UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

IMPERATIVE CARE, INC.,	)
	)
Petitioner,	)
	)
vs.	) Case No. IPR2025-00156
	)
INARI MEDICAL, INC.,	) Patent No. 11,697,012
	)
Patent Owner.	)
_____	)

VIDEOTAPED DEPOSITION OF

TROY L. THORNTON

SAN FRANCISCO, CALIFORNIA

THURSDAY, NOVEMBER 20, 2025

Reported Stenographically By:
Cody Knacke, RDR, CSR No. 13691
Job No.: 608049
Pages: 1 - 66

1 VIDEOTAPED DEPOSITION OF TROY L. THORNTON,
2 taken before Cody Knacke, RDR, CSR No. 13691, a
3 Certified Shorthand Reporter for the State of
4 California, commencing on Thursday,
5 November 20, 2025, at 12:56 p.m., at 333 Bush
6 Street, 21st Floor, San Francisco, California.
7
8 APPEARANCES OF COUNSEL:
9 For the Petitioner:
10 KNOBBE MARTENS OLSON & BEAR, LLP
BY: JOSHUA STOWELL, ESQ.
11 2040 Main Street, 14th Floor
Irvine, California 92614
12 949.760.0404
joshua.stowell@knobbe.com
13
For the Patent Owner:
14
PERKINS COIE LLP
15 BY: JOSEPH HAMILTON, ESQ.
1888 Century Park East, Suite 1700
16 Los Angeles, California 90067
310.788.3271
17 jhamilton@perkinscoie.com
18 Also Present:
19 Tomas Reyes, Videographer
20
21
22
23
24
25

I - N - D - E - X

EXAMINATION BY:	PAGE
BY MR. HAMILTON	5

E - X - H - I - B - I - T - S

MARKED	DESCRIPTION	PAGE
Exhibit 2011	Declaration of Troy L. Thornton in Support of Petition for Inter Partes Review of U.S. Patent No. 11,697.011	50
Exhibit 2012	Declaration of Troy Thornton in Support of Opposition to Plaintiff's Motion for Preliminary Injunction	62

PREVIOUSLY MARKED EXHIBITS

MARKED	DESCRIPTION	PAGE
Exhibit 1001	U.S. Patent No. 11,697,012	56
Exhibit 1003	Declaration of Troy L. Thornton in Support of Inter Partes Review of U.S. Patent No. 11,697,012	9
Exhibit 1005	U.S. Patent Application Publication No. 2003/0225379, Schaffer	17
Exhibit 1008	Figures in Schaffer reference	18
Exhibit 1020	Supplemental Declaration of Troy L. Thornton in Support of Petitioner's Reply for Inter Partes Review of U.S. Patent No. 11,697,011	7

1 SAN FRANCISCO, CALIFORNIA
2 THURSDAY, NOVEMBER 20, 2025
3 12:56 P.M.
4 THE VIDEOGRAPHER: Here begins Media 12:56:20
5 Number 1 in the videotaped deposition of 12:56:21
6 Troy Thornton in the matter of Imperative Care, Inc. 12:56:23
7 versus Inari Medical, Inc., in the United States 12:56:26
8 Patent and Trademark Office, Case Number 12:56:32
9 IPR2025-00156. 12:56:38
10 Today's date is November 20, 2025, and the 12:56:42
11 time on the monitor is 12:56 p.m. 12:56:44
12 The videographer today is Tomas Reyes 12:56:48
13 representing Planet Depos, and this video deposition 12:56:50
14 is taking place at 333 Bush Street, 21st Floor, 12:56:54
15 San Francisco, California. 12:56:59
16 Would counsel please voice identify 12:57:00
17 themselves and state whom they represent, starting 12:57:02
18 with the plaintiff. 12:57:04
19 MR. STOWELL: Joshua Stowell of 12:57:04
20 Knobbe Martens on behalf of the petitioner and the 12:57:09
21 witness. 12:57:10
22 MR. HAMILTON: Joseph Hamilton of 12:57:11
23 Perkins Coie on behalf of the patent owner. 12:57:13
24 THE VIDEOGRAPHER: The court reporter today 12:57:19
25 is Cody Knacke, representing Planet Depos. 12:57:20

1 And the witness will now be sworn. 12:57:24
2 THE STENOGRAPHER: This is Cody Knacke,
3 CSR 13691. This deposition is being recorded
4 stenographically.
5 TROY THORNTON,
6 called as a witness, having been first duly sworn,
7 testified as follows:
8 EXAMINATION
9 BY MR. HAMILTON:
10 Q. Mr. Thornton, welcome back. Thank you for 12:57:43
11 appearing today. 12:57:45
12 I know we've done this a few times. I'm 12:57:45
13 just going to go briefly over some of the ground 12:57:48
14 rules to refresh your memory. 12:57:50
15 So you understand you're under oath? 12:57:51
16 A. Yes. 12:57:53
17 Q. Is there any reason you can't give your 12:57:53
18 full, complete, and truthful testimony today? 12:57:58
19 A. No. 12:58:00
20 Q. Are you on any medications that might 12:58:00
21 prevent you from giving your full, complete, and 12:58:04
22 truthful testimony today? 12:58:06
23 A. No. 12:58:07
24 Q. If at any time you don't understand a 12:58:08
25 question, please ask for clarification. If you 12:58:14

1 don't, we're going to assume that you understand the 12:58:15
2 yes. 12:58:17
3 Is that fair? 12:58:17
4 A. Yes. 12:58:18
5 Q. I also ask that we don't speak over each 12:58:18
6 other. I'll try not to speak when you're answering 12:58:22
7 a question. If you could do the same while I'm 12:58:24
8 asking a question. And then also give an audible 12:58:26
9 answer, not a head nod. So a "yes" or a "no." 12:58:29
10 Is that fair? 12:58:40
11 A. Yes. 12:58:40
12 Q. I also ask that we -- you can take a break 12:58:41
13 any time you want, but as long as we don't do it 12:58:48
14 while a question's pending. 12:58:50
15 Okay? 12:58:51
16 A. Yes. 12:58:51
17 Q. Did you do any prep for your deposition 12:58:52
18 today? 12:58:54
19 A. Yes. 12:58:54
20 Q. What did you do? 12:58:57
21 A. Reviewed a number of documents. Met with 12:58:58
22 counsel yesterday. 12:59:02
23 Q. How long did you meet with counsel? 12:59:05
24 A. Around two hours. 12:59:07
25 Q. And by counsel do you mean Mr. Stowell 12:59:10

1 sitting next to you? 12:59:17
2 A. Yes. 12:59:18
3 Q. Was anybody else present? 12:59:19
4 A. No. 12:59:21
5 Q. Have you spoken with anybody else in 12:59:21
6 preparation for your deposition here today? 12:59:23
7 A. No. 12:59:24
8 Q. What documents did you review? 12:59:24
9 A. Several. Several documents that are listed 12:59:27
10 in the supplemental declaration. 12:59:44
11 Q. Do you recall reviewing any documents that 12:59:48
12 aren't listed in the supplemental declaration? 12:59:51
13 A. I need to look at that list of the exhibits 12:59:53
14 in the supplemental declaration. 01:00:02
15 Q. So as you sit here you don't recall 01:00:04
16 reviewing any? 01:00:06
17 A. I don't believe I reviewed anything that 01:00:06
18 wasn't listed there. No. 01:00:08
19 Q. Then I just want to be clear for the 01:00:11
20 record. 01:00:14
21 So I'm going to hand you what's been 01:00:15
22 previously marked as Exhibit 1020. 01:00:16
23 (Exhibit 1020 was previously marked by the 01:00:16
24 Certified Shorthand Reporter, and a copy is 01:00:16
25 attached hereto.) 01:00:29

1 BY MR. HAMILTON: 01:00:29
2 Q. Is this the supplemental declaration that 01:00:30
3 you just referred to? 01:00:31
4 A. Yes. 01:00:32
5 Q. I'm going to hand you another document. 01:00:32
6 This document's been previously marked as 01:01:00
7 Exhibit 10 -- 01:01:03
8 Yes? 01:01:04
9 A. Just to add to my last answer, after 01:01:04
10 looking at the exhibits, I did review the transcript 01:01:06
11 from the last deposition related to the '012 01:01:08
12 supplemental -- or '011 supplemental, I guess it 01:01:16
13 would have been. 01:01:20
14 Q. When you say transcript, you mean 01:01:20
15 transcript of your deposition? 01:01:23
16 A. My own deposition, yes. 01:01:24
17 Q. And when did you review that document? 01:01:26
18 A. This morning. 01:01:35
19 Q. Prior to this morning, had you seen that 01:01:36
20 document before? 01:01:40
21 A. I believe so. 01:01:40
22 Q. I'm going to hand you what was previously 01:01:53
23 marked as Exhibit 1003 in this matter. 01:01:55
24 ///
25 ///

1 (Exhibit 1003 was previously marked by the 01:01:55
2 Certified Shorthand Reporter, and a copy is 01:01:55
3 attached hereto.) 01:02:04
4 BY MR. HAMILTON: 01:02:04
5 Q. Do you recognize Exhibit 1003? 01:02:06
6 A. Yes. 01:02:07
7 Q. What's 1003? 01:02:07
8 A. It's a declaration of Troy Thornton in 01:02:12
9 Support of Petitioner for Inter Partes Review of 01:02:14
10 US Patent Number 11,697,012. 01:02:18
11 Q. And is this your declaration submitted in 01:02:20
12 association with this matter? 01:02:25
13 MR. STOWELL: Objection. Vague. 01:02:26
14 THE WITNESS: This was my declaration 01:02:34
15 submitted as of November 8, 2024. 01:02:35
16 BY MR. HAMILTON: 01:02:41
17 Q. Have you done any other declarations 01:02:41
18 related -- excuse me -- withdraw that question. 01:02:45
19 Have you prepared any other declarations -- 01:02:49
20 I withdraw the question. 01:03:01
21 When did you last review this Exhibit 1003? 01:03:03
22 A. I looked at parts of it yesterday in 01:03:17
23 preparation for this deposition. 01:03:22
24 Q. Did any portion of this document refresh 01:03:23
25 your recollection as to the matters of this case? 01:03:35

