Okay. So let's talk about that phrase you just 09:54:21
6 mentioned, First filament formed into a loop. What does 09:54:34
7 that phrase mean in Claim 1. And let me see if I can make 09:54:47
8 it a little easier for you. 09:54:55

9 You've defined filament that's in your 09:54:56
10 declaration. So please use the word filament. I don't 09:55:00
11 want to focus on that. What I want to focus on is formed 09:55:02
12 into a loop. What does that mean? 09:55:06

13 A In the context of Claim 1, it's formed into a 09:55:12
14 loop around the collapsible tubular sidewall. So it is at 09:55:15
15 least partially wrapped, at least partially surrounding 09:55:22
16 the tubular sidewall. 09:55:29

17 Q Does it conform to the shape of the tubular 09:55:32
18 sidewall? 09:55:35

19 A Doesn't say that here. I would presume that it 09:55:35
20 would if it had sufficient flexibility to do so. 09:55:53

21 Q What does tubular mean in tubular sidewall? 09:55:56

22 A This is the collapsible member that the filament 09:56:25
23 surrounds in order to actuate the valve. 09:56:41

24 Q Does tubular imply a particular shape in Claim 1? 09:56:48

25 A It implies a tube to me. 09:56:52

1	Q	What's a tube?	09:57:00
2	A	A single lumen hollow member.	09:57:01
3	Q	Would that single lumen hollow member have a	09:57:13
4		particular shape to be tubular?	09:57:26
5	A	Generally, they would be circular.	09:57:27
6	Q	Could they be any other shape?	09:57:38
7	A	I'm sure there are tubes that are not circular.	09:57:41
8		I do remember working with hypotubes that we flattened to	09:57:46
9		have a more oval shape, and now we still call those	09:57:52
10		hypotubes or tubes.	09:57:58
11	THE STENOGRAPHIC REPORTER:	You said hypo?	09:57:59
12	THE WITNESS:	Hypo, h-y-p-o, tube.	09:58:02
13	THE STENOGRAPHIC REPORTER:	Thank you.	09:58:05
14	BY MR. HAMILTON:		09:58:22
15	Q	And in all those examples, would the tubular	09:58:29
16		member have a circumference?	09:58:43
17	A	Yes.	09:58:45
18	Q	So we're not talking about partial tubes, say	09:58:50
19		like a channel. We're talking about something that is --	09:59:04
20		has a sidewall that is 360 degrees; is that right?	09:59:06
21	A	That's my understanding from the specification in	09:59:11
22		the patent that that is what's taught in the patent.	09:59:16
23	Q	And then if you look at that phrase again, A	09:59:18
24		first filament formed into a loop, you see the word around	09:59:36
25		the collapsible tubular sidewall. What does around mean?	09:59:42

1	A	At least partially surrounding.	09:59:47
2	Q	So around does not mean around the entire tube,	09:59:58
3		tubular sidewall?	10:00:02
4	A	I don't think it's required to be around the	10:00:02
5		entire circumference.	10:00:11
6	Q	So then is it fair to say you've interpreted the	10:00:13
7		term around to mean partially surrounding; is that right?	10:00:41
8	MR. STOWELL:	Objection. Misstates testimony.	10:00:48
9	THE WITNESS:	The patent certainly doesn't -- or the	10:00:49
10		claim certainly doesn't say that it is completely around	10:00:57
11		or completely wrapped around the circumference. And the	10:01:00
12		patent certainly gives examples, like in Figure 8, where	10:01:05
13		the filament is, you know, partially looped. Looped	10:01:12
14		partially. Not around -- around the tubular member, not	10:01:21
15		in a circle around the entire circumference.	10:01:25
16	BY MR. HAMILTON:		10:01:27
17	Q	So I see you're pointing to Figures 8 and 9 as	10:01:28
18		you're making that statement. Is that right?	10:01:32
19	A	I was referring to Figure 8 in the '012 patent,	10:01:34
20		yes.	10:01:39
21	Q	Okay. And then when you say partially around,	10:01:39
22		you're referring to one of the two separate members shown	10:01:43
23		in Figure 8; is that correct?	10:01:50
24	A	Given this is an example of where the	10:01:51
25		sub-filament 150-A is shown as partially surrounding.	10:02:02

1	Q	And does the patent say that that -- you	10:02:12
2		described it as a sub-filament. Does that patent describe	10:02:15
3		that sub-filament as a loop?	10:02:19
4	A	I think the patent describes this embodiment as	10:02:21
5		the filament 150 in Figure 8.	10:02:42
6	Q	Does the patent describe the sub-filament as a	10:02:47
7		loop?	10:02:51
8	A	I believe the patent describes each of the pieces	10:02:51
9		or a portion of the sub-filament, the curved portion as a	10:02:58
10		bight.	10:03:05
11	Q	Right. So the patent uses the term bight for	10:03:05
12		that sub-filament and that shape; is that right?	10:03:09
13	A	They use the term bight for the portion that	10:03:10
14		curves. Portion of each of the two sub-filaments that	10:03:16
15		curves, I believe.	10:03:22
16	Q	And that's the portion that's supposed to be	10:03:23
17		around the collapsible tubular sidewall, correct, in that	10:03:25
18		figure?	10:03:30
19	A	Yes.	10:03:30
20	Q	So to be clear, the patent doesn't refer to that	10:03:35
21		portion around the tubular sidewall in that figure as a	10:03:42
22		loop, does it?	10:03:45
23	A	I believe they call that portion a bight.	10:03:46
24	Q	Does the patent refer to any other embodiments as	10:03:51
25		a loop?	10:04:00

1	A	I don't recall.	10:04:00
2	Q	Why don't you turn to Figures 6 and 7.	10:04:04
3	A	Mm-hmm.	10:04:18
4	Q	Do you understand what's shown in Figures 6 and	10:04:19
5		7?	10:04:20
6	A	Yes.	10:04:21
7	Q	Do you understand the patent as referring to	10:04:22
8		what's shown in Figure 7 as loops?	10:04:27
9	A	I believe they use that term, yes.	10:04:29
10	Q	Okay. So to be clear, the patent uses the term	10:04:33
11		loops referring to Figure 6 and 7 but uses the term bight	10:04:37
12		with respect to Figures 8 and 9; is that correct?	10:04:41
13	A	Once again, I believe they use the term bight	10:04:43
14		only to refer to the curved portion of each of those	10:04:52
15		sub-filaments.	10:04:57
16	Q	And that's the portion that is around the	10:04:58
17		collapsible tubular sidewall, correct?	10:05:01
18	A	Labeled as 800-A and -- I'm sorry, 800-A and	10:05:02
19		800-B. Yes.	10:05:07
20	Q	Does the patent refer to anything shown in	10:05:11
21		Figure 8 or Figure 9 as a loop?	10:06:06
22	A	I believe they use the term bight. It seems to	10:06:07
23		me that each -- each of them is a loop, and this portion	10:06:20
24		is -- is referred to as a bight.	10:06:24
25	Q	So you've ascribed the term loop to those two	10:06:27

1 figures, but the patent doesn't use the term loop to 10:06:33
2 describe anything in those two figures, correct? 10:06:36

3 MR. STOWELL: Objection. Compound. 10:06:38

4 THE WITNESS: Yeah, I believe the patent uses the term 10:06:39
5 bight for the Figures 8 and 9. 10:06:45

6 BY MR. HAMILTON: 10:06:47

7 Q So let's turn back to Claim 1. So you had said 10:07:08
8 the term loop in this claim is used twice, and it's a noun 10:07:24
9 in both instances, correct? 10:07:28

10 A In the first instance, a first filament formed 10:07:29
11 into a loop around the collapsible tubular sidewall. So 10:07:39
12 it's formed into a loop shape. I might add that word. 10:07:48
13 So... I guess it's -- I guess it's a noun. Same at the 10:07:53
14 end, reducing a diameter of the loop would be a noun. 10:08:00

15 Q So that first phrase, a first filament formed 10:08:04
16 into a loop, means the filament has the shape of a loop, 10:08:13
17 correct? 10:08:17

18 A A first filament formed into a loop would have 10:08:17
19 the shape of a loop. 10:08:25

20 Q And then that second phrase, reducing the 10:08:25
21 diameter of a loop, means that you would have to reduce 10:08:28
22 the diameter of the shape that the filament is formed 10:08:30
23 into, correct? 10:08:33

24 A Yes. 10:08:34

25 Q And would that filament have to be flexible to 10:08:40

1	reduce in diameter?	10:08:45
2	A It would certainly need some level of flexibility	10:08:46
3	at the sizes we're talking about.	10:08:57
4	Q So for Claim 1, the filament must be flexible; is	10:09:00
5	that correct?	10:09:14
6	A I think for any of these designs to work, that	10:09:14
7	the filament member would need some level of flexibility.	10:09:28
8	Q And it has to be flexible to be able to reduce in	10:09:33
9	diameter, correct?	10:09:38
10	A I think I said it would need some level of	10:09:38
11	flexibility in order to change shape and reduce in	10:09:43
12	diameter.	10:09:46
13	Q So let's just rephrase that. So it would have to	10:09:46
14	be flexible enough to reduce in diameter, correct?	10:09:54
15	A It would have to be flexible enough to reduce in	10:09:56
16	diameter depending on the stiffness of the tube that's	10:10:03
17	compressing the strength of the springs. The	10:10:09
18	characteristics of the filament itself would all play into	10:10:16
19	the level of flexibility. Everything has some level of	10:10:24
20	flexibility. So... there's a -- it's a relative	10:10:29
21	flexibility we're talking about.	10:10:32
22	Q And let's just explore that for a second. So	10:10:33
23	that level of flexibility, in this context of a hemostasis	10:10:37
24	valve for an aspiration catheter, one skilled in the art	10:10:42
25	would be able to determine what that level of flexibility	10:10:45

1	is, wouldn't they?	10:10:47
2	MR. STOWELL: Objection. Vague.	10:10:49
3	THE WITNESS: I think a person skilled in the art	10:10:52
4	would be able to engineer the right balance of material	10:10:57
5	properties for the filament, the compression tube, or	10:11:03
6	tubular sidewall, the springs, et cetera, in order to make	10:11:08
7	the design work well.	10:11:12
8	BY MR. HAMILTON:	10:11:15
9	Q If you look in Claim 1B -- excuse me, A, you see	10:11:31
10	the phrase, A collapsible tubular sidewall. Do you see	10:12:18
11	that?	10:12:21
12	A Yes.	10:12:21
13	Q Would that collapsible tubular sidewall need to	10:12:22
14	be pliable in order to collapse?	10:12:34
15	A Yes. It would have to have a certain amount	10:12:36
16	of... pliability, compressibility in order to collapse.	10:12:53
17	Q What does pliability mean?	10:13:00
18	A The ability to deform.	10:13:02
19	Q Let's look at Column 13, and I'm going to ask you	10:13:12
20	about line 60 of Exhibit 1001. So if you need a moment,	10:13:44
21	feel free to read that paragraph or whatever else --	10:13:55
22	A Line 6-0?	10:14:00
23	Q Line 6-0, yes.	10:14:02
24	A Okay.	10:14:03
25	Q What does the word overlap mean in line 60?	10:15:34

1 A I believe it's relating to the fact that there's 10:15:42
2 an interlocking of the two components 800 -- no, 150-A and 10:15:55
3 150-B as opposed to them being just parallel to each 10:16:05
4 other. 10:16:11

5 Q So would it be fair to say as shown in -- and 10:16:11
6 again, you are again referring to Figures 8 and 9 there, 10:16:23
7 correct, as you were making that description in your 10:16:26
8 answer? 10:16:28

9 A I need to revise my answer. In line 60, they're 10:16:28
10 not talking about the interlocking that I just mentioned. 10:16:37
11 Sorry. Can you repeat the question? 10:16:41

12 Q What does overlap mean in that sentence? 10:16:43

13 A That the two sub-filaments -- going to use that 10:16:46
14 term -- they overlap or work together to define the 10:17:03
15 encircled area 114 -- sorry, 814, where the tubular member 10:17:17
16 is located. 10:17:22

17 Q And what... would it be fair to say that overlap 10:17:26
18 means that if you drew a cross-section perpendicular to 10:17:42
19 the lumen that's going through those two filaments, you 10:17:49
20 would have an encircled area where the entire 10:17:55
21 circumference has some portion of the filament? 10:17:58

22 MR. STOWELL: Objection. Vague. 10:18:03

23 THE WITNESS: I'm not sure I understand the 10:18:04
24 cross-section part of your question. 10:18:11
25

1 BY MR. HAMILTON:

10:18:13

2 Q Could you draw a cross-section -- withdraw the
3 question.

10:18:14

10:18:21

4 Is it your understanding that a lumen would, in
5 that embodiment shown in Figure 8, be contained within the
6 encircled area?

10:18:21

10:18:27

10:18:31

7 A Yes. It would reside as shown in Figure 8 and
8 the area labeled 814. Which they call the encircled area.

10:18:33

10:18:41

9 Q And if you drew a -- or made a cross-section of
10 that lumen perpendicular to the axis of the lumen, could
11 you have a cross-section that would include at least some
12 portion of each of the two sub-filaments?

10:18:50

10:18:54

10:18:58

10:19:03

13 MR. STOWELL: Objection. Vague.

10:19:12

14 THE WITNESS: In Figure 8, probably. But they also in
15 the specification talk about how Figure 8, that the two
16 sub-filaments 150-A and 150-B don't necessarily need to
17 interlock. They could be parallel. So you could draw a
18 perpendicular line in between the two and just catch the
19 tube member and not the filament members.

10:19:13

10:19:22

10:19:27

10:19:34

10:19:37

10:19:40

20 BY MR. HAMILTON:

10:19:43

21 Q So in that instance, if you drew -- if they were
22 not interlocked, you could not draw a cross-section that
23 included some portion of both filaments, correct?

10:19:43

10:19:45

10:19:50

24 A If it were angled, I think you could catch some
25 portion of both filaments.

10:19:53

10:20:03

1	Q	So --	10:20:03
2	A	Depends on the location of the filaments relative	10:20:05
3		to each other, how close they are, how perpendicular you	10:20:07
4		want to draw the line, plane...	10:20:13
5	Q	And would you have a continuous portion of each	10:20:23
6		of the sub-filaments together that would form a continuous	10:20:25
7		circumference around the lumen in that instance?	10:20:31
8	MR. STOWELL:	Objection. Vague.	10:20:36
9	THE WITNESS:	If the two filaments 150-A and 150B were	10:20:37
10		interlocking as shown in Figure 8, is that your question?	10:20:47
11	BY MR. HAMILTON:		10:20:52
12	Q	If they were, you certainly could, correct?	10:20:52
13	MR. STOWELL:	Same objection.	10:20:56
14	THE WITNESS:	Can you repeat the question? So you're	10:20:57
15		assuming you're interlocked in Figure 8...	10:21:03
16	BY MR. HAMILTON:		10:21:05
17	Q	Well, I'm not assuming. Figure 8 shows them	10:21:05
18		interlocked, doesn't it?	10:21:08
19	A	Yes. But the patent provides that as an option,	10:21:09
20		but...	10:21:13
21	Q	Okay. So for Figure 8, with them interlocked,	10:21:13
22		you can draw a perpendicular cross-section of the tubular	10:21:16
23		member that is -- that would go through the encircled area	10:21:21
24		in Figure 8 that would include filament along the entire	10:21:24
25		circumference of the lumen, correct?	10:21:30

1 A If the two filaments were touching each other as
2 shown in Figure 8, geometrically, I believe that would be
3 correct. These are defined as flexible filaments that may
4 or may not be sitting next to each other on an actual
5 product. This is a representation. In this
6 representation, if it were in this position, I guess that
7 would be true.

8 Q Okay. So as shown in Figure 8, that statement's
9 true, correct?

10 MR. STOWELL: Objection. Asked and answered.

11 THE WITNESS: You know, I'd have to model it in 3-D to
12 see if you could really do that. If depends on the size
13 of the cut. It depends on the size of the filaments. If
14 they're really sitting next to each other, I'm not sure.

15 BY MR. HAMILTON:

16 Q And you had said the filaments in practice would
17 be flexible, and you don't know how they would be sitting
18 in there, is that correct, in a real-life device?

19 A These are drawn as you could say rigid members.
20 It could be a rigid wire shown here. It's hard to draw
21 something that has, you know, a flexible nature. So it's
22 hard to determine that.