1 A. I'm not sure I understand the question. 01:03:37
2 Q. You said you reviewed this document 01:03:42
3 yesterday, is that correct, Exhibit 1003? 01:03:46
4 MR. STOWELL: Objection. Misstates 01:03:50
5 testimony. 01:03:52
6 THE WITNESS: I've read some portions of 01:03:52
7 the document yesterday. 01:03:56
8 BY MR. HAMILTON: 01:03:57
9 Q. And did your review of any portions of the 01:03:57
10 document refresh your recollection about any matter 01:04:00
11 in this -- any issue in this case? 01:04:02
12 MR. STOWELL: Objection. Vague. 01:04:04
13 THE WITNESS: Well, they're very 01:04:05
14 interrelated, so they cross-reference back and 01:04:18
15 forth. I was cross-referencing back and forth a few 01:04:20
16 things. 01:04:23
17 BY MR. HAMILTON: 01:04:23
18 Q. If you could turn to page 2 of 01:04:27
19 Exhibit 1003. Let me know when you're there. 01:04:39
20 A. Yes. 01:04:50
21 Q. So under the heading on page 2 it says 01:04:50
22 "Experience and Qualifications," and that goes on 01:04:55
23 through paragraph 14 on page 4; is that correct? 01:04:58
24 A. Yes. 01:05:05
25 Q. Do you have any additional experience not 01:05:06

1 included in this paragraphs 5 to 14 related to 01:05:09
2 hemostasis valves that's not listed here? 01:05:16
3 MR. STOWELL: Objection. Vague. 01:05:19
4 THE WITNESS: Can you repeat the question. 01:05:34
5 BY MR. HAMILTON: 01:05:37
6 Q. Is there anything you want to add to your 01:05:37
7 experience between paragraphs 5 to 14 related to 01:05:39
8 hemostasis valves? 01:05:41
9 MR. STOWELL: Objection. Vague. 01:05:42
10 THE WITNESS: No. 01:05:44
11 BY MR. HAMILTON: 01:05:45
12 Q. If you look at paragraph 14, paragraph 14 01:05:45
13 says you have more than 35 years of experience, and 01:06:06
14 it lists several categories. 01:06:08
15 You see that? 01:06:09
16 A. Yes. 01:06:10
17 Q. In those categories what I don't see is the 01:06:10
18 word "hemostasis valve." 01:06:16
19 Would you consider your 35 years of 01:06:19
20 experience in these categories listed in this first 01:06:22
21 sentence of paragraph 14 to include experience in 01:06:26
22 hemostasis valves? 01:06:28
23 A. The second sentence says: "I'm very 01:06:30
24 familiar with the concepts of catheters, catheter 01:06:34
25 systems, and hemostasis valves." 01:06:36

1 Q. Other than this 35 years of experience 01:06:42
2 reference in paragraph 14, do you have any other 01:06:44
3 experience with hemostasis valves? 01:06:46
4 MR. STOWELL: Objection. Vague. 01:06:48
5 THE WITNESS: During the 35 years I've 01:06:52
6 worked with several hemostasis valves on several 01:06:54
7 different catheters. 01:06:57
8 BY MR. HAMILTON: 01:06:59
9 Q. So over the course of 35 years, you said 01:06:59
10 you've worked with several hemostasis valves on 01:07:07
11 several different catheters. 01:07:10
12 Do you know about how many hemostasis 01:07:12
13 valves? 01:07:13
14 A. Just on my last project, a MitraClip 01:07:16
15 development project that was started in 2020 in 01:07:35
16 which I was the head of R&D for 12 years, that 01:07:40
17 product had at least three hemostasis valves built 01:07:44
18 in to that catheter system. 01:07:55
19 Q. Okay. So we've -- you've identified three 01:08:03
20 in your 35 years of experience. 01:08:06
21 How many others? 01:08:08
22 A. So Advanced Cardiovascular Systems, as I 01:08:09
23 talk about in paragraph 11, I didn't develop any 01:08:46
24 hemostatic -- hemostatic valves there, but we used 01:09:01
25 those regularly in clinical use and testing. 01:09:05

1 Prior to that in '95 to 2000 when I was at 01:09:15
2 Prograft Medical, we did develop -- had a 01:09:21
3 custom-made introducer sheathe, which had a custom 01:09:28
4 hemostatic valve as part of that development 01:09:31
5 project. 01:09:37
6 Q. Did that hemostatic valve you just 01:09:37
7 mentioned use a string, a wire, or some type of 01:09:40
8 flexible wire to constrict the lumen? 01:09:45
9 A. No. 01:09:48
10 Q. What caused the construction, or what 01:09:48
11 allowed that valve to seal? 01:09:53
12 A. It was a passive sealing valve that had a 01:10:01
13 silicone-type seal that had a slit and a circular 01:10:05
14 opening as part of the design. 01:10:13
15 Q. Have you ever encountered a valve in your 01:10:18
16 35 years of experience that employed a string, wire, 01:10:27
17 or other type of flexible member to constrict a 01:10:31
18 lumen? 01:10:39
19 A. At Evalve we did prototype a pinch-type 01:10:48
20 valve that was used to constrict a polymeric tube. 01:10:54
21 We didn't ever commercialize that option. That was 01:10:58
22 a side-pinch type valve on a single-lumen tube. 01:11:02
23 Q. Did that employ a string, wire, or other 01:11:10
24 flexible member to constrict the lumen? 01:11:13
25 A. No. 01:11:15

1 Q. So the question was, have you ever 01:11:15
2 encountered a valve in your 35 years of experience 01:11:18
3 that employed a string, wire, or other type of 01:11:21
4 flexible member to constrict the lumen? And you 01:11:24
5 gave me an example that didn't include that. 01:11:26
6 Do you have an example of any one you've 01:11:28
7 encountered that does include string, wire, or other 01:11:31
8 type of flexible member to constrict the lumen? 01:11:33
9 MR. STOWELL: Objection. Compound. 01:11:35
10 THE WITNESS: Not until this project 01:11:38
11 working with -- working as an expert witness here. 01:11:40
12 BY MR. HAMILTON: 01:11:43
13 Q. And when you say not until this project, 01:11:44
14 what valves have you encountered that use a string, 01:11:46
15 wire, or other type of flexible member to constrict 01:11:48
16 the lumen? 01:11:51
17 A. The valve described in '011 patents and 01:11:53
18 '0 -- other patents we've reviewed and referenced -- 01:12:03
19 Hartley, Eller, et cetera. 01:12:07
20 Q. So '011, you're referring to Inari's 01:12:11
21 patents; is that right? 01:12:14
22 A. Yes. 01:12:16
23 Q. And have you ever reviewed an Inari device? 01:12:16
24 A. I have not seen one. 01:12:23
25 Q. Have you ever reviewed any device that 01:12:24

1 includes a string, wire, or other type of flexible 01:12:27
2 member to constrict a lumen? 01:12:29
3 MR. STOWELL: Objection. Vague. 01:12:31
4 THE WITNESS: I have not seen one. 01:12:32
5 BY MR. HAMILTON: 01:12:33
6 Q. So other than the prior art references you 01:12:33
7 just referred to, you have no experience with a 01:12:36
8 valve that includes a string, wire, or flexible 01:12:38
9 member to constrict a lumen; is that correct? 01:12:43
10 MR. STOWELL: Objection. Misstates 01:12:46
11 testimony. 01:12:47
12 THE WITNESS: I don't have experience 01:12:48
13 designing or implementing a valve with that 01:12:49
14 description that you provided. 01:12:56
15 BY MR. HAMILTON: 01:12:57
16 Q. Have you ever tested a valve with that 01:12:57
17 description? 01:12:59
18 A. Not with a flexible actuating member or 01:13:01
19 filament, no. 01:13:06
20 Q. In connection with this matter, have you 01:13:08
21 ever tested a valve with a flexible string, wire, or 01:13:22
22 other type of flexible member to constrict a lumen? 01:13:25
23 A. No. 01:13:28
24 Q. If you could pick up Exhibit 1020. This is 01:13:28
25 the supplemental declaration. And because these are 01:13:38

1 from different matters, I'm going to try to refer to 01:13:45
2 the actual exhibit number in this matter. 01:13:49
3 So when I refer to Exhibit 1020, you'll 01:13:54
4 understand what I'm referring to; correct? 01:13:57
5 A. Yes. 01:13:58
6 Q. All right. 01:13:58
7 If you could turn to paragraph 33. 01:14:00
8 A. Okay. 01:15:29
9 Q. Before I ask about that, I just wanted to 01:15:30
10 clarify for your -- the last topic. 01:15:34
11 So have you ever seen images of a valve 01:15:37
12 that includes a string, wire, or other type of 01:15:39
13 flexible member? 01:15:41
14 A. Yes. 01:15:43
15 Q. And let me clarify that question. 01:15:44
16 Images of an actual device, an actual valve 01:15:48
17 as opposed to, for example, the images in the 01:15:52
18 patents that includes a string, wire, or other type 01:15:55
19 of flexible member to constrict a lumen. 01:15:59
20 MR. STOWELL: Objection. Vague. Compound. 01:16:01
21 THE WITNESS: I do remember seeing images 01:16:09
22 from a -- I guess it was the court -- court filing, 01:16:11
23 district court filing, maybe. I can't remember what 01:16:18
24 document that was in. 01:16:27
25 ///