23 Q So from that figure you can't tell whether that's
24 flexible or not, correct?

25 A One would need to know the dimensions and the

1	material properties and the definition of flexible to	10:23:23
2	determine -- to say if it's flexible, flexible relative to	10:23:30
3	something else.	10:23:34
4	Q So let's -- when we use the term flexible for the	10:23:35
5	rest of today, let's use that as capable of reducing in	10:23:38
6	diameter as we just discussed with respect to a filament	10:23:43
7	that's formed into a loop in that context, in the context	10:23:47
8	of this patent and the claims. Is that fair?	10:23:50
9	MR. STOWELL: Objection. Vague. Misstates testimony.	10:23:53
10	THE WITNESS: In the context of assume sizes for a	10:23:55
11	rotating hemostatic valve, some level of flexibility would	10:24:07
12	be required to wrap around a tubular member.	10:24:16
13	BY MR. HAMILTON:	10:24:21
14	Q And you understand as a person of skill in the	10:24:21
15	art -- or excuse me, a person of ordinary skill in the art	10:24:24
16	in 2017 would understand what that level of flexibility	10:24:26
17	would be, wouldn't they?	10:24:29
18	A I think they could figure it out with other	10:24:30
19	constraints of knowing the spring tension, the tubular	10:24:37
20	member, size and stiffness, and other parameters probably.	10:24:43
21	Q Okay. So let's say those two sub-filaments, as	10:24:49
22	you refer to them, are made of a string. And you had said	10:24:56
23	you're not sure where their orientation would be in an	10:25:01
24	actual device; is that correct?	10:25:04
25	MR. STOWELL: Objection. Misstates testimony.	10:25:06

1	THE WITNESS: Yes, if these were a very flexible	10:25:07
2	string, and the buttons were compressed such that it's in	10:25:14
3	the expanding configuration, it's kind of unknown. It's	10:25:26
4	unlikely that they would have the shape shown here of --	10:25:31
5	which are perfectly straight lines and perfectly partial	10:25:36
6	circle on the bight area.	10:25:40
7	BY MR. HAMILTON:	10:25:41
8	Q And you had said unknown. You wouldn't know what	10:25:42
9	shape they would take, would you?	10:25:45
10	A Probably not without knowing the rest of the	10:25:46
11	parameters and building prototype devices.	10:25:53
12	Q So focusing on Figure 8, you see this line 60, it	10:25:57
13	says, the two sub-filaments as you refer to them, 808-A	10:26:18
14	and 808-B overlap and define an encircled area.	10:26:23
15	A Yes.	10:26:30
16	Q For that encircled area does that mean you could	10:26:31
17	draw a circumference completely around an area touching a	10:26:33
18	filament -- withdraw the question.	10:26:39
19	What is an encircled area?	10:26:42
20	A I think in terms of this patent, it's the area	10:26:44
21	encompassed by these two sub-filaments in Figure A.	10:26:52
22	Q Does encircled have any meaning to you?	10:26:56
23	A Wrapped around.	10:27:02
24	Q Does it use the word circle, does encircled	10:27:14
25	relate to the word circle?	10:27:21

1	A	Encircle does use the word circle.	10:27:22
2	Q	And does encircled mean you can find a circle, if	10:27:24
3		something is encircled, there's a circle around something?	10:27:28
4	A	My opinion is I'm not -- that's not necessary.	10:27:31
5		Still be wrapping around an irregularly shaped object,	10:27:37
6		could be encircled also.	10:27:41
7	Q	So your issue is the shape could be irregular.	10:27:42
8		So it's not a perfect circle. It could be an irregular	10:27:48
9		circle; is that right?	10:27:51
10	A	It could be not a perfect circle and still be	10:27:53
11		encircled.	10:27:58
12	Q	And to be encircled, it has to have a continuous	10:27:58
13		circumference; is that a correct?	10:28:01
14	MR. STOWELL:	Objection --	10:28:03
15	THE WITNESS:	Not sure. I don't know about that.	10:28:05
16	BY MR. HAMILTON:		10:28:06
17	Q	How could you encircle something without a	10:28:06
18		continuous circumference?	10:28:09
19	A	I think you need a term -- a qualifying term of	10:28:10
20		partially encircled which would be partially wrapped.	10:28:24
21		Fully encircled would imply completely around a	10:28:29
22		circumference of a shape.	10:28:34
23	Q	Does Figure 8 show partially encircled or	10:28:34
24		completely encircled?	10:28:40
25	A	I would say Figure 8 shows complete encirclement	10:28:43

1	of -- doesn't show any other member, but what should --	10:28:52
2	could show the tubular member.	10:28:58
3	Q It's an encircled area at least; is that right?	10:29:00
4	A Yes.	10:29:03
5	Q And an encircled area would require a complete	10:29:07
6	encirclement, wouldn't it?	10:29:15
7	A Seems so.	10:29:16
8	Q So earlier, you had said that the patent	10:29:18
9	describes an alternative embodiment to Figure 8 where the	10:29:31
10	two sub-filaments are side by side and not interlocked.	10:29:36
11	Do you recall that?	10:29:43
12	A I believe that's in the description of Figure 8	10:29:43
13	or description of this bight type embodiment.	10:29:50
14	Q But that's not shown in Figure 8, is it?	10:29:55
15	A It shows an interlocking of the two	10:29:59
16	sub-filaments.	10:30:08
17	Q And just to be clear, Figure 8 and Figure 9 is	10:30:08
18	the same two interlocked sub-filaments just in different	10:30:12
19	positions, correct?	10:30:16
20	A That's how I understand it.	10:30:17
21	MR. HAMILTON: I'm going to move to another topic.	10:30:23
22	Why don't we take a break.	10:30:50
23	MR. STOWELL: Okay.	10:30:52
24	THE VIDEOGRAPHER: We are going off the record at	10:30:53
25	1030.	10:30:54

1	(Recess taken.)	10:40:54
2	THE VIDEOGRAPHER: We are back on the record at 1040.	10:40:54
3	BY MR. HAMILTON:	10:40:57
4	Q Do you understand you're still under oath?	10:41:02
5	A Yes.	10:41:03
6	Q Did you communicate with anybody during the break	10:41:04
7	regarding your deposition today?	10:41:07
8	A No.	10:41:09
9	Q Did you review any documents during the break?	10:41:10
10	A No.	10:41:14
11	Q If you could look at Exhibit 1001, it's page 20,	10:41:15
12	Column 2, line 23. And you'll see in that line the	10:41:26
13	phrase, Active tensioning mechanism is used. And my	10:41:43
14	question to you is: What does that phrase mean, active	10:41:49
15	tensioning mechanism as it's used in the '012 patent?	10:41:53
16	MR. STOWELL: Objection. Outside the scope.	10:42:01
17	THE WITNESS: Yes, I interpret it to mean it's the	10:42:02
18	actuation of the tensioning mechanism -- manual actuation	10:42:35
19	of the tensioning mechanism that's covered in this '012	10:42:39
20	patent.	10:42:43
21	BY MR. HAMILTON:	10:42:43
22	Q So you understand the term active to mean manual?	10:42:47
23	A In the context of this patent, that's how I'm	10:42:50
24	reading that sentence.	10:42:55
25	Q So active is the act of the user manually	10:42:56

1	operating the device. Is that fair?	10:43:01
2	A Includes an active tensioning mechanism. So I	10:43:04
3	think it would have to be manually activated by the user.	10:43:19
4	Q And what about tensioning, what does that mean in	10:43:24
5	that phrase?	10:43:38
6	MR. STOWELL: Objection. Outside the scope.	10:43:40
7	THE WITNESS: Well, this is giving a summary of the	10:43:41
8	invention shown in '012 where it's talked about many times	10:43:55
9	that there's a tensioning mechanism within the hemostatic	10:44:00
10	valve.	10:44:10
11	BY MR. HAMILTON:	10:44:10
12	Q So what does tensioning mean?	10:44:10
13	A To add force, to add tension to a member.	10:44:12
14	Q Does that require any particular type of member?	10:44:22
15	MR. STOWELL: Objection. Vague.	10:44:27
16	THE WITNESS: I don't believe so.	10:44:29
17	BY MR. HAMILTON:	10:44:30
18	Q How does one -- so withdraw the question. So you	10:44:36
19	had said to add force, to add tension to a member. Is	10:44:48
20	tension interchangeable with force?	10:44:51
21	A In general, I think.	10:45:01
22	Q Is tension a force in a particular direction?	10:45:02
23	A Yeah. It's opposite of compression. So... a rod	10:45:07
24	that's in tension is being pulled on each end.	10:45:14
25	(Indiscernible utterance) A rod that's in compression is	10:45:19

1	being pushed on each end.	10:45:20
2	THE STENOGRAPHIC REPORTER: I'm sorry. I didn't	10:45:20
3	understand that. Please repeat that last part.	10:45:21
4	THE WITNESS: A rod that's in tension is pulled on	10:45:22
5	each end versus a rod that's in compression would be	10:45:30
6	pushed on each end.	10:45:36
7	THE STENOGRAPHIC REPORTER: Thank you.	10:45:40
8	BY MR. HAMILTON:	10:45:40
9	Q So for tension in a tensioning mechanism, would	10:45:54
10	you need to pull on each end in opposite directions?	10:46:05
11	MR. STOWELL: Objection. Vague.	10:46:20
12	THE WITNESS: In the context of this patent, I believe	10:46:21
13	some of the embodiments have a single tensioning mechanism	10:46:33
14	as shown in Figure 5. Such that you're pulling on one end	10:46:48
15	in that case.	10:46:51
16	BY MR. HAMILTON:	10:46:52
17	Q And for Figure 5, is there any force exerted on	10:46:53
18	the other end in the other direction?	10:46:58
19	A Not by a user. It would be attached to the -- I	10:46:59
20	guess it's housing. Not sure what the number is, but...	10:47:08
21	Q So the other end in Figure 5 of the filament in	10:47:13
22	Figure 5 -- withdraw the question.	10:47:17
23	Is there a filament shown in Figure 5?	10:47:19
24	A It's labeled as 150.	10:47:21
25	Q And does that filament have two ends?	10:47:26

1	A	Yes.	10:47:31
2	Q	And is one end attached to a moveable button?	10:47:35
3	A	Yes.	10:47:42
4	Q	And is the other end attached to the housing of	10:47:44
5		the device?	10:47:50
6	A	Yes.	10:47:50
7	Q	So for tension to occur in that filament, there	10:47:51
8		is a force in opposite directions on that filament,	10:47:56
9		correct?	10:48:04
10	A	Yes. If you looked at a free body diagram of the	10:48:04
11		filament, you would have a force also on the end that's	10:48:17
12		attached to the housing.	10:48:22
13	Q	And I guess to be clear, they wouldn't have to be	10:48:23
14		in opposite directions, but it would have to be in	10:48:26
15		different directions to put tension on a member; is that	10:48:29
16		right?	10:48:34
17	MR. STOWELL:	Objection. Vague.	10:48:34
18	THE WITNESS:	In different directions makes sense.	10:48:35
19	BY MR. HAMILTON:		10:48:41
20	Q	If you turn to -- back to Claim 1 on page 30 of	10:49:16
21		Exhibit 1001. You see the phrase, An aspiration catheter?	10:49:27
22	A	Yes. The first three words.	10:49:39
23	Q	As that term is used in this patent in the claim,	10:49:42
24		what does aspiration catheter mean?	10:49:48
25	A	It's used to refer to catheters that are inserted	10:49:51

1 into the vasculature to -- typically to remove thrombotic
2 material from a patient.

3 Q And when you say typically, could aspiration
4 catheters be used for anything else?

5 A I've seen catheters to aspirate a bolus of air
6 that got into a patient so. So it can be used to suck out
7 an air bubble also. There may be other applications, but
8 those are a couple I can think of.

9 Q What does the word aspiration mean?

10 A To create a vacuum.

11 Q And what does the vacuum do, does the vacuum
12 cause some sort of suction?

13 A Yes. An aspiration catheter, the vacuum will
14 create a negative pressure to try to suction in the
15 thrombotic material.

16 Q So for a catheter to be an aspiration catheter,
17 will it always apply a vacuum?

18 A I think to aspirate something, you would always
19 need to create a vacuum.

20 Q Are you aware of any other types of catheters
21 that use -- that apply a vacuum besides aspiration
22 catheters?

23 A Well, almost every catheter that I've worked on,
24 one of the first steps of the procedure once a catheter is
25 in the patient is to aspirate back, pull blood back to

1 make sure there's no air in the catheter. So most 10:52:18
2 catheters need to be able to withstand some level of 10:52:20
3 vacuum to make sure there's no air in the catheter before 10:52:28
4 use in the patient. 10:52:32

5 Q And those catheters that you said you referred to 10:52:32
6 as almost every catheter I've worked on, were those 10:52:47
7 aspiration catheters? 10:52:50

8 A They were not designed to be aspiration 10:52:50
9 catheters. But a step that is used from a -- by the 10:52:53
10 physician for safety of the patients is to aspirate fluid 10:53:00
11 back into the catheter to make sure there's no air bubbles 10:53:05
12 within the catheter. 10:53:13

13 Q So that -- 10:53:13

14 A The aspiration step is done routinely for most 10:53:14
15 indwelling catheters. 10:53:18

16 Q Sorry for interrupting. Thank you for finishing. 10:53:19
17 I'll be more careful about that. 10:53:22

18 So then is it your testimony that just about any 10:53:24
19 catheter is an aspiration catheter as that term is used in 10:53:30
20 the '012 patent? 10:53:34

21 A No. I think aspiration catheters have -- that 10:53:34
22 are designed to aspirate clot material are designed to do 10:53:41
23 that function. I'm just saying the step of aspiration 10:53:47
24 occurs in many, many catheters by physicians all the time 10:53:52
25 for all types of catheters. 10:53:59

1 Q Okay. So then is it fair to say that just 10:54:00
2 because a catheter could be used for aspiration, it is not 10:54:03
3 an aspiration catheter as the term is used in the '012 10:54:06
4 patent? 10:54:09

5 A I think aspiration catheters are designed for 10:54:09
6 specific uses, to aspirate a clot from different parts of 10:54:18
7 the anatomy. And other catheters are designed for other 10:54:24
8 things. The other catheters that I'm thinking of have a 10:54:29
9 step of aspiration used. So they have to withstand some 10:54:33
10 level of vacuum typically. 10:54:36

11 Q So then is it fair to say that just because a 10:54:38
12 catheter or the use of the catheter includes a step of 10:54:50
13 aspiration, that doesn't mean the catheter's an aspiration 10:54:53
14 catheter, as that term is used in the '012 patent? 10:54:56

15 MR. STOWELL: Objection. Asked and answered. 10:54:59

16 THE WITNESS: I think that's fair. I wouldn't call 10:55:00
17 the catheters I've worked on aspiration catheters even 10:55:04
18 though they had a step of aspiration required. 10:55:08

19 BY MR. HAMILTON: 10:55:10

20 Q Are you aware of any reason to apply vacuum 10:55:12
21 pressure to a catheter other than for aspiration? 10:56:10

22 A Well, for one of the catheters that we developed 10:56:13
23 for the MitraClip project, we would prepare the catheter 10:56:36
24 by pulling a vacuum, pulling saline into the catheter to 10:56:41
25 displace all air -- 10:56:55

1	THE STENOGRAPHIC REPORTER: To displace what?	10:57:02
2	THE WITNESS: Displace all air within the catheter.	10:57:02
3	That's one example.	10:57:02
4	THE STENOGRAPHIC REPORTER: I'm sorry. You said for	10:57:02
5	the my drop?	10:57:03
6	THE WITNESS: MitraClip, M-i-t-r-a, dash -- I think	10:57:03
7	there's no dash, capital, Clip.	10:57:07
8	THE STENOGRAPHIC REPORTER: Thank you.	10:57:09
9	BY MR. HAMILTON:	10:57:10
10	Q So that withdrawing of air, would you call that	10:57:12
11	aspiration?	10:57:17
12	A I think we use that term to pull air out of the	10:57:18
13	catheter as aspirating the air out of the catheter,	10:57:21
14	pulling saline in before you insert it in the patient.	10:57:25
15	Q And in that instance the vacuum was applied	10:57:30
16	before the catheter was inserted, correct?	10:57:41
17	A Yes. It was also applied once it's in the	10:57:42
18	patient, as I said before, to pull back blood, make sure	10:57:49
19	you get only blood before injecting with saline to make	10:57:55
20	sure there's no air in the guiding catheter.	10:58:01
21	Q All right. I'm going to hand you what's been	10:58:03
22	previously marked as Exhibit 1005.	10:58:34
23	And I'll also hand you what's been previously	10:58:40
24	marked as Exhibit 1008.	10:58:58
25	Do you recognize Exhibit 1005?	10:59:13

1	A	Yes.	10:59:17
2	Q	What is Exhibit 1005?	10:59:19
3	A	It's Patent Number 11,697,012 -- sorry, reading	10:59:21
4		the wrong number. Let me repeat that. It's Publication	10:59:34
5		Number U.S. 2003/0225379 A1. It's the Schaffer patent as	10:59:38
6		we've been referring to it.	10:59:52
7	Q	So when you refer to Schaffer, is this the	10:59:53
8		exhibit you're referring to?	10:59:57
9	A	Yes. And there's another exhibit that has better	10:59:57
10		images of Figures 31 through 34 that I've also reviewed.	11:00:08
11	Q	And is that Exhibit 1008?	11:00:16
12	A	Oh. Yes.	11:00:19
13	Q	And why did you review 1008 when interpreting the	11:00:25
14		Schaffer reference?	11:00:36
15	A	Because the images in the 1005 images for	11:00:37
16		Figures 30 through 34 are dark, and it's unclear what	11:00:48
17		they're showing.	11:00:58
18	Q	And Figures 30 through 34, that's your -- that's	11:00:58
19		the primary embodiment of Schaffer that's discussed in	11:01:03
20		your declaration; isn't that right?	11:01:06
21	A	I think others are discussed too, but that is	11:01:07
22		certainly one that I focused on.	11:01:12
23	Q	So let's take a look at that embodiment shown in	11:01:16
24		Figures 30 through 34, and I'm going to ask you a couple	11:01:51
25		of questions about it. And feel free to refer to	11:01:56

1	Exhibit 1008 if you need to. Okay?	11:01:59
2	A Yes.	11:02:03
3	Q Do you see U-shaped actuating members shown in	11:02:04
4	that embodiment?	11:02:14
5	A Yeah, Schaffer uses that term for the actuating	11:02:14
6	members and are labeled as 55 in Figures 31 through 34.	11:02:26
7	Q And does that embodiment show two different	11:02:40
8	U-shaped actuating members, 55?	11:02:44
9	A Yes.	11:02:46
10	Q And are each of those U-shaped actuating members	11:02:51
11	attached to a different button?	11:02:57
12	A Yes.	11:03:00
13	Q In the embodiment, do either of those U-shaped	11:03:03
14	actuating members -- are either of those U-shaped	11:03:10
15	actuating members attached to two different buttons?	11:03:16
16	A Each of the U-shaped members are attached to a	11:03:19
17	different button.	11:03:27
18	Q So then is it fair to say that one button will	11:03:27
19	control the movement of one U-shaped actuating member and	11:03:32
20	a different button will control the movement of another	11:03:35
21	U-shaped actuating member?	11:03:38
22	A Yes.	11:03:40
23	Q If you take a look at Figure 31 specifically,	11:03:40
24	does Figure 1 depict a sealed lumen?	11:04:00
25	A Figure 32 is a cross-section that depicts the	11:04:03

1 sealed lumen, the closed -- in the closed configuration. 11:04:23
2 31 in the description I think is supposed to depict that. 11:04:31
3 But to me, 31 looks identical to 33 in the position of the 11:04:35
4 actuators, but based on the springs, that the springs are 11:04:44
5 extended, yes. 31 depicts -- is intended to depict the 11:04:53
6 closed position. 11:05:08
7 Q And Figure 33, do you see Figure 33? 11:05:09
8 A Yes. 11:05:32
9 Q Do you believe Figure 3 is intended to depict an 11:05:33
10 open position? 11:05:36
11 A Yes. Because the springs are compressed, and 11:05:37
12 that relates to the cross-section shown in Figure 34. 11:05:48
13 Q Do you see -- let's just take one of those 11:05:54
14 U-shaped members 55 in Figure 33. And why don't we take 11:06:18
15 the one on the left of the page with its ends facing 11:06:27
16 towards the left. Are you with me? 11:06:34
17 A Yes. 11:06:36
18 Q Okay. Do you see that U-shaped member having a 11:06:36
19 particular shape? 11:06:39
20 A Yes. It's... yeah. Could be called a U-shape. 11:06:40
21 Q Does that U-shape member have a particular 11:06:48
22 diameter? 11:06:54
23 A It's not -- no diameters are provided. No 11:06:54
24 dimensions are provided. 11:07:01
25 Q Would you understand that there is a diameter for 11:07:02

1	that U-shape member?	11:07:04
2	A No. It would have a radius. If you were just	11:07:05
3	looking at the U-shaped member, it would have a radius for	11:07:14
4	the U-shaped portion or bight portion.	11:07:22
5	Q So then is it your understanding that the	11:07:23
6	U-shaped member 55 that we were talking about, that single	11:07:26
7	U-shaped member on the left of the page, does not have a	11:07:30
8	diameter?	11:07:33
9	A Acting on its own, I would call it a radius of	11:07:33
10	curvature for the curve section.	11:07:44
11	Q So does that mean it does not have a diameter?	11:07:47
12	A Right. It has a radius, a curvature for the	11:07:50
13	U-shaped portion.	11:07:55
14	Q Okay. If you compare the shape of that U-shaped	11:07:55
15	member between Figure 33 and Figure 31, is the shape the	11:08:04
16	same between those two figures?	11:08:10
17	A It appears to be the same.	11:08:12
18	Q Do those figures show the U-shape member	11:08:15
19	conforming in any way to the shape of the lumen between	11:08:18
20	those two figures?	11:08:23
21	A It appears to be the same, and I believe it's	11:08:24
22	just an artifact of poor draftsmanship to show that.	11:08:33
23	Q So between the two figures, the U-shape member	11:08:38
24	does not conform in any way to the shape of the lumen,	11:08:48
25	correct?	11:08:50