1 BY MR. HAMILTON: 01:16:29
2 Q. Do you recall if that was before or after 01:16:30
3 you rendered your -- we'll say you signed your first 01:16:31
4 declaration in this matter, Exhibit 1003? 01:16:35
5 A. I don't remember. 01:16:44
6 Q. Okay. Going back to paragraph 33 of 01:16:44
7 Exhibit 1020. 01:17:06
8 In the first sentence you refer to a highly 01:17:10
9 sticky or gelatinous material that would not work 01:17:15
10 well with Figures 31 through 34 of Schaffer. 01:17:18
11 Do you see that? 01:17:22
12 A. Yes. 01:17:23
13 Q. So what I want to clarify is, what is the 01:17:23
14 highly sticky or gelatinous material you're 01:17:30
15 referring to in that sentence? 01:17:35
16 A. It's how Schaffer describes those 01:17:36
17 materials. I need to look at the Schaffer reference 01:17:39
18 to clarify that. 01:17:41
19 Q. Let's do that. 01:17:43
20 I'm going to hand you what's been 01:18:03
21 previously marked Exhibit 1005. 01:18:05
22 (Exhibit 1005 was previously marked by the 01:18:05
23 Certified Shorthand Reporter, and a copy is 01:18:05
24 attached hereto.) 01:18:16
25 ///

1 BY MR. HAMILTON: 01:18:16
2 Q. Is this the Schaffer reference you've just 01:18:16
3 referred to? 01:18:18
4 A. Yes. 01:18:19
5 Q. And I'll give you Exhibit 1008 just in case 01:18:20
6 you need it. 01:18:23
7 (Exhibit 1008 was previously marked by the 01:18:23
8 Certified Shorthand Reporter, and a copy is 01:18:23
9 attached hereto.) 01:18:37
10 BY MR. HAMILTON: 01:18:37
11 Q. And then if you could turn to Exhibit 1005, 01:18:37
12 the Schaffer reference. 01:18:40
13 At paragraph 59 at about the middle of that 01:18:42
14 paragraph you can see the sentence: "This provides 01:18:50
15 a material 166 that is extremely soft and compliant 01:18:54
16 and intrinsically sticky." 01:18:57
17 Do you see that? 01:19:00
18 A. Yes. 01:19:00
19 Q. Is that the material you're referring to as 01:19:00
20 the sticky or gelatinous material in paragraph 33 of 01:19:03
21 your declaration, Exhibit 1020? 01:19:08
22 A. Yes. In paragraph 59 they give as examples 01:19:14
23 of another option, another option being in the range 01:19:19
24 between 15 and 20 Shore on the 00 scale. This 01:19:25
25 provides a material 166 that is extremely soft and 01:19:30

1 compliant and intrinsically sticky. 01:19:34
2 Q. Okay. So now looking back at your 01:19:42
3 declaration, paragraph 33, the highly sticky or 01:19:44
4 gelatinous material referenced in paragraph 33, that 01:19:49
5 would not work well with the seal modules disclosed 01:19:52
6 in Figures 31 through 34, that material 166 we just 01:19:54
7 identified in Schaffer; correct? 01:19:59
8 A. In Schaffer they provide a wide range of 01:20:00
9 material properties, including the first part of 01:20:08
10 paragraph 59, which says that can include materials 01:20:12
11 that are highly elastic, deformable, compliant, yet 01:20:15
12 virtually noncompressible. 01:20:20
13 And they give examples of vinyl, silicone, 01:20:21
14 polyurethane. 01:20:24
15 So they're listing a type that is in the 01:20:30
16 first case options that are in the range of 5 to 01:20:37
17 15 Shore A and then later talk about the Shore 00 01:20:40
18 options that are even softer, extremely soft, 01:20:45
19 compliant, and intrinsically sticky. 01:20:52
20 Q. So then is it -- is it fair to say that 01:20:59
21 your testimony is that this material 166 identified 01:21:01
22 in paragraph 59 of Schaffer is the highly sticky and 01:21:07
23 gelatinous material that would not work well with 01:21:16
24 the seal modules disclosed in Figures 1 -- 31 01:21:18
25 through 34? Excuse me. 01:21:22

1 A. They give a range of options. And what I'm 01:21:24
2 saying is that the most gelatinous -- I don't know 01:21:26
3 if they use that word there. Maybe it's later -- 01:21:33
4 sticky, softest materials would probably not work 01:21:36
5 appropriately with the design shown in Figure 31 01:21:39
6 through 34 because those must retract on their own 01:21:44
7 to an uncollapsed configuration when the tension is 01:21:49
8 released by the actuating members. 01:21:52
9 So 165 could have properties shown in the 01:22:02
10 beginning of paragraph 59 and it could have 01:22:05
11 properties that are much softer and compliant. 01:22:08
12 Q. So there you said 165. Before we were 01:22:11
13 talking about material 166. 01:22:14
14 Is there a difference between material 165 01:22:15
15 and 166? 01:22:17
16 A. Well, they use 165 for the third central 01:22:19
17 seal member to denote the third central seal member 01:22:28
18 and they use 166, I believe, as just the material 01:22:33
19 itself. 01:22:37
20 Q. And for that material itself, 166, is it 01:22:43
21 your testimony that there is a range of properties 01:22:46
22 of that material that would not be used in 01:22:49
23 Figures 31 through 34, the embodiment in Figures 31 01:22:53
24 through 34? 01:22:56
25 A. Can you repeat the question? 01:22:58

1 Q. So for that material 166, is it your 01:22:59
2 testimony that there is a range of properties of 01:23:07
3 that material 166 that would not be used in the 01:23:09
4 embodiment of Figures 31 through 34? 01:23:14
5 A. I think a person of skill in the art would 01:23:21
6 have understood that an extremely soft, gelatinous, 01:23:23
7 sticky, self-closing material -- they use that term 01:23:28
8 later in that paragraph -- would probably not work 01:23:36
9 well for a seal module that had to recover and open 01:23:39
10 once the force of the filaments was released. 01:23:45
11 Q. So you just said would not work well, but 01:23:51
12 it could be used, couldn't it? 01:23:53
13 MR. STOWELL: Objection. Vague. 01:23:56
14 THE WITNESS: I think a person of skill in 01:23:57
15 the art would not find that it works well. If it's 01:24:01
16 stuck to itself, it won't reopen. It wouldn't work, 01:24:09
17 it seems to me. 01:24:12
18 BY MR. HAMILTON: 01:24:13
19 Q. So you just said it wouldn't work. That 01:24:22
20 means you could not use that material 166 in the 01:24:25
21 embodiments of Figures 31 through 34; is that right? 01:24:27
22 MR. STOWELL: Objection. Asked and 01:24:31
23 answered. 01:24:32
24 THE WITNESS: Well, in my declaration I 01:24:37
25 said it would not work well. Could it work at some 01:24:38

1 level? I don't know. Depends on a lot of other 01:24:41
2 characteristics of the material, the other aspects 01:24:45
3 of the design. 01:24:51
4 BY MR. HAMILTON: 01:25:09
5 Q. Could a person of ordinary skill in the 01:25:09
6 art, as that term has been defined in your 01:25:12
7 declaration and in this matter, have been able to 01:25:14
8 construct an embodiment following Figures 31 through 01:25:18
9 34 of Schaffer that included material 166 that is 01:25:21
10 extremely soft and compliant and intrinsically 01:25:24
11 sticky? 01:25:28
12 A. As I said, I don't think it would work well 01:25:30
13 if you chose a material that was in that category of 01:25:34
14 the softest, most gelatinous range that they provide 01:25:38
15 in paragraph 59. 01:25:42
16 Q. So it wouldn't work well. You keep saying 01:25:45
17 wouldn't work well, but you could design an 01:25:49
18 embodiment that would work, couldn't you? 01:25:51
19 MR. STOWELL: Objection. Misstates 01:25:53
20 testimony. 01:25:54
21 THE WITNESS: Yeah, I don't know. 01:25:56
22 BY MR. HAMILTON: 01:26:01
23 Q. So let's turn to paragraph 34 of 01:26:51
24 Exhibit 1020, the very next paragraph. 01:26:53
25 Four lines down you used the phrase 01:27:22

1 "conform sufficiently to the size or the shape of 01:27:26
2 the tool inserted." 01:27:30
3 Do you see that? 01:27:31
4 A. Yes. 01:27:32
5 Q. What do you mean by conform sufficiently to 01:27:32
6 the size or the shape of the tool inserted? 01:27:36
7 A. That depends on Schaffer's U-shape 01:27:43
8 actuating members. Depending on their material 01:27:47
9 properties, dimensions, how they're attached, that 01:27:54
10 they may not sufficiently conform to every 01:27:56
11 conceivable tool that could be inserted. 01:28:03
12 Q. What material properties and dimensions 01:28:05
13 would allow those actuating members, 55, to 01:28:42
14 conform -- to sufficiently conform to the size or 01:28:48
15 shape of a tool inserted? 01:28:50
16 A. I don't know. 01:28:55
17 Q. If each of the actuating members 55 -- and 01:29:24
18 you can look at that figure that you have right 01:29:29
19 there in that -- on that same page 19 in the middle 01:29:30
20 of paragraph 34, if those were strings, would those 01:29:34
21 conform sufficiently to the size or shape of the 01:29:41
22 tool inserted? 01:29:44
23 MR. STOWELL: Objection. Outside the 01:29:49
24 scope. 01:29:50
25 THE WITNESS: I haven't really considered 01:29:52