1	MR. STOWELL: Objection. Misstates testimony.	11:08:50
2	THE WITNESS: It's not clear from the image. And what	11:08:51
3	I was -- what I mentioned earlier was they're not even	11:08:55
4	moving, that they haven't moved. Even though the springs	11:09:01
5	appear compressed in Figure 33 versus 31, the location of	11:09:05
6	the end of the U seems to be identical. So it seems to me	11:09:12
7	that the draftsman didn't attempt to show the U-shape	11:09:16
8	members moving but just showed the spring being compressed	11:09:23
9	and uncompressed.	11:09:27
10	BY MR. HAMILTON:	11:09:29
11	Q So based on those figures, the U-shape member	11:09:30
12	doesn't change shape between the two figures, correct?	11:09:35
13	MR. STOWELL: Objection. Misstates testimony.	11:09:38
14	THE WITNESS: It didn't change position. Didn't	11:09:39
15	change left to right position between those two images	11:09:42
16	from my, you know, visual look at this.	11:09:45
17	BY MR. HAMILTON:	11:09:51
18	Q Are you finished?	11:09:52
19	A Yes.	11:09:53
20	Q Okay. So it doesn't change position. It also	11:09:53
21	doesn't change in shape, correct?	11:09:57
22	A It doesn't seem to change in shape either, which	11:09:58
23	as I mentioned, I -- presuming that the draftsman just	11:10:03
24	didn't bother to move it or change its shape. Even though	11:10:09
25	the springs did change their compression amount.	11:10:15

1	Q	And then let's take a look at Figure 34 and	11:10:19
2		Figure 32, the difference between those two. So between	11:10:31
3		those two, you could see that the two U-shape members have	11:10:41
4		moved, correct?	11:10:45
5	A	Yes.	11:10:45
6	Q	And that's supposed to correspond to Figures 31	11:10:46
7		and 33, correct?	11:10:49
8	A	It's supposed to.	11:10:50
9	Q	And in those two figures, does the shape of the	11:10:54
10		U-shape member change between Figures 32 and 34?	11:11:03
11	MR. STOWELL:	Objection. Vague.	11:11:10
12	THE WITNESS:	The cross-sectional view of the U-shape	11:11:10
13		portion, the draftsman didn't try to make them change	11:11:17
14		shape. They seem to be the same shape.	11:11:24
15	BY MR. HAMILTON:		11:11:26
16	Q	And if you look specifically at 32, you can see	11:11:27
17		the U-shape member does not conform to the lumen, correct?	11:11:31
18	A	They're showing a gap between the collapsible	11:11:35
19		tubular member and the end of the U-shaped element which I	11:11:47
20		think is also an artifact of the draftsman because I think	11:11:52
21		there would be some, you know, compression of the tube to	11:11:58
22		fill that space and/or some flexing of the U-shaped member	11:12:03
23		to conform to that shape.	11:12:10
24	Q	So then is it fair to say you've interpreted	11:12:12
25		these figures to show something that's not actually shown	11:12:15

1 in these figures?

11:12:18

2 MR. STOWELL: Objection. Misstates testimony.

11:12:18

3 THE WITNESS: I think that there's, you know, some --
4 not sure the draftsman appropriately depicted what would
5 happen when a soft tubular member is compressed in
6 Figure 32.

11:12:19

11:12:33

11:12:43

11:12:49

7 BY MR. HAMILTON:

11:12:50

8 Q And when you say what would happen, you mean what
9 would happen to the U-shaped members, what would happen to
10 the shape of the U-shaped members. Is that what you mean?

11:12:51

11:12:53

11:12:56

11 A And/or the actuating member depending on how
12 flexible that member is.

11:12:58

11:13:03

13 Q So Figures 32 and 34 show the U-shape member not
14 conforming to the shape of the lumen, correct?

11:13:03

11:13:11

15 MR. STOWELL: Objection. Misstates testimony.

11:13:14

16 THE WITNESS: Which two images? 32, 34?

11:13:14

17 BY MR. HAMILTON:

11:13:27

18 Q Yes.

11:13:27

19 A Yeah, I think what I said was they're showing it
20 as not conforming to the tube and the tube not conforming
21 to the actuator.

11:13:27

11:13:40

11:13:45

22 Q And you believe that's an error or an omission by
23 the draft person. You believe those U-shape members will
24 actually conform to the tube, and the tube will conform to
25 the U-shape members; is that right?

11:13:46

11:13:56

11:13:59

11:14:02

1	A	Well, as I think I said in my declaration, I	11:14:04
2		believe that for Schaffer to work well, that those members	11:14:08
3		have to have some level of flexibility, and I'm not sure	11:14:12
4		that's well-represented in this image.	11:14:20
5	Q	The U-shape member shown in Figures 30 through	11:14:22
6		34, do those U-shape members interlock?	11:14:57
7	A	They're not interlocking as the '012 patent	11:15:01
8		showed one of the configurations, the Figure 8	11:15:12
9		configuration if that's what you mean by interlock.	11:15:18
10	Q	And those two U-shape members are in fact	11:15:21
11		parallel to each other, correct?	11:15:26
12	A	I characterize them as parallel to each other.	11:15:27
13		Yeah.	11:15:33
14	Q	So then is it fair to say that the two U-shape	11:15:33
15		members do not overlap the same portion of the lumen?	11:16:03
16	MR. STOWELL:	Objection. Vague.	11:16:10
17	THE WITNESS:	Well, I believe they're parallel to each	11:16:10
18		other. They're next to each other. Similar to how in the	11:16:16
19		'012 patent, they describe that the bight configuration	11:16:22
20		could also be parallel to each other and not interlocked,	11:16:25
21		I think is the term you used.	11:16:30
22	BY MR. HAMILTON:		11:16:31
23	Q	Or --	11:16:32
24	A	Or overlapping, interlocked, sorry.	11:16:32
25	Q	Interlocked or overlapping, right?	11:16:35

1 A I think you used the term interlocked. I can't
2 remember what the patent term is.

3 Q So those two U-shape members in Figures 30
4 through 34 are not interlocked, correct?

5 A They're not interlocked.

6 Q And those two U-shape members in Figures 30
7 through 34 are not overlapping, correct?

8 MR. STOWELL: Objection. Vague.

9 THE WITNESS: I think they're overlapping each other
10 in order to encircle the tubular member.

11 BY MR. HAMILTON:

12 Q They're parallel to each other, correct?

13 A They're parallel to each other.

14 Q And would these two U-shape members in operation
15 to seal the lumen pinch the lumen like a pair of scissors?

16 MR. STOWELL: Objection. Vague.

17 THE WITNESS: I think they would work similarly to how
18 the '012 patent is shown with the bight configuration
19 where the two sub-filaments overlap to have a -- to create
20 an encircled area. And I think the Schaffer patent, as I
21 talk about in my declaration, that the Schaffer members
22 have a certain amount of flexibility such that they would
23 perform very similarly to the filament shown in Figure 8,
24 let's say.

1	BY MR. HAMILTON:	11:18:33
2	Q So you said in your answer overlap. You didn't	11:18:34
3	say over interlock. So this is different from the	11:18:37
4	embodiments shown in the '012 patent where the two bights	11:18:40
5	interlock, correct?	11:18:45
6	A In Figure 8, they overlap, and I believe in the	11:18:45
7	description in the specification, they talk about they	11:18:50
8	overlap as an option. They may be parallel to each other.	11:18:54
9	Q So they either overlap or they're parallel,	11:18:57
10	correct?	11:19:00
11	A They're either interlocked, or they're parallel	11:19:00
12	in the '012 patent is my understanding.	11:19:06
13	Q And is it your understanding whether or not	11:19:09
14	they're interlocked, they overlap?	11:19:11
15	A I think that the two sub-filaments overlap when	11:19:14
16	they're in the -- well, when they're in the device in	11:19:23
17	order to form and encircle the area between the two.	11:19:27
18	Q If they're not interlocked, they don't overlap	11:19:30
19	each other, do they?	11:19:32
20	A You know, I believe they do overlap creating an	11:19:33
21	encircled area in the overlap location.	11:19:42
22	Q So is it your understanding that two	11:19:44
23	noninterlocking and instead parallel filaments would	11:19:48
24	overlap each other as that term is used in the '012	11:19:54
25	patent?	11:19:57

1	A	Yes, I believe they are overlapping.	11:19:57
2	Q	And does that form, at least in part, the basis	11:20:02
3		of your opinions in this matter?	11:20:09
4	A	Yeah, my opinions are based on the images in the	11:20:15
5		'012 patent and in the other patents referenced, but	11:20:21
6		Schaffer here is what we're talking about.	11:20:26
7	Q	And part of that is that two filaments do not	11:20:27
8		need to interlock in order to overlap as that term is used	11:20:32
9		in the '012 patent, correct?	11:20:35
10	A	I can go back and look at the -- how they use the	11:20:36
11		term interlock. In the '012 patent, line -- Column 12,	11:20:42
12		toward the bottom it says, In some embodiments, a filament	11:21:22
13		can comprise multiple filaments, specifically as shown in	11:21:26
14		Figure 7 through 9.	11:21:30
15		And on Column 13, they use the term interlock,	11:21:51
16		line 36, In some embodiments, the first bight 800-A can	11:21:58
17		extend through the second bight such that the first and	11:22:02
18		second bights interlock, whereas in other embodiments the	11:22:04
19		first and second bights can be noninterlocking.	11:22:09
20		So that's what I'm referring to, the	11:22:13
21		noninterlocking option that's provided in the '012 patent	11:22:15
22		would be -- the two sub-filaments would be parallel	11:22:24
23		similar to how the two I'll call them filaments in	11:22:28
24		Schaffer are parallel to each other.	11:22:32
25	Q	And the noninterlocking filaments is not shown in	11:22:37

1	Figures 8 and 9 to the '012 patent, correct?	11:22:42
2	A Correct. Just the interlocking option is shown	11:22:42
3	in Figure 8 and 9.	11:22:45
4	Q And the '012 patent recites that Figures 8 and 9	11:22:47
5	also show two filaments that overlap, correct?	11:22:51
6	MR. STOWELL: Objection. Misstates document.	11:22:58
7	THE WITNESS: I'm not sure if the word overlap is	11:22:59
8	used. But certainly when they're, you know, creating an	11:23:02
9	encircled area, creating a receiving area, I think is the	11:23:18
10	term that they also use, that those two elements are	11:23:20
11	overlapping.	11:23:24
12	BY MR. HAMILTON:	11:23:25
13	Q And that's when they're interlocked, correct?	11:23:27
14	MR. STOWELL: Objection. Asked and answered.	11:23:30
15	THE WITNESS: If they're parallel, they're not	11:23:30
16	interlocked is my interpretation of the patent language.	11:23:34
17	BY MR. HAMILTON:	11:23:36
18	Q So parallel filaments are not interlocked. We	11:23:39
19	agree on that?	11:23:43
20	A Yes.	11:23:44
21	Q And Figures 8 and 9 show interlocked filaments,	11:23:44
22	correct?	11:23:49
23	A Yes.	11:23:49
24	Q Sub-filaments, excuse me, in your language?	11:23:49
25	A Yes.	11:23:54

1	Q	And Figures 30 through 34 of the Schaffer	11:24:02
2		reference show parallel U-shape members, correct?	11:24:15
3	A	Yes. I recall them parallel, not interlocking.	11:24:19
4	Q	Does Schaffer disclose any other ways to compress	11:24:27
5		a lumen in a hemostasis valve to create a seal besides	11:24:53
6		U-shape members?	11:24:58
7	A	Yes. There are several other embodiments in the	11:24:59
8		earlier figures.	11:25:03
9	Q	So then is it fair to say just in Schaffer, there	11:25:06
10		are many ways to compress a lumen in a hemostasis valve to	11:25:08
11		create a seal, is that correct, beyond U-shape members?	11:25:12
12	A	Can you repeat the question?	11:25:19
13	Q	Is it fair to say that in Schaffer alone, there	11:25:24
14		are many ways to compress a lumen in a hemostasis valve to	11:25:31
15		create a seal, right?	11:25:35
16	A	Yes.	11:25:36
17	Q	U-shape members is one of them, right?	11:25:38
18	A	Yes.	11:25:41
19	Q	And then there are several others disclosed?	11:25:44
20	A	Yes.	11:25:46
21	Q	For Figures 30 through 34, the embodiments shown	11:25:47
22		in those figures, is the act of applying force to the	11:26:30
23		buttons to release the tension created by the actuating	11:26:36
24		members on the seal module how the valve is opened, is	11:26:39
25		that how that embodiment works?	11:26:44

1	MR. STOWELL: Objection. Compound.	11:26:46
2	THE WITNESS: Yeah, force is applied to the buttons to	11:26:47
3	relieve tension on the system, to compress the spring to	11:26:55
4	relieve tension on the system to allow the central lumen	11:26:58
5	to expand. I can't remember the terminology that they	11:27:06
6	use. But the central compressible lumen to self-expand.	11:27:09
7	BY MR. HAMILTON:	11:27:15
8	Q Is there any other way for the embodiment Figures	11:27:16
9	30 through 34 to unseal the module, disclosed in Schaffer?	11:27:19
10	A I think in this embodiment, that's the way it	11:27:23
11	works.	11:27:30
12	Q Let's look at Figures 1 through 4 of Schaffer.	11:27:35
13	Figures 1 through 4 show an embodiment of a valve in	11:28:12
14	Schaffer, correct?	11:28:15
15	A Yes.	11:28:15
16	Q And does that embodiment include third seal	11:28:18
17	member 165?	11:28:25
18	A I see that listed in Figure 4, which I believe	11:28:28
19	these are all referencing the same embodiment, 1	11:28:43
20	through 4. So yes, this embodiment includes multiple seal	11:28:46
21	members.	11:28:58
22	THE STENOGRAPHIC REPORTER: Sorry, are you saying seal	11:29:02
23	members?	11:29:03
24	THE WITNESS: Seal, s-e-a-l.	11:29:05
25	THE STENOGRAPHIC REPORTER: Thank you.	11:29:05

1	THE WITNESS: Multiple seal members, including 165 and	11:29:06
2	the ones on each end which I believe is 170 and 180 in	11:29:09
3	Figure 4.	11:29:15
4	BY MR. HAMILTON:	11:29:16
5	Q Okay. Let's look at the embodiment. Let's just	11:29:18
6	take Figures 5 through 22 together. Figures 5 through 22	11:29:41
7	show an embodiment including the third seal member 165,	11:29:46
8	correct?	11:29:51
9	A Figure 11, I think is just the structure	11:29:51
10	surrounding. So that one doesn't include it. But the	11:30:28
11	seal member wherein images, where the seal member is	11:30:30
12	shown, they do appear to have three seal members through	11:30:34
13	Figure 15 anyway. And in Figure 22 and 21.	11:30:41
14	Q So then is it fair to say the embodiments	11:31:09
15	depicted in Figures 5 through 22 all include third seal	11:31:12
16	member 165?	11:31:16
17	A I'm not sure that they all do. I'm not sure that	11:31:18
18	Figures 16 through 19... they don't list 165. So I'm not	11:31:20
19	sure where the cross-section is taken in those.	11:31:29
20	Q Do you see in Figure 16, 165 listed?	11:31:32
21	A I do, sorry.	11:31:37
22	Q So does that change your answer, Figures 16	11:31:38
23	through 19, does that show third seal member 165?	11:31:41
24	A It's only labeled in 16. And I think the other	11:31:46
25	images 17 through 19 are showing the shapes that can occur	11:31:53

1	with different tools through the inside. So I will assume	11:32:00
2	that they include a cross-section in the area of 165.	11:32:09
3	Q Okay. So then Figures 5 through 22 depicted an	11:32:15
4	embodiment that includes third seal member 165, correct?	11:32:23
5	A I'm not sure what Figure 20 is showing. I'd have	11:32:26
6	to look back in the spec because it's not labeled.	11:32:32
7	They're just labeled in the entire seal member. Or... 100	11:32:36
8	there.	11:32:42
9	Q So if you take a look, just turn to paragraph 54	11:32:42
10	of Exhibit 1005. So before we do that, let's just clarify	11:32:50
11	Figures 5 through 19 all depict seal member 165, correct?	11:33:06
12	Excuse me, let me withdraw the question. I'll rephrase	11:33:14
13	it.	11:33:16
14	Figures 5 through 19 all depict an embodiment	11:33:16
15	that includes third seal member 165, correct?	11:33:20
16	A Except for 11 which I think is the tray or the	11:33:22
17	containment structure.	11:33:39
18	Q And 11 is used with the embodiment of Figures 10	11:33:40
19	and 9, which depicts the third seal member, correct?	11:33:46
20	A Sure.	11:33:48
21	Q Okay. So Figures 5 through 19 each depict an	11:33:49
22	embodiment that includes third seal member 165, correct?	11:33:55
23	A Yes.	11:33:58
24	Q Okay. Now, Figures 20 through 22, do those	11:34:00
25	figures depict an embodiment that includes third seal	11:34:09

1	member 165?	11:34:13
2	A Well, only 22 has 165 labeled. But certainly, 21	11:34:13
3	is showing three different -- three different seals as	11:34:27
4	three different components. So I think that's true.	11:34:33
5	Q Okay. And if you look at paragraph 54 in	11:34:38
6	Exhibit 1005, you'll see the start of the paragraph refers	11:34:47
7	to Figures 5 through 22. And then the next column, it	11:34:51
8	refers to third central seal member 165. Does that help	11:34:55
9	you answer the question?	11:35:02
10	A Yes. I read paragraph 54. What's the question	11:35:03
11	again?	11:36:25
12	Q So does that help you answer the question as to	11:36:25
13	whether Figures 20 through 22 depict an embodiment	11:36:27
14	including third seal member 165?	11:36:34
15	A Yeah, it seems to. They're referencing Figures 5	11:36:37
16	through 22, and toward the end of that paragraph, it says,	11:36:43
17	The third central seal member 165 is sized and configured	11:36:47
18	to maintain an open lumen when no compressive force is	11:36:51
19	applied.	11:36:58
20	Q So let's look at Figures 23 through 26, does the	11:36:58
21	embodiment shown in Figures 23 through 26 include third	11:37:09
22	seal member 165?	11:37:14
23	A Yeah, it's labeled on three of the four images at	11:37:14
24	least.	11:37:38
25	Q And it's your understanding it's also included in	11:37:38

1	the fourth image where it's not labeled; is that correct?	11:37:41
2	A Most likely.	11:37:43
3	Q Figure 27, does the embodiment depicted in	11:37:45
4	Figure 7 include third seal member 165?	11:37:53
5	A Yes, it's labeled on Figure 27.	11:37:56
6	Q And then Figures 28 and 29, does the embodiment	11:38:02
7	depicted in Figures 28 and 29 include third seal member	11:38:08
8	165?	11:38:11
9	A Yeah, it's labeled there.	11:38:11
10	Q Okay. So we've been through all the embodiments	11:38:16
11	except 30 through 34.	11:38:23
12	A Mm-hmm.	11:38:25
13	Q Is it your understanding, does the embodiment	11:38:25
14	shown in Figures 30 through 34 include third seal member	11:38:37
15	165?	11:38:41
16	MR. STOWELL: Objection. Vague.	11:38:43
17	THE WITNESS: I don't see 165 labeled on any of those.	11:38:44
18	I see it labeled as 100. Seal module 100 is what's shown.	11:39:07
19	BY MR. HAMILTON:	11:39:12
20	Q So the embodiment of Figures 30 through 34	11:39:14
21	include seal module 100; is that correct?	11:39:19
22	A Includes seal module 100.	11:39:21
23	Q And does the embodiment of Figures 30 through 34	11:39:25
24	include third seal member 165?	11:39:30
25	A As I said, it's not labeled on those images.	11:39:32

1 Q Do you have an understanding of whether or not 11:39:38
2 it's included in the embodiment of Figures 30 through 34? 11:39:39

3 A It's not clear to me it's included. It appears 11:39:43
4 that they're using one seal member, not three seal 11:39:58
5 members. Based on the cross-section, all the other 11:40:01
6 cross-sections showed a separate component on each end of 11:40:04
7 the central 165 component. 11:40:08

8 Q Let's -- let's take a look at the specification 11:40:13
9 for the Exhibit 1005. 11:40:23

10 And if you could turn to page 25. Sorry, next 11:40:26
11 page -- 11:40:48

12 A '012 patent? 11:40:49

13 Q -- 26. 11:40:50

14 Of the Schaffer reference. 11:40:51

15 A Oh, sorry. 11:40:52

16 Q Exhibit 1005. 11:40:53

17 A Paragraph... 11:41:17

18 Q Paragraph 75. 11:41:20

19 You see paragraph 75 begins the discussion of the 11:41:45
20 embodiment of Figures 30 through 34? 11:41:47

21 A Yes. 11:41:50

22 Q And you see that language, The seal module is 11:41:50
23 formed of one or more seal members. Do you see that? 11:42:00

24 A Yes. 11:42:02

25 Q One or more seal members means at least one seal 11:42:03

1	member's included in that embodiment, correct?	11:42:08
2	A Yes. I think they're showing one seal member in	11:42:09
3	30 to 34.	11:42:13
4	Q When you say, One seal member, what do you mean?	11:42:14
5	A A single material making up the sealing tubular	11:42:23
6	member. I'm saying that because the cross-section doesn't	11:42:30
7	show different materials in the cross-section view for	11:42:35
8	Figure 34 and 32.	11:42:40
9	Q So when this paragraph 75 refers to one or more	11:42:43
10	seal members as discussed above, what's it referring to?	11:42:46
11	A The seal members discussed above.	11:42:50
12	Q And what are those seal members, is it fair to	11:42:56
13	say there's three seal members discussed above, a first, a	11:43:04
14	second, and a third seal member?	11:43:08
15	MR. STOWELL: Objection. Misstates document.	11:43:09
16	THE WITNESS: They certainly have shown and discussed	11:43:10
17	three different seal members with different mechanical	11:43:14
18	properties in the specification.	11:43:18
19	BY MR. HAMILTON:	11:43:24
20	Q So is it your understanding when this sentence	11:43:28
21	says, One or more seal members as discussed above, it's	11:43:30
22	referring to one or more of those three seal members, the,	11:43:36
23	first, second, and third seal member as discussed above?	11:43:37
24	A First, second, or third, yeah.	11:43:41
25	Q Okay. So one of those three has to be included	11:43:44

1	in this embodiment of Figures 30 through 34, correct?	11:43:46
2	MR. STOWELL: Objection. Misstates the document.	11:43:49
3	THE WITNESS: I think the description of the three is	11:43:53
4	what they're referring to for the single seal member	11:43:57
5	that's used in Figures 30 through -- 31 through 34.	11:44:02
6	BY MR. HAMILTON:	11:44:10
7	Q Is it Figures 30 or 31 through 34?	11:44:10
8	A Sorry. 31 through 34.	11:44:16
9	Q Isn't it Figures 30 -- if you look at the top of	11:44:17
10	paragraph 75?	11:44:21
11	A Sure. Yes, yes.	11:44:21
12	Q Okay. And then if you go down to paragraph 77,	11:44:27
13	do you see a reference to a third seal member 165?	11:44:34
14	A Yes.	11:44:38
15	Q So is it fair to say that at least third seal	11:45:12
16	member 165 is disclosed as being included in Figures 30	11:45:20
17	through 34?	11:45:28
18	MR. STOWELL: Objection. Misstates document.	11:45:28
19	THE WITNESS: Yes. I believe 77 -- paragraph 77 is	11:45:29
20	relating to Figures 30 through 34. In the last sentence	11:45:43
21	of that says that the third seal member 165 is able to	11:45:50
22	retract to an unsealed configuration.	11:45:53
23	BY MR. HAMILTON:	11:45:55
24	Q So does that mean that third seal member 165 is	11:45:55
25	included in the embodiments of figures -- the embodiments	11:46:00

1	shown in Figures 30 through 34?	11:46:04
2	A That's how I would interpret that portion of the	11:46:07
3	document, yes.	11:46:14
4	Q All right. I'm going to hand you what's been	11:46:15
5	previously marked as Exhibit 1006.	11:47:44
6	Is Exhibit 1006 the Hartley reference referenced	11:47:49
7	in your declaration?	11:48:10
8	A Yes.	11:48:11
9	Q Do you understand what's disclosed in	11:48:13
10	Exhibit 1006?	11:48:19
11	A Yes.	11:48:20
12	Q Let's take a look at Figures 3 and 4. Do Figures	11:48:24
13	3 and 4 depict a single string connected on each end to a	11:48:51
14	single rotating actuating member?	11:49:01
15	A Yes, I can describe it that way.	11:49:04
16	Q And because the two ends of the string are	11:49:09
17	connected to a single rotating rotator, let's say, those	11:49:20
18	two ends cannot move independently of each other, can	11:49:27
19	they?	11:49:30
20	MR. STOWELL: Objection. Vague.	11:49:30
21	THE WITNESS: Yeah, they would move together as the	11:49:31
22	actuator is rotated.	11:49:38
23	BY MR. HAMILTON:	11:49:39
24	Q Do you see -- focusing on Figure 3.	11:50:03
25	A Yes.	11:50:12

1	Q	If the rotator is moved in one direction, let's	11:50:12
2		say clockwise, what happens to the Item 8 depicted in the	11:50:16
3		middle which I believe is some sort of lumen?	11:50:26
4	A	Well, if it's moved counterclockwise, which is	11:50:38
5		shown in Figure 4, tension is created on the filament 14	11:50:41
6		such that it compresses the central lumen which I guess is	11:50:52
7		labeled 8. Cylindrical (indiscernible utterance)	11:51:01
8		elastomeric diaphragm is their term for the cylindrical	11:51:41
9		tubular member.	11:51:24
10	THE STENOGRAPHIC REPORTER:	I'm sorry. Could you say	11:51:27
11		the word you said after cylindrical?	11:51:28
12	THE WITNESS:	Tubular member.	11:51:33
13	THE STENOGRAPHIC REPORTER:	No, you said cylindrical	11:51:33
14		something is their term for the cylindrical tubular	11:51:33
15		member.	11:51:33
16	THE WITNESS:	Cylindrical elastomeric.	11:51:38
17	THE STENOGRAPHIC REPORTER:	Elastomeric? Is that what	11:51:38
18		you said?	11:51:38
19	THE WITNESS:	Yes.	11:51:46
20	THE STENOGRAPHIC REPORTER:	Thank you.	11:51:46
21	THE WITNESS:	Diaphragm Number 8.	11:51:44
22	BY MR. HAMILTON:		11:51:47
23	Q	Okay. So going from Figure 3 to 4, that's	11:51:51
24		turning the rotator counterclockwise that Item 8 is	11:51:55
25		constricted, correct?	11:52:07

1	A	It's compressed. It decreases in its area and	11:52:08
2		circumference.	11:52:17
3	Q	And then what about if you turn Figure 3	11:52:18
4		clockwise, what happens?	11:52:23
5	A	Well, I think the same thing happens. It would	11:52:24
6		also compress the Item Number 8, the diaphragm.	11:52:45
7	Q	In the same way that it's compressed in Figure 4.	11:52:51
8		Is that fair to say?	11:52:55
9	A	Probably. They didn't depict it that way. So	11:52:56
10		it's a little difficult to interpret.	11:53:02
11	Q	But in any event, no matter what direction you	11:53:05
12		turn the rotator, it's going to compress Item 8, fair?	11:53:09
13	A	From a neutral position as shown in Figure 3, I	11:53:13
14		believe that's true.	11:53:18
15	Q	So what's shown in Figure 3 -- withdraw the	11:53:19
16		question.	11:53:25
17		I'm going to hand you what's marked Exhibit 1007.	11:53:25
18		Is Exhibit 1007 the Eller reference referenced in your	11:54:00
19		declaration?	11:54:07
20	A	Yes.	11:54:07
21	Q	Let's take a look at Figure 15, for example.	11:54:16
22	A	Okay.	11:54:57
23	Q	Does Figure 15 depict a wire attached to a	11:54:57
24		rotary, a rotating actuating member?	11:55:22
25	A	They do use the term wire member for Item 422	11:55:41

1 showing 16. And it is the rotating type actuator where 11:55:52
2 the upper portion, I guess it's labeled for 18 -- that may 11:56:06
3 not be the right reference. Sorry. Where the outer 11:56:14
4 portion operated by the position is rotated to compress a 11:56:17
5 tubular member. 11:56:21

6 Q And what I want to understand is in this figure, 11:56:22
7 that Item 422 is attached to a single reporter; is that 11:56:31
8 correct? 11:56:37

9 A Yes. There's one rotating element to which the 11:56:37
10 one or more wires are attached. 11:56:56

11 Q Okay. So whether it's one wire, it's attached to 11:56:58
12 a single rotating element. And if there's multiple wires, 11:57:03
13 they're all attached to that single rotating element, is 11:57:07
14 that correct, is that a fair characterization of the 11:57:10
15 disclosure of Eller? 11:57:12

16 A I think that's -- 11:57:16

17 MR. STOWELL: Objection. Vague. Misstates document. 11:57:16

18 THE WITNESS: I believe that's a mechanism of action 11:57:18
19 for this design. 11:57:24

20 BY MR. HAMILTON: 11:57:26

21 Q So whether one -- I think you had said wire 11:57:27
22 member, or multiple wire members are used, they are all 11:57:31
23 attached to a single reporter in Eller, correct? 11:57:35

24 MR. STOWELL: Objection. Vague. Misstates document. 11:57:42

25 THE WITNESS: I'm not sure if all the embodiments work 11:57:44

Transcript of Troy L. Thornton
Conducted on June 25, 2025

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1 that way. But that's my understanding for the embodiments
2 shown in Figure 18, 19, for instance. 20 through 22 would
3 operate that way.

4 MR. HAMILTON: All right. Why don't we take a break.

5 MR. STOWELL: Okay.

6 MR. HAMILTON: It's noon. Do you want to take a
7 little longer break?

8 MR. STOWELL: Sure.

9 MR. HAMILTON: Have lunch if you'd like.

10 THE WITNESS: Sure.

11 MR. STOWELL: Sure.

12 THE VIDEOGRAPHER: We are going off the record at
13 1159.

14 (Recess taken.)

15 THE VIDEOGRAPHER: We are back on the record at 1239.

16 BY MR. HAMILTON:

17 Q Mr. Thornton, do you understand you're still
18 under oath?

19 A Yes.

20 Q During the break did you discuss this matter with
21 anybody?

22 A No.

23 Q Did you communicate with anybody in any way
24 regarding this matter?

25 A No.

1	Q	Did you review any documents?	12:40:07
2	A	No.	12:40:08
3	Q	I noticed you were just looking at your	12:40:08
4		declaration there. What were you looking at your	12:40:10
5		declaration for?	12:40:12
6	A	Just to find out where it was.	12:40:14
7	Q	Okay. Great.	12:40:16
8		So if you could turn to Exhibit 1005, that's	12:40:18
9		Schaffer. And if you need it, I know you relied on the	12:40:43
10		figures in Exhibit 1008 for Schaffer. So feel free to	12:40:52
11		grab that. I want to ask about paragraph 77, which is on	12:40:56
12		page 26, and specifically, the portion on the top of the	12:41:08
13		next column. So you see this description that includes	12:41:14
14		the phrase, Forcibly disengaged, do you see that?	12:41:38
15	A	Yes.	12:41:44
16	Q	And earlier, we talked about how the embodiment	12:41:44
17		shown in Figures 30 through 34 work. And is it your	12:41:48
18		understanding that to unseal the valve shown in Figures 30	12:41:53
19		through 34, the actuating members must forcibly disengage	12:42:02
20		imposing outer walls as disclosed in paragraph 77?	12:42:21
21	MR. STOWELL:	Objection. Vague. Compound.	12:42:24
22	THE WITNESS:	My understanding of forcibly disengaged	12:42:29
23		in this section refers to the act of compressing the	12:42:32
24		buttons in order to compress the springs, in order to	12:42:36
25		release tension on the system so that the -- filament	12:42:43

1 members, I'll call them, because I think it relates both 12:42:52
2 to this and to the '012 patent -- so that the filament 12:42:55
3 members relax and allow, as the patent says at the end of 12:42:59
4 that Section 77, allows the seal member 165 to be able to 12:43:04
5 retract to an unsealed configuration. 12:43:10

6 BY MR. HAMILTON: 12:43:13

7 Q So then is it fair to say that the way the 12:43:13
8 embodiment shown in Figures 30 through 34 operates is 12:43:16
9 through forcible disengagement to unseal the valve shown? 12:43:21

10 MR. STOWELL: Objection. Vague. 12:43:28

11 THE WITNESS: I think the doctor needs to exert some 12:43:28
12 force on the buttons in order to decrease tension on the 12:43:31
13 system -- on the components in the system to allow the 12:43:36
14 seal member to open, and that's the mechanism of opening 12:43:40
15 the valve. 12:43:45

16 BY MR. HAMILTON: 12:43:46

17 Q So Figures 30 through 34 require actuating 12:43:46
18 member -- each engaged actuating member to forcibly 12:43:56
19 disengage opposing outer walls 27 for that embodiment to 12:44:02
20 operate; is that correct? 12:44:04

21 MR. STOWELL: Objection. Asked and answered. 12:44:04

22 THE WITNESS: I don't know about the term disengage 12:44:05
23 because it's still -- you know, in the open configuration 12:44:17
24 shown in Figure 34, the U-shape actuator's still in 12:44:19
25 contact. So I take the forcible -- let me read it -- 12:44:25

1	forcibly disengage nomenclature to mean you're adding	12:44:37
2	force to the buttons to compress the springs to allow	12:44:41
3	opening of the seal member.	12:44:46
4	BY MR. HAMILTON:	12:44:47
5	Q So forcibly disengage means you're adding force	12:44:49
6	to the buttons. That's your understanding, correct?	12:44:52
7	A Yeah, the doctor is compressing the buttons in	12:44:55
8	order to allow the seal member to open.	12:44:59
9	Q And is it your understanding that forcibly	12:45:02
10	disengage is required to operate the device shown or the	12:45:07
11	embodiment shown in Figures 30 through 34, that's how the	12:45:12
12	doctor opens the device, correct?	12:45:16
13	MR. STOWELL: Objection. Compound.	12:45:17
14	THE WITNESS: In order to operate the device, the	12:45:18
15	buttons need to be compressed. The springs need to be	12:45:23
16	compressed by pushing on the buttons so that it allows the	12:45:27
17	tension to be released on the filament system.	12:45:33
18	BY MR. HAMILTON:	12:45:37
19	Q So this description in paragraph 77 with respect	12:45:37
20	to forcibly disengage, that's required to operate the	12:45:40
21	device or the embodiment disclosed in Figures 30	12:45:44
22	through 34, correct?	12:45:48
23	MR. STOWELL: Objection. Asked and answered.	12:45:49
24	THE WITNESS: I think my last answer was the same.	12:45:50
25		

1	BY MR. HAMILTON:	12:45:52
2	Q And is that a yes?	12:45:53
3	A That's -- what I answered last, I think, answered	12:45:54
4	the latest question.	12:45:58
5	Q So in order to operate the device, it must	12:45:59
6	operate through this description with respect to forcibly	12:46:05
7	disengage as described in paragraph 77, correct?	12:46:10
8	MR. STOWELL: Objection. Asked and answered.	12:46:13
9	THE WITNESS: I think what I said was in order to --	12:46:14
10	for it to work, the doctor needs to apply force to the	12:46:19
11	buttons to compress the springs, which relaxes the	12:46:23
12	filaments so that the seal member can recover, retract to	12:46:27
13	an unsealed configuration.	12:46:36
14	BY MR. HAMILTON:	12:46:38
15	Q And that description you just gave, that's what	12:46:38
16	you believe forcibly disengage means in paragraph 77,	12:46:40
17	correct?	12:46:44
18	A That's what I believe this paragraph is	12:46:44
19	describing of how the mechanism works.	12:46:46
20	Q And that description with respect to forcibly	12:46:49
21	disengage is the way the embodiment shown in Figures 30	12:46:53
22	through 34 is operated, correct?	12:46:59
23	MR. STOWELL: Objection. Asked and answered.	12:47:00
24	THE WITNESS: It's -- I've described how I believe it	12:47:01
25	works, and I think that's how the description in	12:47:03

1	paragraph 77 relates to the function of the valve. Yeah.	12:47:05
2	BY MR. HAMILTON:	12:47:14
3	Q And when you say the description in paragraph 77,	12:47:15
4	you mean the description with respect to the term forcibly	12:47:19
5	disengage, correct?	12:47:24
6	MR. STOWELL: Objection. Asked and answered.	12:47:24
7	THE WITNESS: The description also includes...	12:47:24
8	depressing the (indiscernible utterance) distal end of the	12:47:52
9	actuator button.	12:47:58
10	THE STENOGRAPHIC REPORTER: I'm sorry, depressing the	12:47:58
11	what?	12:47:58
12	THE WITNESS: The distal end of the actuator button.	12:47:58
13	It includes the actuator sliding along the	12:48:00
14	cylindrical interior. It includes the entire mechanism of	12:48:06
15	what's -- of how it's operating. And I think the force --	12:48:10
16	the term force relates to the force that the doctor's	12:48:15
17	applying in order to release tension on the constriction	12:48:19
18	mechanism.	12:48:24
19	BY MR. HAMILTON:	12:48:24
20	Q And just to be clear, you said the term force,	12:48:24
21	but the term is forcibly disengage. You mean the term	12:48:27
22	forcibly disengage, correct?	12:48:31
23	A I guess you could call it disengagement. It's	12:48:32
24	really releasing tension on the system to disengage the	12:48:43
25	tension that's applied in the system.	12:48:48