1 replacing those U-shaped members with two strings. 01:29:53
2 In later, of course, we talk about replacing it with 01:29:59
3 a single string that's wrapped around the sealing 01:30:02
4 tube. 01:30:08
5 BY MR. HAMILTON: 01:30:08
6 Q. And why couldn't you just replace each of 01:30:09
7 those members with a string, then include two 01:30:12
8 strings? 01:30:18
9 MR. STOWELL: Objection. Outside the 01:30:19
10 scope. 01:30:20
11 THE WITNESS: I didn't say I couldn't. I 01:30:20
12 said I didn't consider it in this declaration. 01:30:22
13 BY MR. HAMILTON: 01:30:24
14 Q. So a person of skill in the art could 01:30:24
15 replace both those U-shaped members with a string or 01:30:25
16 a wire that was flexible enough to conform 01:30:30
17 sufficiently to the size and the shape of the tools 01:30:33
18 inserted; is that correct? 01:30:35
19 MR. STOWELL: Objection. Outside the 01:30:36
20 scope. 01:30:37
21 THE WITNESS: I don't know. I didn't 01:30:38
22 consider it. And it also depends on where -- where 01:30:41
23 it's attached to the buttons. 01:30:44
24 BY MR. HAMILTON: 01:30:49
25 Q. Would replacing the U-shaped actuating 01:30:53

1 members each with a string conform sufficiently to 01:30:56
2 the size and the shape of the tool inserted? 01:31:00
3 MR. STOWELL: Objection. Outside the 01:31:03
4 scope. 01:31:04
5 THE WITNESS: It depends on the tools. 01:31:08
6 Depends on the tubing. Depends on spring tension 01:31:09
7 force. Depends on where they would be attached. 01:31:14
8 It's -- I did not really consider that for this 01:31:18
9 declaration. 01:31:21
10 BY MR. HAMILTON: 01:31:21
11 Q. Can you consider it now? 01:31:22
12 A. I think I just did. 01:31:23
13 Q. So a person of skill in the art could 01:31:42
14 replace the U-shape -- each of the U-shaped 01:31:44
15 actuating members with a string or some other 01:31:48
16 flexible material like a wire, and it would 01:31:50
17 sufficiently -- excuse me -- conform sufficiently to 01:31:54
18 the size or shape of the tool inserted; is that 01:31:57
19 right? 01:31:59
20 MR. STOWELL: Objection. Asked and 01:32:00
21 answered. Outside the scope. 01:32:00
22 THE WITNESS: Yeah, I don't know. It would 01:32:02
23 depend on the -- what's being inserted, what the 01:32:03
24 dimensions are, what the tubing characteristics are, 01:32:05
25 and the string, I guess, also. 01:32:10

1 BY MR. HAMILTON: 01:32:12
2 Q. And couldn't a person of ordinary skill in 01:32:12
3 the art figure out those other variables you just 01:32:15
4 mentioned in order to make it -- make the string or 01:32:18
5 wire member conform sufficiently to the size or 01:32:22
6 shape of the tool inserted? 01:32:24
7 MR. STOWELL: Same objection. 01:32:26
8 THE WITNESS: Yeah, I don't know. I didn't 01:32:32
9 consider it here. 01:32:33
10 BY MR. HAMILTON: 01:32:40
11 Q. And a moment ago I asked if you could 01:32:41
12 consider it now, and you said you already did. 01:32:44
13 So what did you mean by that, you've 01:32:47
14 already considered it? 01:32:49
15 A. Can you read back my answer just before 01:32:51
16 that? 01:32:54
17 Q. I asked "Can you consider it now?" 01:33:28
18 You answered "I think I just did." 01:33:31
19 What did you mean by that? 01:33:32
20 A. I think it was before that. 01:33:33
21 Q. Your answer immediately before that was "I 01:33:36
22 did not really consider that for this declaration." 01:33:39
23 MR. STOWELL: That's not the complete 01:33:41
24 answer. 01:33:42
25 Objection. 01:33:44

1 For the record, the complete answer said: 01:33:50
2 "It depends on the tools, depends on the tubing, 01:33:51
3 depends on string tension force, depends on where 01:33:54
4 they would be attached. It's -- I did not really 01:33:57
5 consider that for this declaration." 01:34:00
6 MR. HAMILTON: And then I asked, "Can you 01:34:03
7 consider it now?" and you said, "I think I just 01:34:05
8 did." 01:34:07
9 What does that mean? 01:34:07
10 THE WITNESS: The same I said before, which 01:34:11
11 was it depends on the tubing characteristics, the 01:34:13
12 mechanical characteristics of the components, 01:34:17
13 string, actuator, sutures. 01:34:22
14 BY MR. HAMILTON: 01:34:25
15 Q. And could a person of ordinary skill in the 01:34:26
16 art determine what tubing characteristics, 01:34:29
17 mechanical characteristics, string, actuator, 01:34:32
18 sutures, would allow a string in place of each of 01:34:35
19 the actuating members 55 to conform sufficiently to 01:34:41
20 the size or shape of the tool inserted? 01:34:45
21 MR. STOWELL: Objection. Asked and 01:34:47
22 answered. Outside the scope. 01:34:48
23 THE WITNESS: I think a person of ordinary 01:34:52
24 skill in the art would consider those things and 01:34:55
25 could, along with other things. Like, a 01:35:00

1 single-suture line wrapping around the tubing would 01:35:01
2 be another consideration that a person of ordinary 01:35:09
3 skill would try. 01:35:14
4 BY MR. HAMILTON: 01:35:16
5 Q. So a person of ordinary skill would try 01:35:20
6 both of those scenarios you just described; is that 01:35:24
7 right? 01:35:27
8 MR. STOWELL: Objection. Outside the 01:35:27
9 scope. Misstates testimony. 01:35:29
10 THE WITNESS: I didn't consider it here. I 01:35:32
11 think it's possible that a person of ordinary skill 01:35:38
12 could try multiple different design options to 01:35:41
13 optimize sealing and recovery of the tubing. 01:35:45
14 BY MR. HAMILTON: 01:35:52
15 Q. And those different options -- would a 01:35:54
16 person of ordinary skill in the art expect that they 01:35:59
17 would successfully seal? 01:36:02
18 A. That would be the design goal, to create a 01:36:04
19 seal, but also address other design goals like 01:36:07
20 ability to recover when the tension is released. 01:36:11
21 Q. So a moment ago you said "a single-suture 01:36:14
22 line wrapping around the tubing." 01:36:28
23 Do you recall saying that? 01:36:31
24 A. Yes. 01:36:32
25 Q. Could one skilled in the art replace one of 01:36:32

1 the U-shaped members, actuating members 55, with a 01:36:42
2 single-suture line wrapping around the tubing, and 01:36:47
3 that returns to the same button so that both ends of 01:36:54
4 that line are attached to the same button? 01:36:56
5 MR. STOWELL: Objection. Outside the 01:36:58
6 scope. 01:36:59
7 THE WITNESS: What we have shown is, using 01:37:02
8 Eller or Hartley, that a single-suture line would be 01:37:08
9 able to wrap around the sealing member and attach to 01:37:17
10 the opposing button, not to the same button. 01:37:21
11 BY MR. HAMILTON: 01:37:24
12 Q. So Eller and Hartley don't have an opposing 01:37:24
13 button; correct? 01:37:29
14 A. They do not have two buttons, no. 01:37:31
15 Q. And could one skilled in the art take a 01:37:33
16 single-suture line from one button in Schaffer, wrap 01:37:37
17 it around the tubing, completely around the tubing, 01:37:43
18 so it goes 360 degrees around the tubing and back to 01:37:48
19 that same button? 01:37:51
20 MR. STOWELL: Objection. Outside the 01:37:53
21 scope. Incomplete hypothetical. 01:37:55
22 THE WITNESS: If I'm understanding what 01:37:58
23 you're saying right, I don't think that would be a 01:38:04
24 feasible design. 01:38:06
25 ///

1 BY MR. HAMILTON: 01:38:07
2 Q. And why not? 01:38:07
3 A. Because it wouldn't compress the tubing 01:38:09
4 appropriately. 01:38:14
5 Q. Why wouldn't it compress the tubing 01:38:15
6 appropriately? 01:38:18
7 A. It would pull it to one side. It wouldn't 01:38:19
8 compress it circumferentially. 01:38:30
9 Q. So if the actuating material, the actuating 01:38:42
10 member -- string, wire, whatever it is -- pulls the 01:38:46
11 tube to the side, that would not be a -- a person of 01:38:49
12 ordinary skill in the art would not adopt that 01:38:54
13 design; is that correct? 01:38:57
14 MR. STOWELL: Objection. Outside the 01:38:58
15 scope. Misstates testimony. 01:38:59
16 THE WITNESS: I haven't considered that in 01:39:00
17 this document. Doesn't seem like it would make a 01:39:03
18 sensible design to me. 01:39:09
19 BY MR. HAMILTON: 01:39:56
20 Q. If you can take a look at your Exhibit 1003 01:39:56
21 in front of you, page 35. 01:39:59
22 Do you see Figures 16 and 17 were 01:40:11
23 reproduced on page 35? 01:40:21
24 A. Yes. 01:40:22
25 Q. Isn't that exactly what's shown in 01:40:22