1	Q	And that description in paragraph 47 that	12:48:50
2		includes forcibly disengage, that is how the embodiment of	12:49:03
3		Figures 30 through 34 operates; isn't that correct?	12:49:09
4	MR. STOWELL:	Objection. Asked and answered.	12:49:12
5	THE WITNESS:	It operates how I've described it a few	12:49:13
6		times now of forcibly compressing the mechanism to allow	12:49:18
7		the central lumen -- remove tension from the system to	12:49:21
8		allow the central lumen to expand.	12:49:26
9	BY MR. HAMILTON:		12:49:29
10	Q	So this time you used the term forcibly	12:49:46
11		compressing. Does forcibly disengage mean forcibly	12:49:49
12		compressing?	12:49:52
13	A	I think disengage for this mechanism means to	12:49:53
14		disengage the tension on the system, to remove the tension	12:50:07
15		on the system to loosen the tension of the filament	12:50:10
16		members on the tube.	12:50:19
17	Q	Okay. So let's just agree to disagree on what	12:50:20
18		forcibly disengage means or what is disclosed in	12:50:25
19		paragraph 77.	12:50:28
20		But whatever's disclosed, under your	12:50:29
21		understanding, that is how the embodiment disclosed in	12:50:31
22		Figures 30 through 34 operates, correct?	12:50:35
23	MR. STOWELL:	Objection. Asked and answered.	12:50:37
24	THE WITNESS:	I think it operates how I've described	12:50:39
25		several times.	12:50:44

1	BY MR. HAMILTON:	12:50:46
2	Q And that's set forth in paragraph 77 including	12:50:46
3	forcibly disengage, correct?	12:50:49
4	A It's set forth in what I answered a few times	12:50:50
5	already. And my understanding --	12:50:53
6	Q And that's paragraph 77, correct?	12:50:57
7	A There's probably other areas that also talk about	12:50:58
8	how the mechanism works. But I'm providing my explanation	12:51:02
9	of how I believe the mechanism works in order to unseal	12:51:08
10	the seal member.	12:51:13
11	Q All right. If you could turn to your	12:51:16
12	declaration, Exhibit 1003, page 55. You see about the	12:52:30
13	middle of the text on page 55, starting with the sentence	12:52:48
14	Rather, do you see that?	12:52:53
15	A Middle of the page, yeah.	12:52:54
16	Q And is that your understanding as we sit here	12:53:17
17	today of what the term forcibly disengage refers to?	12:53:27
18	A Well, as I wrote, The term forcibly disengage	12:53:28
19	refers to the act of applying force to the buttons to	12:53:42
20	release the tension created by the actuating members on	12:53:45
21	the seal module, which in turn, allows the seal module to	12:53:51
22	retract to an uncollapsed configuration where gases and	12:53:55
23	fluids can pass there through.	12:53:56
24	Q And is that how the embodiment shown in Figures	12:53:56
25	30 through 34 unseals?	12:54:01

1 A I believe that's what I've just described several
2 times.

3 Q Okay. And as you sit here today, is that still
4 your understanding of the term forcibly disengage, what
5 forcibly disengage refers to, or do you want to change it?

6 A No. I believe it means applying force to the
7 buttons to release the tension on the entire mechanism.

8 Q Okay. So based on your understanding of what
9 forcibly disengage refers to, forcibly disengage is
10 required to unseal the embodiment shown in Figures 30
11 through 34, correct?

12 MR. STOWELL: Objection. Asked and answered.

13 THE WITNESS: Well, I'll continue reading this.
14 Schaffer's actuating members disengage from the seal
15 member in the same way that the '012 patent's filament
16 disengages from that seal member, the tubular member. So
17 I'm seeing that they're basically the same mechanism of
18 actuation, opening and closing.

19 BY MR. HAMILTON:

20 Q I'll move to strike that answer as nonresponsive.

21 The question was based on your understanding of
22 what forcibly disengage refers to as set forth in this
23 paragraph, is it correct that the embodiments shown
24 in figure -- the embodiment shown in Figures 30 through 34
25 require forcibly disengage in order to unseal the valve

1	shown?	12:55:32
2	MR. STOWELL: Objection. Asked and answered.	12:55:33
3	THE WITNESS: In order to disengage the system, to	12:55:34
4	release tension on the system, then force has to be	12:55:43
5	applied to the buttons. That's my understanding of how	12:55:46
6	the mechanism works.	12:55:49
7	BY MR. HAMILTON:	12:55:49
8	Q And that's what forcibly disengagement refers to,	12:55:50
9	correct?	12:55:53
10	MR. STOWELL: Objection. Asked and answered.	12:55:53
11	THE WITNESS: That's how the mechanism works is my	12:55:54
12	understanding in Schaffer and the '012 patent for that	12:55:59
13	matter.	12:56:03
14	BY MR. HAMILTON:	12:56:03
15	Q Okay. If you can turn to page 26 of your	12:56:56
16	declaration, Exhibit 1003.	12:56:58
17	A Okay.	12:57:31
18	Q Do you understand what's depicted in the two	12:57:32
19	figures on page 26?	12:57:35
20	A Yeah, Figure 3 is from a patent titled, Wong.	12:57:38
21	They both are, Figure 3 and Figure 4.	12:57:57
22	Q Are these items depicted in Figure 3 and 4	12:57:59
23	members that compress a lumen in the hemostasis valve in	12:58:06
24	Wong?	12:58:10
25	A Well, as I describe, the slider 17 shown in	12:58:11

1	Figure 4 is a brake shoe (indiscernible utterance) like	12:58:35
2	element.	12:58:48
3	THE STENOGRAPHIC REPORTER: I'm sorry. Is a what like	12:58:48
4	element?	12:58:48
5	THE WITNESS: Brake shoe.	12:58:48
6	Brake shoe like element having a groove that	12:58:49
7	sandwiches between two opposing sidewalls.	12:58:53
8	BY MR. HAMILTON:	12:58:59
9	Q It compresses the sidewalls, correct?	12:58:59
10	A Yeah, I need to look at Wong for more detail, but	12:59:04
11	that's my recollection of that patent.	12:59:10
12	Q And when you say that, you mean it compresses the	12:59:12
13	sidewalls, is that what you mean by that is your	12:59:18
14	recollection?	12:59:20
15	A I need to look at the patent --	12:59:20
16	Q Do you see the --	12:59:20
17	A In more detail. Sorry.	12:59:29
18	Q No, no problem. I jumped in. Are you finished?	12:59:30
19	A Yeah, go ahead.	12:59:33
20	Q So Figure 4, you describe a V-shape groove. Do	12:59:37
21	you see that?	12:59:46
22	A Yes.	12:59:46
23	Q Is a V-shape groove similar to a U-shape member?	12:59:54
24	MR. STOWELL: Objection. Vague.	01:00:07
25	THE WITNESS: The mechanism of compression in Wong	01:00:08

1	seems to be different than in Schaffer.	01:00:27
2	BY MR. HAMILTON:	01:00:30
3	Q So the mechanism of compression Wong is another	01:00:31
4	way to compress a lumen different from Schaffer's U-shape	01:00:35
5	members; is that right?	01:00:39
6	A It's a different mechanism of contraction.	01:00:39
7	Q Okay. And one's a U shape; one's a V shape. Is	01:00:46
8	that fair to characterize one of the differences?	01:00:50
9	MR. STOWELL: Objection. Vague.	01:00:53
10	THE WITNESS: Yeah, I describe a portion of the system	01:00:54
11	as a V shape, having a V-shape groove.	01:01:02
12	BY MR. HAMILTON:	01:01:06
13	Q All right. If you could turn to page -- I want	01:01:18
14	to ask about the figure on page -- bottom of page 37 and	01:01:22
15	the figures on the top of page 40. I believe they're the	01:01:22
16	same, but they're pointing to different things. So I want	01:01:32
17	to ask a couple questions about those two things, those	01:01:32
18	two groups of figures.	01:01:36
19	A 37 in the -- this declaration?	01:01:43
20	Q Page 37 of the declaration.	01:01:47
21	Bottom of page 37 and the top of page 40.	01:01:48
22	A Okay.	01:02:22
23	Q So the figures on the bottom of page 37 and the	01:02:23
24	top of page 31 are the same, just with different	01:02:28
25	annotations. Do you see that?	01:02:33

1	A	Top of page 31?	01:02:35
2	Q	Mm-hmm.	01:02:36
3	A	Yes.	01:02:38
4	Q	And the one on 37 is pointing to the end of --	01:02:41
5		let's say 35, and you've labeled it, Connecting member.	01:02:48
6		Do you see that?	01:02:51
7	A	Yes.	01:02:51
8	Q	And you've also labeled a connecting member on	01:02:52
9		Figure 31 on the bottom of page 37. Do you see that?	01:02:58
10	A	Yes.	01:03:04
11	Q	What does that connecting member connect to?	01:03:04
12	A	A catheter.	01:03:07
13	Q	Can it connect to anything else?	01:03:08
14	A	Could connect to a Y-arm adapter, multiarm	01:03:13
15		adapter that's then connected to the catheter.	01:03:21
16	Q	And then if you look at the top of page 40, now	01:03:23
17		you're pointing to the other end 45 in Figure 1, and I	01:03:27
18		don't know if it's labeled in the other one, but let's say	01:03:35
19		276 or 117, that general area. And you've labeled that	01:03:38
20		the receiving member. Do you see that?	01:03:42
21	A	Yes.	01:03:44
22	Q	And you see the language just below the figures,	01:03:45
23		you've quoted from Schaffer, The receiving member 45 is,	01:04:07
24		in one option, configured to connect to a fluid or gas	01:04:11
25		delivery system or device such as a syringe. Do you see	01:04:15

1	that?	01:04:19
2	A Yes.	01:04:19
3	Q So between these two figures, it's my	01:04:19
4	understanding you're trying to depict that the device of	01:04:26
5	Schaffer could be used for aspiration. Is that fair?	01:04:30
6	A Yes. It certainly could be attached -- a	01:04:32
7	catheter would be attached on the Luer -- I'll say the	01:04:40
8	distal end, the connecting member as shown on page 37.	01:04:44
9	And a vacuum source or another Luer connector could be	01:04:49
10	connected on the receiving member end. That's the end	01:04:57
11	that a syringe could be attached or another Luer-type	01:05:02
12	adapter.	01:05:07
13	Q So then is it fair to say your understanding of	01:05:08
14	the valve of Schaffer that's depicted in Figures 1 and 31	01:05:15
15	here could be used for aspiration by attaching a catheter	01:05:19
16	to one end and some vacuum source to the other end such as	01:05:27
17	a syringe?	01:05:31
18	A Well, the vacuum source should be attached to a Y	01:05:32
19	adapter that's on the Luer, the connecting member, which	01:05:44
20	was typically a Luer type, rotating Luer connector.	01:05:54
21	L-u-e-r.	01:06:01
22	Q Is your answer complete?	01:06:20
23	A I think so.	01:06:21
24	Q All right. So this language that says the	01:06:25
25	receiving member could be attached to a syringe, that you	01:06:27

1 quote just below the figures on page 40, that's not how
2 you would use the valve of Schaffer for aspiration,
3 correct, you would attach it somewhere else, the syringe
4 someplace else or the vacuum source somewhere else,
5 correct?

6 MR. STOWELL: Objection. Misstates testimony.

7 THE WITNESS: It could be attached at the proximal
8 end. A Y-arm adapter could be attached to the receiving
9 member labeled 45. The Y-arm portion could be attached to
10 your vacuum source. And the, you know, more proximal
11 portion could be -- it would allow you to insert another
12 catheter within the aspiration catheter.

13 BY MR. HAMILTON:

14 Q And so where would the source of aspiration be
15 connected to this valve shown in Figures 1 or 31?

16 A Let me look at... I'd like to look at the
17 Garrison reference.

18 Q Is that because Garrison actually shows
19 aspiration and Schaffer does not?

20 MR. STOWELL: Objection --

21 THE WITNESS: No.

22 BY MR. HAMILTON:

23 Q Does Schaffer disclose aspiration?

24 A I'll look at the language in Schaffer but... to
25 confirm where they say it. I mean, Schaffer certainly

1	says it's used for fluid (indiscernible utterance) stasis	01:09:53
2	valve for use with catheters --	01:09:55
3	THE STENOGRAPHIC REPORTER: I'm sorry. You're	01:09:55
4	speaking a bit fast.	01:09:55
5	THE WITNESS: Sorry.	01:09:55
6	THE STENOGRAPHIC REPORTER: It's used for fluid. What	01:09:59
7	was that?	01:09:59
8	THE WITNESS: Schaffer says in the paragraph 2 that	01:10:00
9	the application relates to catheters, in particular to a	01:10:05
10	composite fluid stasis valve for use with catheters. The	01:10:11
11	next paragraph talks about they're commonly used to	01:10:18
12	prevent loss of fluids from insertion site of a catheter	01:10:20
13	or interventional system.	01:10:25
14	So it's not limited to aspiration catheters.	01:10:33
15	It's more general for many types of catheters.	01:10:34
16	BY MR. HAMILTON:	01:10:36
17	Q And it doesn't say specifically it could be used	01:10:36
18	with an aspiration catheter; isn't that correct?	01:10:39
19	A I didn't see the aspiration word in there, but	01:10:42
20	catheter's more general than aspiration catheter.	01:10:46
21	Q And then as I understand what you've written here	01:10:52
22	on page 40 of your declaration, you're explaining that the	01:10:55
23	valve in Schaffer could be used with an aspiration	01:11:02
24	catheter because a syringe could be connected to Item 45.	01:11:06
25	Is that correct?	01:11:12

1	A	In one option, a syringe could be connected to	01:11:12
2		receiving member 45.	01:11:24
3	Q	And the quote from Schaffer is not related to	01:11:27
4		aspiration, is it, it's about fluid or gas delivery, isn't	01:11:33
5		that correct?	01:11:37
6	A	I'd have to look at the Section 47.	01:11:38
7	Q	What do you mean Section 47? You mean	01:11:50
8		paragraph 49 that's cited by you?	01:11:53
9	A	49, sorry.	01:11:54
10		Yeah, says what I said in the declaration, that	01:12:51
11		the receiving member 45 is in one option configured to	01:12:58
12		connect to a fluid or gas delivery system or device such	01:13:02
13		as a syringe, intravenous system or the like. The syringe	01:13:05
14		can be used for aspiration.	01:13:11
15	Q	Schaffer discloses the syringe is used for fluid	01:13:12
16		or gas delivery, doesn't it?	01:13:16
17	A	And a syringe can be used for aspiration.	01:13:19
18	Q	Schaffer doesn't say that, though, correct?	01:13:26
19	A	I'd have to look at every word in Schaffer again	01:13:29
20		or do a word search to find out if they used those terms.	01:13:32
21	Q	Okay. Let's limit it to this statement here.	01:13:36
22		This statement does not say that, does it, your quote from	01:13:39
23		paragraph 49 of Schaffer on page 40 of your declaration?	01:13:43
24	A	It's -- In one option, configured to connect to a	01:13:45
25		fluid or gas delivery system such as a syringe. And	01:13:55

1 syringe can also create a vacuum.

01:14:04

2 Q So this quote from paragraph 49 says, A fluid or
3 gas delivery system. And it gives examples, Such as a
4 syringe, intravenous system or the like. Is that correct?

01:14:09

01:14:12

01:14:15

5 MR. STOWELL: Objection. Misstates document.

01:14:19

6 THE WITNESS: In one option configured to connect to a
7 fluid or gas delivery system or device such as a syringe,
8 intravenous system or the like. That's what it says.

01:14:21

01:14:26

01:14:27

9 BY MR. HAMILTON:

01:14:32

10 Q And that connection is made at receiving member
11 45; is that correct?

01:14:32

01:14:36

12 A In this option that they're describing.

01:14:41

13 Q Does Figures 1 or 31 show any place else where
14 you could attach a syringe?

01:14:43

01:14:47

15 A It doesn't show it.

01:14:48

16 Q If you could take a look at page 47 of your
17 declaration. You see the figure on page 47?

01:14:53

01:15:45

18 A Yes.

01:15:56

19 Q Is that figure from another Schaffer reference,
20 and we'll -- you've referred to it as Schaffer 616. So
21 just to be clear, as we're talking now, if I'm going to
22 refer to this other Schaffer reference, I'm going to use
23 your nomenclature 616. And if I say Schaffer, we mean
24 Exhibit 1005. Is that fair?

01:16:00

01:16:07

01:16:11

01:16:13

01:16:15

01:16:23

25 A Yes.

01:16:24

1	Q	Okay. And this disclosure of a figure from	01:16:24
2		Schaffer 616, does that show a way to compress a lumen to	01:16:27
3		prevent flow or to seal the lumen?	01:16:35
4	MR. STOWELL:	Objection. Vague.	01:16:45
5	THE WITNESS:	Figure 1 there shows a -- the form of a	01:16:45
6		portion, a valve that can be collapsed to include the	01:16:48
7		lumen of the hub, denoted as catheter hub 24 in the	01:16:52
8		figure.	01:16:58
9	BY MR. HAMILTON:		01:17:01
10	Q	Please, go on if you have more.	01:17:02
11	A	And prevent blood or fluid from leaking during	01:17:04
12		intravascular procedures.	01:17:07
13	Q	So does this show another way to compress a	01:17:09
14		lumen, to seal the lumen besides a U-shape member, a	01:17:12
15		string or a wire?	01:17:15
16	MR. STOWELL:	Objection. Vague.	01:17:16
17	THE WITNESS:	The mechanism in there is a simple, kind	01:17:17
18		of a pinch valve mechanism.	01:17:25
19	BY MR. HAMILTON:		01:17:27
20	Q	And that's different from a U-shape member in	01:17:27
21		Schaffer, a wire, or a string; is that correct?	01:17:30
22	A	It would seem to be a different mechanism than	01:17:34
23		the filaments compressing a central tubular member.	01:17:36
24	Q	And this time, you said filaments. You mean the	01:17:43
25		U-shape member in Schaffer, the wire in Hartley and the	01:17:47

1	string of Eller, is that correct, when you say filaments?	01:17:50
2	MR. STOWELL: Objection. Asked and answered.	01:17:54
3	THE WITNESS: I'm using the term filament in general	01:17:55
4	for those members that can compress the central lumen,	01:17:58
5	including the U-shape members in Schaffer that could be	01:18:08
6	called filaments also.	01:18:12
7	BY MR. HAMILTON:	01:18:13
8	Q Okay. And then this Schaffer 616 shows another	01:18:14
9	way to compress the lumen compared to those three ways in	01:18:17
10	Schaffer, Hartley, and Eller; is that correct?	01:18:25
11	A It's a different mechanism of action to compress	01:18:28
12	the tubular member.	01:18:30
13	Q If you could turn to page 62 of your declaration,	01:18:31
14	Exhibit 1003.	01:18:43
15	A Okay.	01:19:17
16	Q This figure that you've created at the top of	01:19:17
17	page 62, do you see that?	01:19:22
18	A Yes.	01:19:23
19	Q Do you understand what's depicted there?	01:19:24
20	A Yes.	01:19:26
21	Q Is this a view of your interpretation of Schaffer	01:19:26
22	Figure 31 looking down the axis of the -- the lumen in	01:19:36
23	Schaffer?	01:19:42
24	A Well, it's just -- it's showing just the	01:19:42
25	components of the collapsable tubular member and the	01:19:56

1	filaments or actuators.	01:20:03
2	Q So is it fair to say this is not a perpendicular	01:20:07
3	cross-section of those components? And by perpendicular,	01:20:10
4	I mean perpendicular to the axis of the lumen.	01:20:13
5	MR. STOWELL: Objection. Vague.	01:20:17
6	THE WITNESS: I might call it perspective view so you	01:20:19
7	could see both -- both U-shape actuators in the same view.	01:20:30
8	So it's not a cross-section.	01:20:38
9	BY MR. HAMILTON:	01:20:39
10	Q Okay. If you could turn to page 73 of your	01:21:39
11	declaration and then just kind of set that aside. And	01:21:41
12	then let's also pick up Exhibit 1005. That's Schaffer.	01:22:08
13	A Okay.	01:22:33
14	Q Exhibit 1005, paragraph 83 on page 27 discloses a	01:22:34
15	method of manufacturing the embodiments shown in Figures	01:22:45
16	30 through 34; is that correct?	01:22:51
17	A Paragraph 83?	01:22:51
18	Q That's right.	01:23:03
19	A Yeah.	01:23:04
20	Yes.	01:23:24
21	Q Now, I want you to compare that to what you	01:23:24
22	disclose the method of manufacturing a valve if Schaffer's	01:23:43
23	U-shape members were replaced with Hartley's string. And	01:23:48
24	that starts middle of the page, Notably, I believe.	01:23:54
25	A Middle of page 73?	01:24:00

1	Q	Yes.	01:24:02
2	A	Okay.	01:24:02
3	Q	So first, this paragraph 83 in Schaffer, are you	01:24:40
4		aware of any other disclosure in Schaffer regarding how to	01:24:46
5		manufacture the valve of Figures 30 through 34 other than	01:24:49
6		paragraph 83?	01:24:54
7	A	Yeah, with respect to assembling the final -- the	01:24:54
8		final full system, I think this is the paragraph that	01:25:13
9		gives, you know, examples of how to do that.	01:25:16
10	Q	Okay. And then on page 73 of your declaration,	01:25:19
11		you suggest how one would manufacture a valve if	01:25:24
12		Schaffer's U-shape members were replaced by a string. Is	01:25:29
13		that a fair characterization of the bottom half of	01:25:33
14		paragraph 73?	01:25:35
15	A	Yes. I say that, A person of ordinary skill	01:25:35
16		would have known of many ways to assemble the valve using	01:25:40
17		a string. For example, a tapered fixture could be used,	01:25:43
18		and alternatively, the order of operation could be changed	01:25:48
19		such that the string is looped around the seal module	01:25:55
20		prior to connecting the springs and the buttons.	01:26:02
21	Q	And all those ways that you disclose here on	01:26:06
22		page 73, those are different from how the valve is	01:26:11
23		manufactured as set forth in paragraph 83 in Exhibit 1005,	01:26:14
24		correct?	01:26:24
25	A	The first example I give that a person of	01:26:24

1 ordinary skill might think of is using a tapered fixture,
2 cone-shaped tip on a fixture to go through the two loops
3 and then insert the valve within that fixture behind that
4 fixture. So that would use a similar order of operations
5 just adding a fixture to help place the tube through the
6 loops of the sutures.

01:26:27

01:26:35

01:26:40

01:26:44

01:26:50

01:26:59

7 Q Is that fixture disclosed in Schaffer?

01:27:02

8 A I don't believe they mention of any fixtures.

01:27:04

9 Q Would that fixture be necessary if the U-shape
10 members held their shape in Schaffer, they were rigid,
11 they weren't a string?

01:27:10

01:27:13

01:27:19

12 MR. STOWELL: Objection. Vague.

01:27:19

13 THE WITNESS: Well, depending how rigid is rigid, if
14 they held their shape when the buttons were compressed,
15 then it's possible that their manufacturing steps listed
16 wouldn't require any additional tapered fixture that I'm
17 mentioning here.

01:27:20

01:27:32

01:27:34

01:27:44

01:27:48

18 BY MR. HAMILTON:

01:27:49

19 Q And the purpose of that tapered fixture is so
20 that the string holds its shape as the device is
21 assembled; is that correct?

01:27:49

01:27:53

01:27:56

22 A Yeah, the tapered fixture would spread open the
23 strings so that the tube could be inserted within.

01:27:58

01:28:07

24 Q The bottom of page 73, you have another method, I
25 believe, starting with, Alternatively. Is that another

01:28:28

01:28:36

1	way you believe the valve of Schaffer could be	01:28:41
2	manufactured if the Schaffer's U-shape members were	01:28:44
3	replaced with a string?	01:28:50
4	A This is an alternative that I think a person of	01:28:51
5	ordinary skill could easily come up with to change the	01:28:57
6	order of operation and loop the string, first, around the	01:29:02
7	seal member and then install the springs and buttons	01:29:08
8	after.	01:29:12
9	Q And again, that alternative is also different	01:29:12
10	from the way that Schaffer discloses manufacturing or	01:29:16
11	assembling its valve, correct?	01:29:24
12	A It is a different order of operations. As I	01:29:25
13	state in -- on page 74, a person of ordinary skill would	01:29:39
14	reasonably expect success and could probably come up with	01:29:44
15	several other options of how to assemble a valve with a	01:29:51
16	string.	01:29:55
17	Q And those options that you just mentioned, those	01:29:55
18	several unnamed options those would also be different from	01:30:01
19	the method of assembling the valve as disclosed in	01:30:04
20	paragraph 83 of Schaffer, correct?	01:30:10
21	A They would likely be different if it was a very	01:30:11
22	flexible string versus a relatively rigid U-shaped	01:30:20
23	actuators.	01:30:25
24	Q If you go to the next page, paragraph 102,	01:30:25
25	page 74 of your declaration. And third line up from the	01:30:41

1	bottom, you have the phrase, These finite predictable	01:30:53
2	options. And you can take a minute to read that, but what	01:31:02
3	I'm going to ask you is by these finite predictable	01:31:06
4	options, are you referring to Schaffer's U-shaped members,	01:31:11
5	Hartley's string, and Eller's wire?	01:31:15
6	A Did you say bottom of 75?	01:31:21
7	Q Bottom of 74.	01:31:45
8	A Sorry.	01:31:46
9	So can you reask the question?	01:32:35
10	Q So by these finite predictable options set forth	01:32:39
11	at the bottom of page 74, are you referring to Schaffer's	01:32:42
12	U-shape members, Hartley's string, and Eller's wire	01:32:48
13	member?	01:32:52
14	A I think it's broader than that. The beginning of	01:32:53
15	102 -- Section 102, Schaffer states that valves generally	01:33:06
16	comprise a resilient material in compression with a	01:33:13
17	housing and a clamping member. There were a finite number	01:33:14
18	of ways to compress the resilient material. So... as you	01:33:18
19	noted there are several other clamping-type mechanisms	01:33:23
20	shown in Schaffer including Schaffer 616.	01:33:27
21	So I'm referring to the fact that there are	01:33:35
22	several known finite predictable options that could be	01:33:37
23	used to compress a tubular member.	01:33:46
24	Q So there are more options than just Schaffer's	01:33:53
25	U-shape member, Hartley's string, and Eller's wire member,	01:33:56

1	correct?	01:34:01
2	A There are, shown in Schaffer and other places, in	01:34:01
3	Schaffer 16, other methods of compressing a tube and	01:34:09
4	creating a hemostatic valve.	01:34:12
5	Q There are many other ways, aren't there?	01:34:13
6	MR. STOWELL: Objection. Vague.	01:34:15
7	THE WITNESS: There are several other ways.	01:34:19
8	BY MR. HAMILTON:	01:34:21
9	Q So at least there are several other ways in	01:34:21
10	Schaffer, right?	01:34:24
11	A Yes.	01:34:24
12	Q And there's another way, at least one, in	01:34:24
13	Schaffer's 616, correct?	01:34:27
14	A Yes.	01:34:28
15	Q We found another one in -- or at least two in	01:34:29
16	Wong, right?	01:34:33
17	A Clamping, similarly clamping tubing together I	01:34:34
18	think similar to how some of the Schaffer's designs work,	01:34:43
19	but similar clamping mechanisms.	01:34:45
20	Q As we sit here can you think of any other ways?	01:34:47
21	A Well, we did use a simple hemostatic-type clamp	01:34:52
22	in some prototype that I worked on in the past. So simple	01:35:18
23	external clamp on a tube has been used for a long time to	01:35:21
24	create hemostasis.	01:35:25
25	Q Any other ways you can think of as you sit here?	01:35:26

1	A	That's what I can think of so far.	01:35:28
2	Q	Do you think there's other ways that exist?	01:35:32
3	MR. STOWELL:	Objection. Vague.	01:35:36
4	THE WITNESS:	Could be other ways that exist.	01:35:37
5	BY MR. HAMILTON:		01:35:40
6	Q	How many other?	01:35:40
7	A	I don't know.	01:35:40
8	Q	So when you say, These finite predictable	01:35:42
9		options, you don't know how many other finite predictable	01:35:47
10		options there are; is that correct?	01:35:49
11	MR. STOWELL:	Objection. Misstates testimony.	01:35:51
12	THE WITNESS:	I don't know how many options could be	01:35:53
13		used to compress a tube.	01:36:00
14	BY MR. HAMILTON:		01:36:02
15	Q	I'd like to mark a new exhibit, Exhibit 2006.	01:36:06
16		(Whereupon Deposition Exhibit 2006	01:36:06
17		was marked for identification.)	01:37:02
18	BY MR. HAMILTON:		01:37:02
19	Q	I'm going to represent Exhibit 2006 is	01:37:05
20		Publication U.S. 2008/0087853 with the inventor name Kees,	01:37:09
21		K-e-e-s.	01:37:22
22		Do you recognize Exhibit 2006?	01:37:22
23	A	No, I don't believe I've seen it before.	01:37:24
24	Q	So as you sit here today, you don't believe	01:37:26
25		you've ever reviewed Exhibit 2006?	01:37:29

1	A	Does not look familiar to me.	01:37:31
2	Q	Does 2006 show another way to seal a lumen, to	01:37:39
3		compress a lumen to seal it in a hemostasis valve?	01:37:46
4	MR. STOWELL:	Objection. Outside the scope. Lack of	01:37:49
5		foundation.	01:37:51
6	THE WITNESS:	So not having seen this or read it in	01:37:52
7		great detail, the abstract describes it as a pinch valve,	01:39:04
8		compressing a hose-like valve member. Which I'm going to	01:39:17
9		call a tubular member. And the pinching action is	01:39:20
10		actuated by an annular actuating ring that moves the	01:39:27
11		pinching elements axially to compress and uncompress the	01:39:42
12		central lumen.	01:39:45
13	BY MR. HAMILTON:		01:39:46
14	Q	So is this another finite predictable option to	01:39:46
15		compress the lumen and seal the hemostasis valve?	01:39:53
16	MR. STOWELL:	Objection. Vague.	01:39:56
17	THE WITNESS:	It's still compressing a flexible tube.	01:39:57
18		The mechanism of moving the compressing members is	01:40:04
19		different than the one shown in Schaffer and Schaffer 616	01:40:07
20		that we've discussed so far.	01:40:13
21	BY MR. HAMILTON:		01:40:15
22	Q	Is it similar to Schaffer's U-shape member?	01:40:18
23	A	I would characterize it as a different mechanism.	01:40:20
24	Q	Okay. So this is another finite predictable	01:40:32
25		option that's different from Schaffer's two U-shaped	01:40:36

1	actuating members, Hartley's string, and Eller's wire	01:40:42
2	member, correct?	01:40:46
3	MR. STOWELL: Objection. Vague.	01:40:46
4	THE WITNESS: I believe it uses a different mechanism	01:40:47
5	to cause the pinching. The basic point of compressing a	01:40:51
6	tubular member is similar among, really, all of these, all	01:40:57
7	of these design options.	01:41:03
8	BY MR. HAMILTON:	01:41:03
9	Q So this is actually similar to Schaffer's	01:41:04
10	compression. Is that what you're saying?	01:41:06
11	A I'm saying it's a different mechanism of action	01:41:08
12	to create the pinch force. It's a pinched valve coming in	01:41:12
13	on two sides. But the mechanism of pinching is a sliding	01:41:21
14	actuator, it appears.	01:41:28
15	Q And Schaffer discloses a sliding actuator as	01:41:29
16	well, doesn't it?	01:41:52
17	A Schaffer and the '012 patent describe a different	01:41:55
18	direction of actuating the actuator, actuating the	01:42:01
19	filament and compressing the lumen whereas this actuator's	01:42:07
20	acting longitudinally, to move the pinching elements to a	01:42:11
21	tighter location.	01:42:18
22	Q And both include a sliding actuator, though,	01:42:19
23	correct? Schaffer and Kees?	01:42:23
24	MR. STOWELL: Objection. Vague.	01:42:26
25	THE WITNESS: Well, I would characterize the actuator	01:42:27

1 in the '012 patent and in Schaffer as being linear 01:42:35

2 actuators. They're acting perpendicular to the direction 01:42:40

3 of the tubing. This actuator's actuating parallel to the 01:42:44

4 direction of the tubing. So it's -- I would characterize 01:42:51

5 it as a different mechanism to cause the pinch force. 01:42:53

6 BY MR. HAMILTON: 01:42:57

7 Q So is Exhibit 2006 an example of another option 01:42:58

8 for compressing a tubular member that is not a U-shaped 01:43:03

9 actuating member, not a string, and not a wire? 01:43:13

10 A Seems to be another option to compress a tube to 01:43:15

11 create hemostasis. 01:43:25

12 Q So this is an example of another -- what you 01:43:26

13 would call finite predictable option that you didn't think 01:43:30

14 of when I asked you for other ones, isn't it? 01:43:32

15 MR. STOWELL: Objection. Vague. Misstates testimony. 01:43:35

16 THE WITNESS: I did mention a pinch valve, and the 01:43:37

17 first line here is, A pinch valve. The mechanism of 01:43:40

18 actuating the pinch valve is different than what I might 01:43:45

19 have seen before. 01:43:48

20 BY MR. HAMILTON: 01:43:48

21 Q All right. Let's take a look at Exhibit 1009. 01:43:52

22 Is this the Schaffer 616 referenced in your 01:43:57

23 declaration? 01:44:03

24 A Yes. 01:44:03

25 Q If you look at Figures 3 to 6, does this show 01:44:04

1	other ways of compressing a lumen besides Schaffer's	01:44:14
2	U-shape member, Eller's wire member, Hartley's string?	01:44:24
3	A Yes. It shows a clamping mechanism. I would	01:44:29
4	characterize it also as a pinch valve mechanism.	01:44:48
5	Q I'm going to hand you what's been previously	01:44:53
6	marked as Exhibit 1012. Do you recognize Exhibit 1012?	01:45:08
7	A Yeah, it's Myers patent that I refer to in my	01:45:17
8	declaration.	01:45:42
9	Q Does this show another way to compress a lumen in	01:45:42
10	a hemostasis mechanism?	01:45:53
11	MR. STOWELL: Objection. Vague.	01:45:58
12	THE WITNESS: Yeah, Myers discloses a pressure	01:45:59
13	responsive seal for the hemostasis mechanism, essentially	01:46:19
14	using bladder, let's say, to add pressure -- pressure	01:46:27
15	between the bladder and the outer frame in order to	01:46:34
16	compress the through-lumen or collapsible lumen.	01:46:39
17	BY MR. HAMILTON:	01:46:44
18	Q So is this another way different from the	01:46:45
19	previous ways of compressing the lumen we've discussed	01:46:47
20	today?	01:46:50
21	MR. STOWELL: Objection. Vague.	01:46:51
22	THE WITNESS: I would describe it as a different	01:46:51
23	mechanism of action to compress a lumen.	01:46:56
24	BY MR. HAMILTON:	01:46:58
25	Q Okay.	01:47:00

1	A	Yeah.	01:47:00
2	Q	And this is not a U-shaped member or a wire or a	01:47:00
3		string, isn't it?	01:47:07
4	A	It is not.	01:47:08
5	Q	I'm going to hand you what's been previously	01:47:10
6		marked Exhibit 1014. Do you recognize Exhibit 1014?	01:47:23
7	A	Yes.	01:47:29
8	Q	Is this the Exhibit 1014 referenced in your	01:47:35
9		declaration?	01:47:45
10	A	Yes.	01:47:45
11	Q	Does this disclose the hemostasis valve?	01:47:46
12	A	Yes.	01:47:50
13	Q	Does it disclose a method of compressing a lumen	01:47:53
14		in a hemostasis valve?	01:47:57
15	A	If I can read the description in more detail...	01:47:59
16		so question again?	01:49:45
17	Q	Does Exhibit 1014 disclose yet another method of	01:49:49
18		compressing a lumen in a hemostasis valve?	01:49:54
19	MR. STOWELL:	Objection. Vague.	01:49:57
20	THE WITNESS:	I would characterize it as a rotating	01:49:58
21		hemostatic valve, where the cap is rotated to compress a	01:50:04
22		compressible member that creates hemostasis. So... it's	01:50:12
23		similar to most historical -- the vast majority of	01:50:18
24		hemostatic valves in used today, I think are rotating	01:50:25
25		hemostasis valves, and this is an early example of that.	01:50:30

1 BY MR. HAMILTON:

2 Q And this method disclosed in Exhibit 1001 --
3 excuse me, 1014 is not a U-shape member of Schaffer, it's
4 not a wire as Eller, it's not a string as Hartley,
5 correct?

6 A It's not those things. I agree.

7 Q So this is another way to compress a lumen in a
8 hemostasis valve beyond those three, correct?

9 A Yes.

10 Q I'm going to hand you another one, Exhibit 1015.
11 Do you recognize Exhibit 1015?

12 A Yes.

13 Q Is this the Exhibit 1015 referenced in your
14 declaration?

15 A Yes.

16 Q Does this Exhibit 1015 disclose the hemostasis
17 valve?

18 A The abstract calls it, A hemostasis valve,
19 including a collapsible membrane and the portion of the
20 through-lumen. Fluid pressure in a chamber surrounding
21 the membrane assists in sealing the collapsible membrane
22 around the device.

23 Q So does Exhibit 1015 disclose yet another method
24 of sealing a lumen that is not Schaffer's U-shape members,
25 Hartley's string, and Eller's wire?