1 Figure 16 and 17, a single wire wrapped around the 01:40:24
2 tube pulling the tube to one side? 01:40:30
3 MR. STOWELL: Objection. Vague. 01:40:39
4 THE WITNESS: I don't see that as what you 01:40:42
5 were describing to me in looking at Figure 31 in 01:40:43
6 Schaffer. 01:40:48
7 BY MR. HAMILTON: 01:40:48
8 Q. And what's the difference? 01:40:48
9 A. I don't know. They seem to be different 01:40:49
10 mechanisms of action here. 01:40:56
11 Q. Eller has a single rotatable actuator; 01:41:04
12 correct? 01:41:11
13 MR. STOWELL: Objection. Vague. 01:41:14
14 THE WITNESS: Actuator 18 as shown in 01:41:23
15 Figure 2 is the rotating portion. 01:41:25
16 BY MR. HAMILTON: 01:41:28
17 Q. Was that a "yes"? 01:41:28
18 A. Yes. Actuator 18 rotates to actuate the 01:41:29
19 valve. 01:41:36
20 Q. And then in Figure 17 reproduced on page 35 01:41:36
21 of your Exhibit 1003, you see what's labeled 422. 01:41:40
22 Is that attached to the actuator, the 01:41:51
23 single rotatable actuator? 01:41:53
24 MR. STOWELL: Objection. Compound. 01:41:55
25 THE WITNESS: Can you ask the question 01:42:20

again? 01:42:22
BY MR. HAMILTON: 01:42:22
Q. What's labeled as 422 in Figure 17 on 01:42:23
page 35 of your Exhibit 1003, is that attached to 01:42:26
that single rotatable actuator in Eller? 01:42:31
A. It's not showing the actuator, but I 01:42:42
believe that does get attached to the actuator. 01:42:46
This is just showing the housing surrounding the 01:42:49
sleeve. 01:42:51
Q. So here we have a single -- let's call it 01:42:52
flexible wire that extends and wraps around a 01:43:04
tubular member, and it's attached to a single 01:43:10
actuator; correct? 01:43:13
A. Yes. It would appear that the 422 wire 01:43:16
member attaches to the actuator. 01:43:21
Q. And do you believe this would seal? 01:43:24
MR. STOWELL: Objection. Vague. 01:43:29
THE WITNESS: I think Eller shows 01:43:32
cross-sections of the device sealing. 01:43:35
BY MR. HAMILTON: 01:43:38
Q. And would this pull the tubular member to 01:43:38
one side? 01:43:42
MR. STOWELL: Objection. Vague. Outside 01:43:47
the scope. 01:43:56
THE WITNESS: There's not much room for it 01:43:57

1 to move, but I'm not sure how it would collapse. I 01:44:00
2 would need to look at Eller's cross-sections to see 01:44:04
3 how they show their cross-sections. 01:44:07
4 BY MR. HAMILTON: 01:44:09
5 Q. Could a person of skill in the art design 01:44:09
6 this tube member so that it is not pulled to one 01:44:12
7 side in this configuration shown in Figure 17? 01:44:15
8 MR. STOWELL: Objection. Outside the 01:44:17
9 scope. 01:44:19
10 THE WITNESS: Yeah, I don't know. I 01:44:19
11 haven't considered that. 01:44:22
12 BY MR. HAMILTON: 01:44:22
13 Q. Let's look at the previous page, 34. 01:44:25
14 There's a figure there. 01:44:28
15 You recognize that figure? 01:44:30
16 A. Yeah, it's Hartley's Figure 3. 01:44:35
17 Q. In that configuration -- 01:44:39
18 A. Sorry. This is messed up. It's stuck 01:44:41
19 under my roller or something. 01:44:45
20 Q. In that configuration of Hartley, would the 01:44:49
21 tubular member be pulled to one side? 01:44:54
22 MR. STOWELL: Objection. Vague. 01:44:56
23 THE WITNESS: Yeah, I don't know. I 01:45:05
24 haven't considered that. 01:45:06
25 ///

1 BY MR. HAMILTON: 01:45:07
2 Q. The item labeled "string filament" in that 01:45:07
3 figure, you see that? 01:45:11
4 A. Yes. 01:45:12
5 Q. That's offset from the center of the 01:45:12
6 tubular member. 01:45:17
7 Do you see that? 01:45:18
8 A. Yes. 01:45:20
9 Q. So pulling on that what's labeled "string 01:45:21
10 filament," wouldn't that pull the tubular member to 01:45:25
11 the side? 01:45:29
12 MR. STOWELL: Objection. Vague. 01:45:30
13 THE WITNESS: Yeah, I'm not sure. Depends 01:45:31
14 on material properties, space in there. It's not 01:45:34
15 clear to me what would happen. 01:45:38
16 BY MR. HAMILTON: 01:45:40
17 Q. So what I'm trying to understand is, with 01:45:40
18 respect to Schaffer, you said one wouldn't put a 01:45:42
19 single string, wrap it around the tube and have it 01:45:45
20 come back to the same button because it would be 01:45:48
21 pulled to the side, and yet that's exactly what's 01:45:50
22 shown in Hartley and in Eller. And now you're 01:45:52
23 telling me you haven't thought about it. 01:45:55
24 MR. STOWELL: Objection. Misstates 01:45:58
25 testimony. Argumentative. 01:45:59

1 THE WITNESS: I hadn't considered putting a 01:46:07
2 single line, single actuating filament around the 01:46:09
3 Schaffer valve, no. 01:46:18
4 BY MR. HAMILTON: 01:46:19
5 Q. So what I'm trying to understand is, why 01:46:36
6 would one skilled in the art, instead of replacing 01:46:41
7 each U-shaped actuating member with a single string, 01:46:45
8 put a single string -- let me withdraw that 01:46:51
9 question. It was poorly worded. 01:46:54
10 What I'm trying to understand is why one 01:46:56
11 skilled in the art wouldn't replace each U-shaped 01:46:58
12 actuating member with a single string in Schaffer 01:47:01
13 and instead put one string in place of both U-shaped 01:47:04
14 actuating members in Schaffer. 01:47:10
15 And it seems to me you're saying you have 01:47:13
16 never considered replacing each with a U-shaped 01:47:15
17 actuating members; is that correct? 01:47:18
18 MR. STOWELL: Objection. Misstates 01:47:19
19 testimony. Outside the scope. 01:47:20
20 THE WITNESS: As I show in -- on page 20, 01:47:54
21 the second image down, if those actuating members 01:48:00
22 got more and more flexible, more like a thread or a 01:48:08
23 suture, they could still not seal as well because of 01:48:14
24 the attachment points. 01:48:21
25 If you had a single suture that went across 01:48:23

1 and wrapped around one time and it attached to 01:48:27
2 opposing buttons, that seems like a very simple way 01:48:31
3 to modify the design to create a better seal around 01:48:35
4 smaller tools. 01:48:46
5 BY MR. HAMILTON: 01:48:49
6 Q. And I just want to clarify for the record. 01:48:49
7 You're now looking back at Exhibit 1020, 01:48:50
8 the figures on page 20; is that right? 01:48:54
9 A. Yes. 01:48:57
10 Q. So is it your testimony that one skilled in 01:48:58
11 the art would not replace each U-shaped member with 01:49:03
12 a string -- 01:49:06
13 MR. STOWELL: Objection. 01:49:08
14 BY MR. HAMILTON: 01:49:10
15 Q. -- for the reasons shown on this figure? 01:49:10
16 MR. STOWELL: Objection. Misstates 01:49:12
17 testimony. Outside the scope. 01:49:13
18 THE WITNESS: I'm saying it would seem to 01:49:14
19 be a pretty simple substitution to replace the two 01:49:17
20 actuating members with a single string that wraps 01:49:22
21 around one time and attaches to the opposing button. 01:49:27
22 And it may seal better as the tools are smaller and 01:49:36
23 smaller. 01:49:44
24 BY MR. HAMILTON: 01:49:56
25 Q. So I understand your testimony that it 01:49:56

1 would be simple to put a single string and attach 01:49:58
2 each end to a different button. What I'm trying to 01:50:00
3 understand is why wouldn't one skilled in the art 01:50:03
4 replace each actuator with a string as opposed to 01:50:05
5 taking a single string and spanning it between two 01:50:09
6 buttons? 01:50:12
7 MR. STOWELL: Objection. Outside the 01:50:13
8 scope. Asked and answered. 01:50:14
9 THE WITNESS: I'm kind of considering the 01:50:32
10 lower image on page 20 as -- as that actuator could 01:50:35
11 be extremely flexible, if that would be similar -- 01:50:40
12 similar to changing out those two Schaffer actuators 01:50:43
13 with a suture line, let's say. 01:50:48
14 So I think we are showing that as an option 01:50:52
15 there. 01:50:54
16 BY MR. HAMILTON: 01:51:02
17 Q. So one skilled in the art would replace 01:51:02
18 each U-shaped actuating member in Schaffer with a 01:51:05
19 string as shown in the figure -- the bottom figure 01:51:09
20 on page 20 of your Exhibit 1020; is that right? 01:51:14
21 MR. STOWELL: Objection. Misstates 01:51:17
22 testimony. Asked and answered. 01:51:18
23 THE WITNESS: I think there are many 01:51:20
24 different options that a person of skill in the art 01:51:21
25 could attempt. A very simple one would be a single 01:51:23

1 filament wrapping one time around to the opposing 01:51:28
2 buttons. Other designs could be attempted, of 01:51:31
3 course. 01:51:39
4 BY MR. HAMILTON: 01:51:40
5 Q. Would one skilled in the art be motivated 01:51:41
6 to make this change that's shown in the bottom 01:51:44
7 figure that you just described on page 20 of your 01:51:47
8 Exhibit 1020? 01:51:49
9 A. I think if the valve is not sealing well, 01:51:52
10 then other options would be considered, as I'm 01:52:01
11 showing there. 01:52:05
12 Q. So what I'm trying to understand is, why 01:52:05
13 would one skilled in the art choose a single string 01:52:07
14 in place of the two actuators as opposed to one 01:52:10
15 string replacing each actuator? 01:52:15
16 MR. STOWELL: Objection. Asked and 01:52:17
17 answered. Outside the scope. 01:52:18
18 THE WITNESS: It certainly seemed like a 01:52:24
19 simple substitution and something easy and quick to 01:52:26
20 try. 01:52:29
21 BY MR. HAMILTON: 01:52:29
22 Q. And there are multiple substitutions to 01:52:30
23 make; is that right? 01:52:33
24 MR. STOWELL: Objection. Vague. 01:52:35
25 THE WITNESS: I don't know. 01:52:37