1	A	Well, that is pressure-based collapse which I	01:52:15
2		believe was also in one of the prior ones that we just	01:52:20
3		looked at, Myers. I would characterize them as very	01:52:26
4		similar to Myers where pressure is being used to collapse	01:52:30
5		the sleeve.	01:52:34
6	Q	Okay. So this is similar to Myers, but it's not	01:52:36
7		similar to Schaffer, Hartley, or Eller, correct?	01:52:42
8	MR. STOWELL:	Objection. Vague.	01:52:45
9	THE WITNESS:	I would agree it's a different method	01:52:46
10		of... different mechanism of action than those three you	01:52:50
11		mentioned.	01:52:57
12	BY MR. HAMILTON:		01:52:57
13	Q	Does this reference disclose any other method of	01:52:57
14		collapsing a lumen besides pressure? I'll just point you	01:53:01
15		to Figure 3, if that's okay.	01:53:04
16	A	Figure 3 is a perspective view of the clamp used	01:53:06
17		in the hemostasis valve of Figure 2. Well, to my quick	01:53:24
18		reading of the descriptions, it seems like Figure 2 really	01:55:55
19		is just combining two prior mechanisms we talked about,	01:55:59
20		like a pinch valve shown in 60, possibly with the...	01:56:05
21		pressurizing the lumen. But it's not totally clear if	01:56:15
22		this is just a pinch valve to me.	01:56:19
23		But if it is a pinch valve, we've talked about	01:56:21
24		pinch valves before.	01:56:26
25	Q	Is Schaffer's embodiment Figures 30 through 34 a	01:56:27

1	pinch valve?	01:56:40
2	MR. STOWELL: Objection. Vague.	01:56:44
3	THE WITNESS: Not in my understanding. And how we've	01:56:45
4	discussed it today, where a pinch valve usually has two	01:56:56
5	solid members compressing on the tubular member.	01:57:00
6	BY MR. HAMILTON:	01:57:03
7	Q Does Schaffer have two members that compress a	01:57:03
8	tubular member in Figures 30 through 34?	01:57:06
9	A It is compressing -- those two actuating members	01:57:09
10	or filaments are compressing the central lumen, collapsing	01:57:30
11	the central lumen, yes.	01:57:31
12	Q Do they pinch the central lumen?	01:57:32
13	A I wouldn't call it a pinch valve. I think of a	01:57:35
14	pinch valve as coming from two sides, one or two sides.	01:57:43
15	Q Did the U-shape members pinch the central lumen	01:57:47
16	embodiment shown in Figures 30 through 34?	01:57:51
17	A They encircle and change the area as they move	01:57:54
18	outward.	01:58:08
19	Q Well, in fact, they're side by side. They're	01:58:09
20	parallel so they can't pinch, can they?	01:58:12
21	MR. STOWELL: Objection. Vague.	01:58:17
22	THE WITNESS: In the pinch valves we've been	01:58:17
23	discussing, it's a rigid member that flattens a tube, is	01:58:22
24	how I'm using the term pinch valve. And I think most of	01:58:30
25	the other examples that I've characterized as pinch valves	01:58:33

1	really are flattening a tube, not encircling to compress	01:58:37
2	the tube.	01:58:43
3	BY MR. HAMILTON:	01:58:44
4	Q And in those pinch valves, the two members are	01:58:44
5	opposite each other on the lumen, correct?	01:58:47
6	MR. STOWELL: Objection. Vague.	01:58:51
7	THE WITNESS: In some embodiments -- I'll look at	01:58:52
8	Schaffer. I believe they discussed at least one -- at	01:58:58
9	least one side can be compressed. It's shown in	01:59:34
10	Figure 26. Excuse me.	01:59:47
11	BY MR. HAMILTON:	01:59:48
12	Q And so for the embodiment, Figures 30 through 34,	01:59:49
13	the two U-shape members are not opposite each other.	01:59:53
14	They're parallel to each other. Is that correct -- I'll	01:59:57
15	withdraw the question.	02:00:00
16	Let's go back to paragraph 102. So we've just	02:00:00
17	discussed many different ways to compress a resilient	02:00:07
18	material in a hemostasis valve. Is that fair?	02:00:13
19	MR. STOWELL: Objection. Vague.	02:00:17
20	THE WITNESS: You said page 102?	02:00:18
21	BY MR. HAMILTON:	02:00:25
22	Q Paragraph 102, page 74 --	02:00:27
23	A Sorry. We've discussed several different	02:00:30
24	mechanisms of action that are shown in several different	02:00:39
25	patents that are doing the same -- accomplishing the same	02:00:43

1	end result of compressing a tubular member.	02:00:49
2	Q And those are different from using a U-shape	02:00:51
3	member as in Schaffer, a string as in Hartley, and a wire	02:00:57
4	as in Eller, correct?	02:01:03
5	MR. STOWELL: Objection. Vague.	02:01:05
6	THE WITNESS: Can you list those three again? Sorry.	02:01:06
7	BY MR. HAMILTON:	02:01:11
8	Q U-shape members in Schaffer, string in Hartley,	02:01:13
9	and a wire in Eller.	02:01:17
10	A I would characterize the mechanism of action as	02:01:18
11	being different for most of these that we've reviewed that	02:01:23
12	have a pinch valve or an inflatable tubular member.	02:01:29
13	Q Did any of those references include a U-shape	02:01:35
14	member as disclosed in Schaffer?	02:01:48
15	A The references we just looked at, no. I think	02:01:50
16	the '012 patent is the closest. But...	02:02:00
17	Q I guess the closest in the references we just	02:02:03
18	looked at was the V-shape member in one of them, right?	02:02:08
19	MR. STOWELL: Objection. Vague.	02:02:12
20	THE WITNESS: I would still characterize it as a	02:02:13
21	different mechanism. More like a pinch valve.	02:02:15
22	BY MR. HAMILTON:	02:02:18
23	Q Did any of those references disclose a string	02:02:19
24	like Hartley?	02:02:22
25	A I don't believe they did.	02:02:23

1	Q	Did any of those references disclose a wire like	02:02:30
2		Eller?	02:02:33
3	A	No.	02:02:36
4	Q	Okay. So I just want to be clear. On page 74	02:02:37
5		when you say, These finite predictable options, you're not	02:02:41
6		listing all the options in this paragraph; is that	02:02:44
7		correct?	02:02:46
8	A	Well, as I said earlier, there are a finite	02:02:46
9		number of -- there were a finite number of ways to	02:02:55
10		compress the resilient material in a hemostasis valve.	02:02:57
11		Hartley and Schaffer disclosed two of them, U-shape	02:03:02
12		members versus strings. I would still say that those are,	02:03:08
13		you know -- the few other types that we've talked about	02:03:19
14		today are still a finite number. There's not an infinite	02:03:23
15		number of ways to compress a piece of tubing.	02:03:27
16	Q	And you don't know what that finite number is as	02:03:29
17		you sit here today, do you?	02:03:34
18	A	I don't.	02:03:34
19	Q	If you can turn to the next page 76 -- not the	02:03:41
20		next page but two pages later. And I want to ask about	02:03:45
21		this figure on page 76 of your declaration, Exhibit 1003.	02:03:54
22	A	Okay.	02:04:48
23	Q	So I just want to understand in this figure, this	02:04:48
24		is -- this is Figure 32 from Schaffer that has some	02:04:52
25		changes to it. Is that correct?	02:04:57

1	A	Figure 32 from Schaffer, where I've sketched in	02:04:58
2		Hartley's string or filament showing it going through the	02:05:12
3		cap on each end and secured with a knot on the outside of	02:05:18
4		the actuator button -- not cap, actuator button.	02:05:24
5	Q	So is this a representation of what one skilled	02:05:28
6		in the art would come up with in combining Schaffer and	02:05:32
7		Hartley?	02:05:37
8	A	I believe it's a reasonable...	02:05:37
9	Q	This is your opinion, isn't it, this is the	02:05:49
10		combination of those two references?	02:05:51
11	A	Yes. That is a person of ordinary skill would	02:05:53
12		have recognized that it uses similar mechanisms to	02:05:56
13		compress the seal. And replacing it with a string would	02:06:01
14		be a reasonable change that a person of skill in the art	02:06:06
15		would consider.	02:06:12
16	Q	And in this proposed combination, just to be	02:06:13
17		clear, you've depicted a single continuous string that	02:06:16
18		goes from one button around the lumen and to the other	02:06:20
19		button; is that correct?	02:06:24
20	A	That's what it shows.	02:06:25
21	Q	And if you could turn to page 89. I got the same	02:06:28
22		questions about your combination of Schaffer and Eller.	02:06:45
23		So is this a depiction of your -- what you believe a	02:06:50
24		person of skill in the art combining Schaffer and Eller,	02:06:53
25		this is what that device would look like?	02:06:56

1	A	I think it's one simple option of what a person	02:06:57
2		of skill in the art might find was easy to implement and	02:07:05
3		workable.	02:07:10
4	Q	And this is the only option in your declaration,	02:07:11
5		isn't it?	02:07:13
6	A	This is the only image I provided, yeah.	02:07:13
7	Q	Are there any other options in the combination	02:07:20
8		you provide in your declaration?	02:07:21
9	A	I don't believe so.	02:07:23
10	Q	And then in this combination, this depicts, just	02:07:32
11		like in the last figure, a single wire that runs from one	02:07:36
12		button around the lumen and to the other button; is that	02:07:39
13		correct?	02:07:44
14	A	Yes.	02:07:44
15	Q	If you could turn to page 118 of your	02:07:46
16		declaration. There's paragraph 49.	02:07:59
17	A	If we're going to be going much longer, can we	02:08:10
18		take a break?	02:08:14
19	Q	Let's take a break, perfect.	02:08:15
20	A	Yeah.	02:08:16
21	THE VIDEOGRAPHER:	We are going off the record at	02:08:17
22		1408.	02:08:20
23		(Recess taken.)	02:17:41
24	THE VIDEOGRAPHER:	We are back on the record at 1417.	02:17:41
25			

Transcript of Troy L. Thornton
Conducted on June 25, 2025

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1	BY MR. HAMILTON:	02:18:00
2	Q Do you understand you're still under oath?	02:18:01
3	A Yes.	02:18:03
4	Q Did you communicate with anyone regarding the	02:18:03
5	substance of your testimony here today during the break?	02:18:07
6	A No.	02:18:09
7	Q Review any documents?	02:18:09
8	A No.	02:18:12
9	Q Read anything related to the case?	02:18:12
10	A No.	02:18:14
11	Q All right. If you could go now back to that	02:18:15
12	paragraph... page 118, paragraph 149. Let me know when	02:18:18
13	you're ready for a question.	02:18:59
14	A Okay.	02:19:47
15	Q So I understand paragraph 149 to be your	02:19:47
16	testimony that if Schaffer's valve Figures 30 through 34	02:20:00
17	didn't form an adequate seal when there was a pressure	02:20:06
18	differential across the valve, there would be a couple of	02:20:12
19	simple options to adjust the valve that one skilled in the	02:20:15
20	art would do. Is that a fair statement?	02:20:19
21	A Yeah, as I said, in paragraph 149, a person of	02:20:21
22	ordinary skill had several simple options to adjust the	02:20:31
23	seal, including adjusting Schaffer's spring strength,	02:20:34
24	adjusting the resilience or compressibility of the seal	02:20:40
25	module, adjusting the shape, flexibility, and/or	02:20:43

1	dimensions of the actuating members to more closely	02:20:46
2	conform to the shape of the seal module and any tools	02:20:54
3	inserted through the valve.	02:20:57
4	Q And this paragraph talks about if there wasn't a	02:20:58
5	sufficient seal with a pressure differential, but these	02:21:01
6	options would apply if there wasn't a sufficient seal, if	02:21:03
7	there was a vacuum, or in any other circumstances. Is	02:21:07
8	that fair?	02:21:11
9	A Yes. If the valve wasn't sealing as designed or	02:21:11
10	as desired as necessary, then I think an engineer would	02:21:20
11	make -- would have options to adjust different aspects of	02:21:26
12	this design to enhance that sealing capability.	02:21:30
13	Q And you identified -- you just read for the	02:21:35
14	record. You've identified here three options; is that	02:21:39
15	correct?	02:21:41
16	A I mentioned as examples, some simple options,	02:21:41
17	spring strength, resilience of the seal module,	02:21:57
18	compressibility of the seal module, basically mechanical	02:22:02
19	characteristics of the seal module. Shape, flexibility,	02:22:06
20	dimensions of the actuating members are the three or four	02:22:11
21	things I've mentioned. Those are the primary components	02:22:16
22	that create the seal.	02:22:20
23	So that's what an engineer would focus on, I'm	02:22:21
24	sure.	02:22:25
25	Q All right. Let's take the first one: Adjusting	02:22:25

1	Schaffer's spring strength to apply additional force to	02:22:33
2	seal the valve. Would adjusting Schaffer's spring	02:22:36
3	strength to apply additional force to seal the valve	02:22:42
4	require any other modifications to Schaffer's design?	02:22:46
5	A It would depend on the tubular member, the	02:22:48
6	actuating, the U-shape actuating members, you know, how	02:22:56
7	strong each of those members are. So could be just	02:23:03
8	adjusting the spring, and it could be adjusting other	02:23:08
9	aspects of the mechanism.	02:23:10
10	Q And by other aspects, do you mean the strength of	02:23:11
11	the materials so they don't have an issue with the	02:23:15
12	additional spring strength, is that what you mean by that?	02:23:18
13	A Well, changing the spring strength, it may be	02:23:21
14	less or more spring strength, is more effective. So as	02:23:34
15	the spring strength adjusts, it's possible that the	02:23:39
16	compression tube might need to get thinner or thicker.	02:23:42
17	Might use a harder or softer material. Might use a	02:23:45
18	material that has better recovery properties, better shape	02:23:49
19	(indiscernible utterance) memory properties.	02:23:59
20	THE STENOGRAPHIC REPORTER: I'm sorry. Better shape?	02:24:00
21	What was that?	02:24:02
22	THE WITNESS: Shape memory properties.	02:24:02
23	THE STENOGRAPHIC REPORTER: Thank you.	02:24:04
24	BY MR. HAMILTON:	02:24:05
25	Q Okay. And I noticed in that list, you talked	02:24:06

1 about changing materials, but you didn't talk about 02:24:11
2 changing the configuration or the arrangement of 02:24:13
3 components in the embodiment disclosed in Figures 30 02:24:16
4 through 34. Those would stay the same, correct? 02:24:21

5 A I certainly think an engineer could make a wide 02:24:22
6 range of sealing capabilities by adjusting those 02:24:31
7 components. Because those components really create the 02:24:35
8 mechanism of action. There probably wouldn't be a need to 02:24:39
9 change the Luer, for instance, or the buttons necessarily. 02:24:42
10 Unless from a user standpoint, the button's size might 02:24:49
11 need to be different, but... 02:24:54

12 Q Okay. And then with that adjustment to spring 02:24:55
13 strength, would the method of assembling the device set 02:24:58
14 forth in paragraph 83 that we previously discussed apply 02:25:02
15 to that modification, you could still manufacture or 02:25:05
16 assemble a device based on that method? 02:25:09

17 A I would assume that would be still a reasonable 02:25:10
18 option, reasonable order of operations to assemble. 02:25:19

19 Q Okay. Let's talk about -- 02:25:23

20 A This valve. 02:25:24

21 Q Sorry. 02:25:28

22 A Assemble this valve. 02:25:27

23 Q Okay. So let's talk about the next item here: 02:25:29

24 Adjusting the resilience and compressibility of the seal 02:25:31
25 module that forms the valve's lumen. What does that 02:25:34

1	phrase mean?	02:25:41
2	A The material choice for that tubing, the	02:25:41
3	mechanical characteristics of that tubing, the wall	02:25:50
4	thickness of that tubing, the resilience meaning like	02:25:53
5	shape memories, so it recovers back in the uncompressed	02:26:01
6	configuration.	02:26:05
7	Q Would one way to adjust the resilience and	02:26:05
8	compressibility of the seal module that forms the valve's	02:26:15
9	lumen be to include third seal member 165, would that	02:26:19
10	improve the seal?	02:26:23
11	MR. STOWELL: Objection. Vague.	02:26:24
12	THE WITNESS: I don't know what the mechanical	02:26:25
13	characteristics are of seal member 165.	02:26:26
14	BY MR. HAMILTON:	02:26:31
15	Q Does Schaffer disclose any characteristics of	02:26:32
16	third seal member 165?	02:26:35
17	A They give options for I think only shore hardness	02:26:37
18	options but no other characteristics that would be helpful	02:26:47
19	in determining what the mechanical characteristics are of	02:26:50
20	that tube.	02:26:53
21	Q And that third seal member 165, that's included	02:26:54
22	in Schaffer to form a complete seal; isn't that correct?	02:27:00
23	MR. STOWELL: Objection. Vague.	02:27:06
24	THE WITNESS: I believe they showed it only as seal	02:27:07
25	module 100 in these figures. And one of the three... I'll	02:27:10

1	take that back. I'm going to look at the terms in -- the	02:27:21
2	terms that they use in Schaffer.	02:27:25
3	Let's see. Yeah, as it says on paragraph 75, The	02:27:27
4	seal module 100 is formed of one or more seal members, as	02:28:04
5	discussed above. So I believe it's using one of the	02:28:12
6	materials that they talk about very broadly in this	02:28:22
7	patent.	02:28:28
8	BY MR. HAMILTON:	02:28:28
9	Q So wouldn't including third seal member 165	02:28:32
10	improve the sealing of the seal module?	02:28:37
11	MR. STOWELL: Objection. Vague.	02:28:41
12	THE WITNESS: I don't know what the characteristics	02:28:41
13	are of that 165 module.	02:28:42
14	BY MR. HAMILTON:	02:28:45
15	Q Isn't third seal member 165 a member that is used	02:28:46
16	to seal in Schaffer, isn't that the point of seal member	02:28:50
17	165 -- third seal member 165?	02:28:57
18	MR. STOWELL: Objection. Vague.	02:29:00
19	THE WITNESS: I think a person of skill in the art	02:29:00
20	would be able to find an appropriate material, and that	02:29:06
21	material isn't really specified directly or clearly in the	02:29:12
22	Schaffer patent.	02:29:18
23	BY MR. HAMILTON:	02:29:18
24	Q So your issue with third seal member 165 is you	02:29:21
25	don't know what material would form a better seal, if 165	02:29:25

1	was made of that material, you wouldn't know what material	02:29:30
2	to choose; is that right?	02:29:32
3	MR. STOWELL: Objection. Vague. Compound.	02:29:33
4	THE WITNESS: What's your question?	02:29:35
5	BY MR. HAMILTON:	02:29:37
6	Q I'll withdraw the question.	02:29:38
7	Let's look at paragraph 60 of Schaffer. Schaffer	02:29:39
8	says the highly -- excuse me, paragraph 60 says, The	02:29:48
9	highly compliant third seal member 165 seals around a	02:29:52
10	variety of profile shapes and diameters 194 of the lumen	02:29:56
11	193. Do you see that?	02:30:01
12	A Sorry. Was that 58?	02:30:02
13	Q 60.	02:30:09
14	A Sorry. I see that.	02:30:11
15	Q So doesn't Schaffer disclose a third central seal	02:30:18
16	member 165 that improves the seal of Schaffer?	02:30:26
17	MR. STOWELL: Objection. Vague.	02:30:30
18	THE WITNESS: They're describing a highly compliant	02:30:31
19	seal member. I don't know if it would improve the seal or	02:30:35
20	not improve the seal.	02:30:41
21	BY MR. HAMILTON:	02:30:42
22	Q So as you read that sentence, you don't know the	02:30:43
23	purpose of that third central seal member 165 in Schaffer?	02:30:45
24	A Well, purpose of all these is to seal.	02:30:49
25	Q And the purpose of 165 is specifically to seal,	02:30:58