1 BY MR. HAMILTON: 01:52:38
2 Q. You could replace each actuator with a 01:52:38
3 string. That's one option; correct? 01:52:40
4 A. That may be a possibility that a person of 01:52:49
5 skill in the art would consider. 01:52:52
6 Q. When you say may be a possibility, are you 01:52:54
7 testifying they would consider it, or they would 01:53:03
8 not? 01:53:05
9 MR. STOWELL: Objection. Asked and 01:53:06
10 answered. 01:53:08
11 THE WITNESS: I don't know if they would or 01:53:08
12 not. I didn't really address it in this 01:53:11
13 declaration. 01:53:14
14 BY MR. HAMILTON: 01:53:16
15 Q. So the only option you addressed in the 01:53:18
16 declaration is a single string attached to two 01:53:20
17 separate buttons; is that right? 01:53:23
18 A. I believe in the '012 -- yeah, '012 01:53:33
19 declaration, Exhibit 1003, I also discuss that other 01:53:45
20 aspects can be -- maybe it was in prior 01:53:52
21 declarations -- depositions, sorry, prior 01:54:00
22 depositions where I explained that other aspects 01:54:03
23 could be optimized between the spring force, the 01:54:06
24 actuator design and material properties, and the 01:54:10
25 seal module properties. 01:54:15

1 Q. So does that mean there are many options to 01:54:17
2 improve the sealing of Schaffer that don't include 01:54:40
3 replacing Schaffer's U-shaped actuating members with 01:54:43
4 a string or a wire? 01:54:48
5 A. It would depend on the size of the tools 01:54:50
6 going through, the shape of the tools, what type of 01:54:52
7 optimization might be necessary. But certainly one 01:54:58
8 option would be to simply take a string and wrap it 01:55:03
9 around the central sealing member. 01:55:07
10 Q. And is it fair to say that there are other 01:55:20
11 options with respect to taking a string or a wire 01:55:22
12 and configuring it differently around the sealing 01:55:27
13 member? So for example, two U-shaped strings? 01:55:31
14 MR. STOWELL: Objection. Vague. Compound. 01:55:34
15 Uh. 01:55:39
16 THE WITNESS: Yeah, I haven't really 01:55:39
17 considered two U-shaped strings. 01:55:41
18 BY MR. HAMILTON: 01:55:42
19 Q. So you have considered one option; is that 01:55:42
20 right? 01:55:44
21 MR. STOWELL: Objection. Misstates 01:55:44
22 testimony. 01:55:46
23 THE WITNESS: I've said in certain places 01:55:49
24 that we -- a person skilled in the art would have 01:55:56
25 aspects of the design that could be modified in 01:56:00

1 order to try to optimize a design, minimize leaks to 01:56:05
2 be able to get good opening when the force is 01:56:10
3 removed, including the ones I just mentioned, spring 01:56:15
4 force, et cetera. 01:56:19
5 So there are -- those are some of the other 01:56:22
6 options that I think I've mentioned in depositions 01:56:25
7 or declarations. 01:56:28
8 BY MR. HAMILTON: 01:56:35
9 Q. And other than connecting a single string 01:56:35
10 or wire between two different buttons, are there 01:56:38
11 other configurations of the string or wire that a 01:56:41
12 person of skill in the art would consider? 01:56:45
13 MR. STOWELL: Objection. Outside the 01:56:47
14 scope. 01:56:49
15 THE WITNESS: I don't know. 01:56:49
16 BY MR. HAMILTON: 01:56:50
17 Q. You didn't consider any of those other 01:56:50
18 configurations; is that correct? 01:56:52
19 A. Which other configurations are you talking 01:56:54
20 about? 01:56:57
21 Q. For example, two U-shaped strings. 01:56:57
22 A. Yeah, I've said my declaration didn't 01:57:01
23 include replacing those with two U-shaped strings. 01:57:07
24 Q. Another example would be a single string 01:57:10
25 that is attached on one end to a button, wraps all 01:57:12

1 the way around a tubular member, and then is 01:57:15
2 attached back to the same button at the other end. 01:57:18
3 You didn't consider that option as well; is 01:57:21
4 that right? 01:57:23
5 A. I did not consider that. 01:57:23
6 Q. So going back to page 19 of Exhibit 1020, 01:57:24
7 the portion above the figure, and back to that 01:58:04
8 phrase "conform sufficiently to the size or the 01:58:12
9 shape of the tool inserted." 01:58:16
10 And I'll ask you the question here in just 01:58:17
11 a minute. 01:58:19
12 Are you at that spot? 01:58:20
13 A. Yes. 01:58:21
14 Q. Is it fair to say that that's the reason 01:58:22
15 you believe that one skilled in the art would 01:58:27
16 replace Schaffer's U-shaped actuating members with a 01:58:29
17 string or a wire, because a string or a wire would 01:58:32
18 conform sufficiently to the size and the shape of 01:58:35
19 the tool inserted? 01:58:37
20 A. Yeah. As I say on the end of page 20: 01:58:58
21 "Because Hartley's string or Eller's wire would be 01:59:01
22 wrapped around Schaffer's seal module, with each 01:59:05
23 respective end secured to the opposing actuator 01:59:08
24 buttons, the string/wire member would be better able 01:59:10
25 to conform to varying-diameter tools in this 01:59:12

1 situation." 01:59:19
2 BY MR. HAMILTON: 01:59:32
3 Q. So if there's a configuration of a wire or 01:59:32
4 a string that would be better able to conform to 01:59:35
5 varying-diameter tools, that would motivate one 01:59:38
6 skilled in the art to make that modification; is 01:59:42
7 that right? 01:59:45
8 MR. STOWELL: Objection. Vague. 01:59:46
9 THE WITNESS: If the current design does 01:59:48
10 not conform sufficiently to create a good seal, that 01:59:49
11 would be the motivation to try other design options. 01:59:55
12 MR. HAMILTON: Why don't we take a 02:00:25
13 five-minute break. 02:00:28
14 MR. STOWELL: Okay. 02:00:28
15 THE VIDEOGRAPHER: Okay. Going off record. 02:00:29
16 Time, 2:00 p.m. 02:00:31
17 (Recess.) 02:00:34
18 THE VIDEOGRAPHER: We are back on the 02:07:23
19 record. The time is 2:07 p.m. 02:07:24
20 BY MR. HAMILTON: 02:07:27
21 Q. Do you understand you're still under oath? 02:07:27
22 A. Yes. 02:07:28
23 Q. Did you discuss or communicate with anyone 02:07:29
24 regarding your testimony during the break? 02:07:34
25 A. No. 02:07:35

1 Q. Did you talk to anyone about this matter 02:07:35
2 during the break? 02:07:37
3 A. No. 02:07:38
4 Q. Look at any documents? 02:07:38
5 A. No. 02:07:40
6 Q. Turning back to Exhibit 1020, page 20, the 02:07:40
7 two figures we were just referring to. 02:07:57
8 A. Yes, sir. 02:08:02
9 Q. If a material that was highly elastic, 02:08:03
10 deformable, compliant, and yet virtually 02:08:17
11 noncompressible was included as an inner seal member 02:08:20
12 in the tube shown -- the seal module, excuse me, 02:08:23
13 shown in those two figures, would that form a seal? 02:08:32
14 MR. STOWELL: Objection. Vague. 02:08:34
15 THE WITNESS: Depends on the material 02:08:39
16 properties and the dimensions and the other 02:08:40
17 parameters that create the seal. 02:08:44
18 BY MR. HAMILTON: 02:08:47
19 Q. And a person of ordinary skill in the art 02:08:47
20 could figure out those material properties, 02:08:50
21 dimensions, et cetera, to form a seal using an 02:08:52
22 internal seal member; correct? 02:08:56
23 MR. STOWELL: Objection. Vague. 02:08:57
24 THE WITNESS: That would certainly be the 02:09:06
25 goal of a design, would be to come up with a design 02:09:09

1 that is able to seal and meet the other design 02:09:12
2 requirements. 02:09:15
3 BY MR. HAMILTON: 02:09:16
4 Q. And could a person of ordinary skill in the 02:09:16
5 art accomplish that goal by including an internal 02:09:19
6 seal member that's highly compliant, deformable, yet 02:09:22
7 virtually noncompressible in the seal module shown 02:09:25
8 in these two figures on page 20? 02:09:31
9 MR. STOWELL: Objection. Vague. 02:09:34
10 THE WITNESS: Those are descriptive words 02:09:36
11 for a polymer. Not really sufficient to determine 02:09:40
12 if -- determine what the material properties and 02:09:46
13 characteristics would be to see if that would work. 02:09:53
14 BY MR. HAMILTON: 02:09:55
15 Q. If you look at page 59 of Exhibit 1005, 02:09:55
16 that's Schaffer -- excuse me -- paragraph 59, that's 02:09:59
17 the paragraph we were looking at earlier. 02:10:03
18 Schaffer shows -- says: "The third central 02:10:08
19 seal member 165 includes material 166 that is highly 02:10:10
20 elastic, deformable, compliant, and yet virtually 02:10:14
21 noncompressible." 02:10:19
22 Do you see that? 02:10:20
23 A. Yes. It starts with "in one embodiment," 02:10:21
24 and continues on with what you read. 02:10:33
25 Q. And do you understand what that means, 02:10:35

1 "highly elastic, deformable, compliant, and yet 02:10:37
2 virtually noncompressible"? 02:10:40
3 A. I think these are general terms to describe 02:10:42
4 the materials that they're listing as possible 02:10:51
5 materials that they list below -- vinyl, silicone, 02:10:53
6 polyurethane, for instance. 02:10:58
7 Q. And would a person of ordinary skill in the 02:10:59
8 art be able to select a material that has those 02:11:02
9 properties, that if it was included in the seal 02:11:04
10 module shown on page 20 in the two figures on 20, 02:11:08
11 that those gaps wouldn't form and that module would 02:11:13
12 be sealed? 02:11:17
13 MR. STOWELL: Objection. Vague. 02:11:19
14 THE WITNESS: I think it depends on the 02:11:21
15 seal member properties, but also on the size of the 02:11:25
16 tool that's being inserted, the location of the 02:11:31
17 attachment points for the actuating members, the 02:11:35
18 mechanical characteristics of the actuating members, 02:11:41
19 probably other characteristics. 02:11:48
20 BY MR. HAMILTON: 02:11:54
21 Q. So you said it depends on other 02:11:54
22 characteristics. 02:11:57
23 Would a person of skill in the art 02:11:57
24 understand what those characteristics are and be 02:11:59
25 able to select a material that's highly elastic, 02:12:02

1 deformable, compliant, and yet virtually 02:12:05
2 noncompressible as disclosed in Schaffer so that the 02:12:08
3 two figures on page 20 of your declaration, 1020, 02:12:16
4 would seal? 02:12:21
5 MR. STOWELL: Objection. Asked and 02:12:22
6 answered. Outside the scope. 02:12:23
7 THE WITNESS: It's difficult to say without 02:12:31
8 knowing the size of the tools inserted. I think a 02:12:35
9 person of skill in the art would find it difficult 02:12:38
10 to create a perfect -- a perfectly sealing 02:12:41
11 hemostatic valve in all cases as shown in the 02:12:49
12 figures on page 20. 02:12:55
13 BY MR. HAMILTON: 02:12:57
14 Q. It's quite complicated, isn't it? 02:12:58
15 MR. STOWELL: Objection. Vague. 02:13:00
16 THE WITNESS: What's complicated? 02:13:10
17 BY MR. HAMILTON: 02:13:12
18 Q. You just said there's all these other cases 02:13:12
19 in terms of size of the tool, materials, et cetera, 02:13:17
20 such that one skilled in the art would find it 02:13:20
21 difficult to include a material that forms a seal; 02:13:22
22 is that right? 02:13:25
23 MR. STOWELL: Objection. Misstates 02:13:25
24 testimony. 02:13:26
25 THE WITNESS: I think a person of skill in 02:13:31

1 the art has several parameters to work with, and it 02:13:33
2 would be difficult to find a perfect combination 02:13:37
3 that seals in all cases. 02:13:43
4 BY MR. HAMILTON: 02:13:44
5 Q. You mean it went beyond the ordinary skill 02:13:50
6 of a person -- of ordinary skill in the art? 02:13:58
7 A. I think a person of ordinary skill in the 02:14:00
8 art would require iteration and optimization to find 02:14:02
9 the right balance, and it still may be difficult 02:14:06
10 with this design of two U-shaped actuating members 02:14:10
11 attached at a fixed location to create a valve that 02:14:17
12 worked perfectly in all cases. 02:14:20
13 Q. Wouldn't it be simple to just attach the 02:14:22
14 location, move the U-shaped members to the 02:14:25
15 attachment together? Wouldn't that take care of it? 02:14:27
16 MR. STOWELL: Objection. Vague. 02:14:31
17 BY MR. HAMILTON: 02:14:32
18 Q. That's pretty simple. 02:14:33
19 MR. STOWELL: Vague. Compound. 02:14:34
20 THE WITNESS: I haven't considered it in 02:14:42
21 here. I think that's one possibility that a person 02:14:43
22 of skill in the art could consider, along with other 02:14:45
23 simple options like a single-suture line that might 02:14:48
24 wrap around the central sealing member. 02:14:52
25 ///

1 BY MR. HAMILTON: 02:14:54
2 Q. So I'm trying to find out. Now you're 02:14:55
3 saying they're simple options. A minute ago you 02:14:57
4 said it would be very difficult and there would be 02:15:00
5 many iterations to form a seal. 02:15:03
6 Which one is it? 02:15:05
7 MR. STOWELL: Objection. Misstates 02:15:06
8 testimony and argumentative. 02:15:07
9 THE WITNESS: What I said was for the 02:15:13
10 drawings shown in Figure 20, that to create a 02:15:14
11 perfect seal in all cases would require iteration 02:15:21
12 and still may not seal perfectly in all cases. 02:15:24
13 BY MR. HAMILTON: 02:15:29
14 Q. And there are many options to do that; is 02:15:29
15 that right? 02:15:31
16 A. There are different design considerations 02:15:35
17 for each of the components that a person of skill in 02:15:37
18 the art would optimize. 02:15:40
19 Q. And a person of ordinary skill in the art 02:15:43
20 would understand each of those design 02:15:46
21 considerations; correct? 02:15:48
22 A. I think a person of skill in the art would 02:15:53
23 be able to consider different options for the 02:15:58
24 different components and yet still may not be able 02:16:03
25 to create a perfect seal as shown with the pair of 02:16:07

1 actuators on page 20. 02:16:12
2 Q. If a single string was used as opposed to 02:16:15
3 the pair of actuators, would there be different 02:16:18
4 design considerations in that instance? 02:16:22
5 A. I think many of the same design 02:16:24
6 considerations would apply. 02:16:37
7 Q. And so is it possible that they would still 02:16:42
8 not be able to create a perfect seal as shown with 02:16:44
9 the pair of actuators on page 20 with a single 02:16:48
10 string or wire? 02:16:51
11 MR. STOWELL: Objection. 02:16:54
12 THE WITNESS: I don't know. It depends on 02:16:54
13 what's going through the -- what tools are being 02:16:56
14 inserted, I think. 02:16:58
15 MR. HAMILTON: I'm going to give you what 02:17:33
16 I'm going to ask the court reporter to mark as a new 02:17:35
17 exhibit, 2011. 02:17:38
18 (Exhibit 2011 was marked for identification 02:17:38
19 by the Certified Shorthand Reporter, and a 02:17:38
20 copy is attached hereto.) 02:18:07
21 BY MR. HAMILTON: 02:18:07
22 Q. Do you recognize Exhibit 2011? 02:18:08
23 A. Yes. 02:18:09
24 Q. And is Exhibit 2011 your declaration in an 02:18:09
25 IPR related to Patent 11,697,011? 02:18:16

1 A. Yes. 02:18:22
2 Q. If you could turn to page 50, paragraph 75. 02:18:22
3 I want you to focus on the last sentence of 02:19:04
4 page 50 that goes over the page 51. Let me know 02:19:07
5 when you're there and ready for a question. 02:19:23
6 A. Okay. 02:20:32
7 Q. What did you mean by: "The actuating 02:20:33
8 members could be formed from a thin, flexible sheet 02:20:40
9 or flat ribbon of aluminum or plastic so that they 02:20:43
10 have the flexibility to conform to the outer surface 02:20:48
11 of the cylindrical seal module"? 02:20:50
12 MR. HAMILTON: Sorry. I was going very 02:20:55
13 fast there. I'll slow it down next time. 02:20:56
14 MR. STOWELL: We'll object to questions 02:20:59
15 about Exhibit 2011 as being outside the scope of 02:21:03
16 today's deposition. 02:21:05
17 THE WITNESS: What I meant was what it says 02:21:12
18 on page 50: "The actuating members could be formed 02:21:16
19 from a thin, flexible sheet or flat ribbon of 02:21:16
20 aluminum or plastic so that they have the 02:21:16
21 flexibility to conform to the outer surface of the 02:21:16
22 cylindrical module." 02:21:28
23 BY MR. HAMILTON: 02:21:28
24 Q. You don't have anything to add beyond the 02:21:28
25 words there that you just read back to me? 02:21:32

1 A. I think that's what it means. It seems 02:21:34
2 clear. 02:21:36
3 Q. And does that mean that each U-shaped 02:21:37
4 actuating member in Schaffer would be made flexible? 02:21:40
5 So for example, like a flexible wire or a string? 02:21:44
6 MR. STOWELL: Objection. Compound. 02:21:53
7 THE WITNESS: As I said in prior 02:21:56
8 declarations, I think a person of ordinary skill in 02:21:58
9 the art would look at Schaffer and presume that they 02:22:02
10 have a certain amount of inherent flexibility that 02:22:08
11 they are -- they have some flexibility to start 02:22:11
12 with. 02:22:14
13 So this is just stating that it could be 02:22:18
14 modified to be more flexible and have a wider 02:22:22
15 surface area, narrower surface area, et cetera, to 02:22:30
16 better conform to the outer surface of the 02:22:35
17 cylindrical seal module. 02:22:37
18 BY MR. HAMILTON: 02:22:39
19 Q. So as I read this paragraph, what I 02:22:39
20 understand is you're testifying that one skilled in 02:22:42
21 the art would understand that Schaffer either 02:22:45
22 discloses in and of itself flexible U-shaped 02:22:48
23 actuating members that conform to the outer surface 02:22:51
24 of a tubular member or would modify those to make 02:22:53
25 them flexible so they conform to the outer surface 02:22:58

1 of the tubing member; is that right? 02:23:01
2 A. I think what I've said elsewhere is a 02:23:03
3 person of skill in the art would understand that 02:23:09
4 there's some flexibility in the actuating members of 02:23:11
5 Schaffer to start with. 02:23:15
6 Q. So what I'm trying to understand is, in 02:23:15
7 Exhibit 1020, you say one skilled in the art would 02:23:19
8 not simply replace each U-shaped member with a 02:23:22
9 string or a wire, and yet in this Exhibit 1 -- 02:23:25
10 excuse me -- 2011 you're saying that's exactly what 02:23:31
11 a person of ordinary skill in the art would do. 02:23:33
12 And I'm trying to understand, which one is 02:23:36
13 it? 02:23:37
14 MR. STOWELL: Objection. Misstates 02:23:41
15 testimony. 02:23:42
16 THE WITNESS: What I'm saying in 02:23:49
17 Exhibit 1003 is that they could be modified so that 02:23:51
18 they have additional flexibility to better conform 02:23:55
19 if it wasn't conforming as well initially. 02:24:00
20 BY MR. HAMILTON: 02:24:02
21 Q. And that would form a better seal; correct? 02:24:16
22 A. As I've said before, there are many 02:24:24
23 different things that could be adjusted to optimize 02:24:26
24 sealing, optimize tubing recovery. This is one 02:24:30
25 aspect, would be optimizing the actuating members. 02:24:37