1	correct?	02:31:05
2	MR. STOWELL: Objection. Vague.	02:31:05
3	THE WITNESS: They use it in the central member for	02:31:06
4	some of the earlier iterations or earlier design options.	02:31:09
5	And once again, it's not shown in 30 through 34 figures.	02:31:15
6	BY MR. HAMILTON:	02:31:22
7	Q So I think -- I won't discuss whether it's shown	02:31:24
8	or not, but let's just talk about if it's included, it	02:31:29
9	improves the seal, correct?	02:31:31
10	MR. STOWELL: Objection. Vague. Asked and answered.	02:31:32
11	THE WITNESS: All right. I don't know if it improves	02:31:35
12	the seal or not.	02:31:37
13	BY MR. HAMILTON:	02:31:38
14	Q The point of the third seal member is to improve	02:31:38
15	the seal, isn't it?	02:31:40
16	MR. STOWELL: Objection. Vague. Asked and answered.	02:31:42
17	THE WITNESS: I don't know about improve the seal.	02:31:43
18	The point of the tubular member is to be able to create a	02:31:47
19	seal within these designs.	02:31:52
20	BY MR. HAMILTON:	02:31:54
21	Q And including the third seal member 165 allows	02:31:55
22	that seal module to seal around a variety of profile	02:31:58
23	shapes and diameters, doesn't it?	02:32:02
24	A They show that in some of the figures in... some	02:32:04
25	of the earlier figures in Schaffer --	02:32:22

1	Q	So --	02:32:24
2	A	-- sealing around profile shapes shown in Figures	02:32:25
3		18, 19.	02:32:37
4	Q	So wouldn't the simplest way to improve any seal	02:32:37
5		in Schaffer would be just to include the third seal member	02:32:45
6		165 that's already disclosed in Schaffer?	02:32:48
7	MR. STOWELL:	Objection. Vague.	02:32:52
8	THE WITNESS:	I don't believe that they describe the	02:32:52
9		material choice in enough detail with wall thickness,	02:32:54
10		hardness. Durometer is one thing they list and give a	02:33:01
11		wide range of, such that a person of skill in the art	02:33:08
12		would know to go and order that piece of tubing to put it	02:33:13
13		in.	02:33:15
14	BY MR. HAMILTON:		02:33:16
15	Q	So are you saying with the description of the	02:33:16
16		third seal member in Schaffer, one skilled in the art in	02:33:19
17		2017 couldn't pick a material that would allow Schaffer to	02:33:22
18		seal, is that your testimony?	02:33:25
19	MR. STOWELL:	Objection. Misstates testimony.	02:33:26
20	THE WITNESS:	I think they gave a wide range of one	02:33:27
21		parameter, shore hardness. They list some potential	02:33:34
22		materials as examples and hardness ranges as examples. I	02:33:40
23		think a person skilled in the art might have a starting	02:33:56
24		point. But to really make it work in the first place or	02:34:01
25		to make it work better, probably experimentation and	02:34:04

1	engineering, judgment, and work is involved.	02:34:08
2	BY MR. HAMILTON:	02:34:12
3	Q And that would be undue experimentation in your	02:34:13
4	mind, you couldn't figure that out from Schaffer, a person	02:34:14
5	of skill in the art?	02:34:16
6	MR. STOWELL: Objection. Misstates testimony.	02:34:18
7	THE WITNESS: I think it would be fairly simple to	02:34:19
8	specify and order different hardnesses, different wall	02:34:26
9	thicknesses of flexible tubing to be able to optimize a	02:34:31
10	design.	02:34:36
11	BY MR. HAMILTON:	02:34:36
12	Q Okay. So a person of ordinary skill in the art	02:34:37
13	in 2017 could include a third seal member 165 to ensure	02:34:40
14	that Schaffer seals, correct?	02:34:45
15	MR. STOWELL: Objection. Vague.	02:34:49
16	THE WITNESS: I don't know the definition of 165 or	02:34:49
17	its material properties. I think an engineer would be	02:34:52
18	able to find a piece of tubing that would work well. I'm	02:34:55
19	not convinced that 165 is some special magic tubing that's	02:35:01
20	well-delineated in this document.	02:35:07
21	BY MR. HAMILTON:	02:35:11
22	Q So someone skilled in the art could figure out	02:35:11
23	what to use to get a good seal; is that right?	02:35:13
24	A I believe a person skilled in the art would be	02:35:15
25	able to find the right material, wall thickness, other	02:35:21

1 physical parameters in order to create an adequate seal. 02:35:26

2 Q So in your declaration, you say just that, 02:35:35
3 someone will be able to adjust the resilience and 02:35:40
4 compressibility of the seal module that forms the valve's 02:35:44
5 lumen, yet you're telling me that someone couldn't figure 02:35:46
6 out how to do that based on Schaffer's disclosure of 165 02:35:49
7 that actually gives you materials to make the seal module, 02:35:52
8 right? 02:35:58

9 MR. STOWELL: Objection. Misstates testimony. 02:35:58
10 Compound. Argumentative. 02:35:59

11 BY MR. HAMILTON: 02:36:01

12 Q It gives you ranges of properties for the 02:36:01
13 materials. Right? 02:36:03

14 A It lists one property, shore hardness. 02:36:05

15 Q It gives you things that the materials can be 02:36:10
16 compounded with, correct? 02:36:20

17 A Yeah, it lists some that could be modified by 02:36:21
18 compounding them. Such materials are commonly known as 02:36:49
19 C-Flex or Kraton. There's two materials they listed. 02:36:53

20 THE STENOGRAPHIC REPORTER: I'm sorry. You said 02:36:57
21 C-Flex or what? 02:36:58

22 THE WITNESS: C-Flex or Kraton, K-r-a-t-o-n. 02:36:59

23 And a wide range of 5 to 15 in the shore A 02:37:05
24 hardness, so they're providing a range of options. It's 02:37:14
25 not a specific mandatory, this is a tube that works, and 02:37:15

1 we know it works.

02:37:20

2 BY MR. HAMILTON:

02:37:21

3 Q And it also says you could use modified vinyl,
4 silicone, polyurethane or a combination thereof, right,
5 there's more materials provided, correct?

02:37:22

02:37:25

02:37:29

6 A There are more materials provided. Mm-hmm.

02:37:30

7 Q Now, let's contrast this. This is where I'm
8 having trouble. This is a description of a seal module
9 that you say you wouldn't know if it would work or not,
10 and you don't know if someone skilled in the art could
11 make one that would seal. Yet in your declaration, you
12 give the simple statement, Adjusting the resilience and
13 compressibility of the seal module that forms the valve
14 lumen.

02:37:34

02:37:37

02:37:40

02:37:43

02:37:45

02:37:48

02:37:52

02:37:56

15 You don't give examples of any materials, any
16 properties, or anything else, and yet you say it would be
17 simple for a person of ordinary skill to do that to
18 improve the seal.

02:37:56

02:37:58

02:38:04

02:38:07

19 MR. STOWELL: Objection. Misstates testimony.

02:38:07

20 Compound. And I don't think there's a question pending.

02:38:11

21 BY MR. HAMILTON:

02:38:13

22 Q So is it your testimony that based on the
23 disclosure in Schaffer of the third seal member 165, one
24 couldn't manufacture something that seals properly. Yet
25 with no disclosure, just the idea that you need to adjust

02:38:13

02:38:16

02:38:19

02:38:22

1	the seal module, someone skilled in the art could	02:38:26
2	manufacture something that seals properly if there is an	02:38:28
3	issue with sealing; is that correct?	02:38:32
4	MR. STOWELL: Objection. Vague. Compound.	02:38:33
5	THE WITNESS: Well, what I'm talking about in the	02:38:38
6	disclosure is if it needed adjustment, that there would be	02:38:39
7	fairly simple things of changing materials or the	02:38:41
8	properties of materials. I could have put the wall	02:38:44
9	thickness of the materials in there.	02:38:49
10	You know, something like wall thickness isn't	02:38:50
11	mentioned at all for that component in Schaffer. So...	02:38:56
12	combination of what's shown here, plus an engineer's	02:39:01
13	experience with these materials or other materials is	02:39:05
14	probably what's required to make Schaffer's design work in	02:39:08
15	the first place or to be optimized if it didn't work in	02:39:11
16	the first prototype that you build.	02:39:17
17	BY MR. HAMILTON:	02:39:19
18	Q So a person of ordinary skill in 2017 could make	02:39:20
19	Schaffer's device work to seal under pressure, under	02:39:24
20	vacuum or neither by adjusting the resilience and	02:39:28
21	compressibility of the seal module that forms the valve	02:39:33
22	lumen; is that correct?	02:39:38
23	A Well, I also list other aspects of the spring and	02:39:39
24	the U-shaped actuating members. So I think altogether	02:39:42
25	these are given as examples. And when I say resilience	02:39:46

1	and compressibility, that also involves, you know,	02:39:49
2	material choice, wall thickness. Those are affected.	02:39:52
3	Wall thickness, for instance, diameter affects resilience	02:39:57
4	and compressibility along with material choice.	02:40:01
5	So they are a number of different factors that	02:40:03
6	could be adjusted as required to optimize a design.	02:40:06
7	Q So maybe I misunderstood the statement here.	02:40:11
8	Because you list these three phrases, and you've got an or	02:40:14
9	between them. Are you saying all three things would be	02:40:18
10	needed in order to improve Schaffer's sealing, or would	02:40:22
11	any one of these independently improve Schaffer's sealing	02:40:25
12	sufficient?	02:40:29
13	A I'm not sure. It could be and/or a combination	02:40:30
14	of different aspects. Excuse me.	02:40:46
15	Q You don't know of these three things, if they're	02:40:47
16	all required or not, is that your testimony here today?	02:40:50
17	MR. STOWELL: Objection. Misstates testimony.	02:40:52
18	Counsel, you're getting a little argumentative. Relax.	02:40:54
19	THE WITNESS: I think it could be, or you could adjust	02:41:00
20	the spring strength or the actuating members or the	02:41:06
21	characteristics of the seal module. It could be any one	02:41:14
22	of those things. It could be a combination, but I think a	02:41:18
23	person of ordinary skill in the art would be able to	02:41:23
24	figure out the appropriate steps and prototypes to make in	02:41:25
25	order to optimize a design if it weren't sealing	02:41:31

1	perfectly, the first iteration you made.	02:41:34
2	BY MR. HAMILTON:	02:41:36
3	Q If you could turn to paragraph 38 of your	02:43:14
4	declaration. While you're reading that, I'll tell you	02:43:19
5	what my question is. I'm going to ask what you meant by	02:43:44
6	the uniform collapse at the end of that paragraph.	02:43:47
7	A Mm-hmm.	02:43:50
8	Q So what did you mean by the uniform collapse in	02:45:39
9	that paragraph?	02:45:48
10	MR. STOWELL: Objection. Misstates the document.	02:45:49
11	THE WITNESS: Yeah, so in the document, Column 17 for	02:45:50
12	the '012 patent says that, In some embodiments, an	02:45:59
13	elongated member could comprise (indiscernible utterance)	02:46:07
14	a compliant tubular structure that can be, for example, a	02:46:07
15	thin wall compliant tubular structure --	02:46:08
16	THE STENOGRAPHIC REPORTER: Sorry. You're speaking	02:46:11
17	really --	02:46:13
18	THE WITNESS: Sorry. I'm going fast. I'll slow down.	02:46:13
19	Sorry.	02:46:17
20	The thin wall structure of the elongate member	02:46:17
21	132 can facilitate the collapse and specifically, the	02:46:23
22	uniform collapse of the elongate member and the sealing of	02:46:26
23	the elongate member. So I'm reading that to mean the	02:46:34
24	uniform collapse of... for instance, if the tubular	02:46:41
25	member was thick on one side and thin on the other, it may	02:46:50

1	not collapse uniformly.	02:46:53
2	So a thin wall tube tends to collapse uniformly,	02:46:57
3	when it's constricted as in Figure 2.	02:47:02
4	BY MR. HAMILTON:	02:47:08
5	Q Okay. So I see you were using the term collapse	02:47:12
6	uniformly to try to explain uniform collapse and making a	02:47:18
7	little hand movement. I just want to get something on the	02:47:24
8	record so it's in the transcript of what you mean by that.	02:47:27
9	So when you say uniform collapse or collapse	02:47:29
10	uniformly, does that mean it collapses equally around the	02:47:31
11	circumference?	02:47:37
12	MR. STOWELL: Objection. Misstates testimony.	02:47:37
13	THE WITNESS: I'm reading uniform collapse in the	02:47:38
14	segment as being that one side is not folding inward,	02:47:43
15	let's say, invaginating, which can happen when you	02:47:53
16	collapse a round tube. If a tube is thicker on one side	02:47:58
17	than the other, then it can be kind of nonuniform collapse	02:48:02
18	and the thin section collapses more easily. So I'm	02:48:05
19	reading the section as being it's collapsing downward as	02:48:16
20	it changes in circumference, area, diameter.	02:48:21
21	Instead of folding inward, I think invagination	02:48:30
22	is a common term.	02:48:34
23	BY MR. HAMILTON:	02:48:36
24	Q And would that change in circumference, area,	02:48:37
25	diameter have to be uniform for uniform collapse?	02:48:40

1	MR. STOWELL: Objection. Vague.	02:48:46
2	THE WITNESS: Not so sure.	02:48:47
3	BY MR. HAMILTON:	02:48:49
4	Q Okay. So if the circumference, area, and	02:49:10
5	diameter doesn't change uniformly. And really, it's	02:49:13
6	diameter because area and circumference are going to	02:49:17
7	change regardless. If the diameter doesn't change	02:49:20
8	uniformly across the entire range of diameters of the	02:49:23
9	tubular member, would that be uniform collapse?	02:49:28
10	MR. STOWELL: Objection. Asked and answered.	02:49:32
11	THE WITNESS: Yeah, I think this segment is really	02:49:33
12	talking about the tube coming inward instead of folding	02:49:40
13	inward. The tube compressing inward toward the center and	02:49:48
14	instead of collapsing, let's say, a portion of it	02:49:53
15	collapsing inward or folding inward.	02:49:58
16	BY MR. HAMILTON:	02:50:00
17	Q Do you have Exhibit 1007 -- this is the Eller	02:50:06
18	reference -- handy, if you could open that up to -- let me	02:50:11
19	find a good figure.	02:50:17
20	Figure 10-C or 19, either one. Let's do 19. Do	02:50:17
21	you understand what's depicted in Figure 19?	02:50:41
22	A Yes.	02:50:43
23	Q Is that uniform collapse?	02:50:45
24	MR. STOWELL: Objection. Vague.	02:50:53
25	THE WITNESS: I guess I would characterize it as more	02:50:55

1	of an infolding-type collapse.	02:51:19
2	BY MR. HAMILTON:	02:51:22
3	Q And what about if you look at the -- kind of the	02:51:22
4	serious from Figure 9-A to Figure 10-C. Is that showing	02:51:26
5	uniform collapse?	02:51:32
6	A Well, I think the end result at 10-C with no tool	02:51:33
7	inside, is showing what I would characterize more as an	02:51:49
8	infolding collapse.	02:51:54
9	Q And Figure 10-B, is that showing the start of	02:51:55
10	that infolding, is that fair?	02:52:05
11	A I believe so.	02:52:06
12	Q Why don't we -- I'm getting close to the end.	02:52:07
13	Why don't we take another five-minute break. We'll see if	02:52:48
14	I have anything else.	02:52:51
15	A Okay.	02:52:52
16	THE VIDEOGRAPHER: We are going off the record at	02:52:53
17	1452.	02:52:56
18	(Recess taken.)	02:58:54
19	THE VIDEOGRAPHER: We are back on the record at 1459.	02:58:54
20	BY MR. HAMILTON:	02:59:13
21	Q Mr. Thornton, do you understand you're still	02:59:19
22	under oath?	02:59:20
23	A Yes.	02:59:20
24	Q Did you communicate in any way with anybody	02:59:21
25	regarding your testimony during the break?	02:59:26

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1	A	No.	02:59:29
2	Q	Did you review any documents during the break?	02:59:29
3	A	No.	02:59:32
4	MR. HAMILTON:	I have no further questions. I'll pass	02:59:34
5		the witness.	02:59:36
6	MR. STOWELL:	I have no questions for the witness.	02:59:37
7	MR. HAMILTON:	All right. Well, thank you for your	02:59:39
8		time today.	02:59:41
9	THE WITNESS:	Sure.	02:59:42
10	THE VIDEOGRAPHER:	This marks the end of the	02:59:42
11		deposition of Troy L. Thornton. We are going off the	02:59:44
12		record at 1459.	02:59:46
13		(WHEREUPON THE DEPOSITION WAS	
14		CONCLUDED AT 2:59 P.M.)	
15			
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1 Please be advised I have read the
2 foregoing deposition, pages 1 through
142, inclusive.

3 I hereby state there are:

4
5
6 (Check one) _____ no corrections
7 _____ corrections per attached
8

9
10 _____
11 TROY THORNTON
12
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WITNESS'S CHANGES OR CORRECTIONS

NOTE: If you are adding to your testimony, print the exact words you want to add. If you are deleting from your testimony, print the exact words you want to delete. Specify with "Add" or "Delete" and sign this form.

Deposition of: TROY THORNTON
Case Title: IMPERATIVE V. INARI
Date of Deposition: JUNE 25, 2025

I, _____ have
the following corrections to make to my deposition:

Page Line Change/Add/Delete

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CERTIFICATE OF SHORTHAND REPORTER/STENOGRAPHER

I, Christa Yan, Certified Shorthand/Stenographic Reporter
within and for the State of California do hereby certify:

That Troy Thornton, the Witness whose deposition is
hereinbefore set forth, was duly sworn by me before the
commencement of such deposition and that such deposition
was taken before me and is a true record of the testimony
given by such witness.

I further certify that both parties were represented by
counsel at the deposition.

I further certify that the deposition of Troy Thornton,
occurred at the offices of Knobbe Martens San Francisco on
June 25, 2025, commencing at 9:01 a.m. to 2:59 p.m.

I further certify that I am not related to any of the
parties to this action by blood or marriage, I am not
employed by or an attorney to any of the parties to this
action, and that I am in no way interested, financially or
otherwise, in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 2nd
day of July 2025.


CERTIFIED SHORTHAND/STENOGRAPHIC REPORTER
IN AND FOR THE STATE OF CALIFORNIA

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