1 Q. So in Exhibit 2011 -- 02:24:43
2 A. Which is which one? 02:24:47
3 Q. Which is the one you were just looking at, 02:24:49
4 so it was previously labeled Exhibit 1003 from a 02:24:53
5 different IPR. 02:24:58
6 You testify that: "To form a better seal, 02:25:07
7 the actuating members could be formed from a thin, 02:25:11
8 flexible sheet or flat ribbon of aluminum or plastic 02:25:14
9 so they have better flexibility to conform to the 02:25:20
10 outer surface of the cylindrical seal model -- 02:25:23
11 module." 02:25:26
12 MR. STOWELL: Objection. Misstates the 02:25:28
13 document. 02:25:30
14 BY MR. HAMILTON: 02:25:30
15 Q. And then in Exhibit 1020, your testimony is 02:25:30
16 one skilled in the art would not include two 02:25:38
17 flexible U-shaped members because that would not 02:25:43
18 form a better seal; is that correct? 02:25:45
19 MR. STOWELL: Objection. Misstates 02:25:47
20 testimony. 02:25:48
21 THE WITNESS: I certainly never said that 02:25:51
22 these actuating members were not flexible, to start 02:25:53
23 with. 02:25:57
24 BY MR. HAMILTON: 02:26:13
25 Q. And then you also said that if they were 02:26:13

1 flexible, they would conform to the cylindrical 02:26:16
2 shape of the seal module; correct? 02:26:19
3 MR. STOWELL: Objection. Vague. Misstates 02:26:24
4 testimony. 02:26:27
5 THE WITNESS: What I'm saying on page 50 of 02:26:27
6 Exhibit 2011 is that they could be modified in order 02:26:32
7 to optimize sealing. And as I've said elsewhere, 02:26:40
8 there are several other aspects that could also be 02:26:45
9 optimized by a person of skill in the art in order 02:26:48
10 to optimize sealing around different-size tools. 02:26:50
11 BY MR. HAMILTON: 02:26:55
12 Q. So there are many options that could be 02:26:56
13 optimized to improve sealing; is that right? 02:26:58
14 A. There are several that I have suggested in 02:27:01
15 the past, yes. 02:27:05
16 Q. And a single string connected to two 02:27:07
17 independently moving actuators is not shown in any 02:27:19
18 reference you've cited; is that right? 02:27:23
19 MR. STOWELL: Objection. Vague. 02:27:34
20 THE WITNESS: Can you repeat the question? 02:27:36
21 BY MR. HAMILTON: 02:27:37
22 Q. The configuration of a single flexible 02:27:38
23 string or wire where each end is connected to a 02:27:41
24 different independently movable actuating button or 02:27:45
25 any other type of actuator is not shown in any 02:27:49

1 reference in this matter, is it? 02:27:53
2 A. It's not shown in Eller or Hartley as two 02:27:56
3 separate buttons, no. 02:28:02
4 Q. And it's not shown in Schaffer either, is 02:28:03
5 it? 02:28:06
6 A. A single line is not shown in Schaffer, 02:28:10
7 that's correct. 02:28:12
8 Q. I'm going to hand you what's been 02:28:13
9 previously marked Exhibit 1001. 02:29:01
10 (Exhibit 1001 was previously marked by the 02:29:01
11 Certified Shorthand Reporter, and a copy is 02:29:01
12 attached hereto.) 02:29:11
13 BY MR. HAMILTON: 02:29:11
14 Q. Do you recognize Exhibit 1001? 02:29:12
15 A. Yes. 02:29:14
16 Q. If you could turn -- is this the 02:29:15
17 '012 patent that's the subject of this IPR? 02:29:28
18 A. Yes. 02:29:30
19 Q. If you could turn to page 30, Column 22. 02:29:30
20 I want to focus on Claim 1. 02:29:40
21 The fourth line down, you see the line 02:29:44
22 beginning "A hemostasis valve on the proximal end"? 02:29:46
23 Do you see that? 02:29:52
24 A. Yes. 02:29:53
25 Q. What does that mean, "on the proximal end"? 02:29:54

1 A. Well, that is typically where a hemostatic 02:30:04
2 valve would be located for a catheter. 02:30:10
3 Q. And then it actually continues "of the 02:30:12
4 catheter." 02:30:16
5 Do you see that? 02:30:17
6 A. Yes. 02:30:23
7 Q. What does that mean -- what catheter's 02:30:27
8 referred to by "the catheter"? 02:30:29
9 A. Claim 1 starts out as an aspiration 02:30:29
10 catheter. 02:30:32
11 Q. So the reference to a catheter in that 02:30:33
12 fourth line down is referring to the aspiration 02:30:36
13 catheter; is that right? 02:30:38
14 MR. STOWELL: Objection. Calls for a legal 02:30:40
15 conclusion. 02:30:41
16 THE WITNESS: That's my assumption as a 02:30:47
17 nonlawyer. 02:30:49
18 BY MR. HAMILTON: 02:30:49
19 Q. If you go back to Exhibit 1005, that is the 02:31:17
20 Schaffer reference. And it might be easier if you 02:31:20
21 want to look at Exhibit 1008 figures. And let's 02:31:26
22 just look at Figure 30. 02:31:38
23 Do you understand what's shown in 02:31:59
24 Figure 30? 02:32:02
25 A. I'd have to look deeper into Schaffer to 02:32:13

1 see how they describe it. 02:32:15
2 Q. Do you see a catheter depicted in 02:32:16
3 Figure 30? 02:32:19
4 A. No. 02:32:19
5 Q. Do you understand that Figure 30 could be 02:32:20
6 used with a catheter? 02:32:29
7 A. Yes. 02:32:30
8 Q. And where would one -- how would -- how 02:32:33
9 would one use Figure 30 with a catheter? 02:32:37
10 A. They don't have that item numbered in 02:32:42
11 Figure 30 through 34, but there would appear to be a 02:32:54
12 Luer attachment as part of the design which would 02:33:06
13 typically be used to attach to the catheter that 02:33:08
14 this distal to the hemostatic valve. 02:33:11
15 Q. And when you say there appears to be a Luer 02:33:13
16 attachment, is that on the left of Figure 30? 02:33:23
17 A. Right-bottom. 02:33:29
18 Q. Maybe if you orient that so that 02:33:30
19 Figure 30's upright. So now would that be 02:33:33
20 left-bottom? 02:33:36
21 A. Left-bottom if you're looking at the page 02:33:36
22 horizontally. 02:33:41
23 Q. Okay. And then what would be -- and one 02:33:41
24 would attach a catheter at that Luer attachment on 02:33:46
25 the left-bottom; is that right? 02:33:53

1 A. That would be a typical attachment point 02:34:00
2 for a catheter, a side arm that would then lead to a 02:34:03
3 catheter. 02:34:06
4 These are typical medical device 02:34:10
5 connections. 02:34:11
6 Q. And would something be attached to the 02:34:12
7 other end? 02:34:14
8 A. In the Schaffer drawings of 30 through 34, 02:34:25
9 that other end also not labeled -- well, 276, I'd 02:34:28
10 have to look what 276 is in this Schaffer patent. 02:34:44
11 Schaffer describes 276 as the cap 276 02:36:16
12 secured to the housing 20. And typically through 02:36:19
13 that cap would be where the tool would be 02:36:27
14 introduced. 02:36:30
15 Q. Does the -- does the term "cap" in this 02:36:30
16 context have any special meaning? 02:36:46
17 MR. STOWELL: Objection. Vague. Outside 02:36:47
18 the scope. 02:36:49
19 THE WITNESS: I think it has the meaning 02:36:51
20 that Schaffer gives it, which is the components 02:36:53
21 that's attached to the housing on the proximal end 02:36:59
22 of the device. 02:37:02
23 BY MR. HAMILTON: 02:37:03
24 Q. Is it just an opening? 02:37:03
25 MR. STOWELL: Objection. Vague. Asked and 02:37:08

1 answered. 02:37:10
2 THE WITNESS: I don't know. I'd have to 02:37:11
3 look at Schaffer in more detail of what they call 02:37:12
4 the opening, but the cap is the plastic component 02:37:15
5 that is attached to the housing, is how it's 02:37:22
6 described in the section I just read. 02:37:27
7 BY MR. HAMILTON: 02:37:36
8 Q. Would the cap cover the opening? 02:37:36
9 MR. STOWELL: Objection. Vague. 02:37:37
10 BY MR. HAMILTON: 02:37:38
11 Q. And would it have to be removed to insert a 02:37:38
12 tool? 02:37:42
13 A. I don't see anything in Schaffer that says 02:38:05
14 that that's a cap that would have to be removed. In 02:38:08
15 fact, it shows it as a -- Figure 32 shows in the 02:38:10
16 cross-section view of 32 and 34 that there's a 02:38:19
17 channel through that cap through which the tool 02:38:23
18 could be inserted and removed. 02:38:37
19 Q. So do you have an understanding of what the 02:38:40
20 purpose of that cap is in Schaffer? 02:38:44
21 A. If the cap weren't there, the seal member 02:38:53
22 wouldn't be -- wouldn't be maintained in position. 02:39:01
23 Q. So other than for insertion of a tool, is 02:39:15
24 there any other purpose for that cap? 02:39:21
25 A. It's -- it looks like it's keeping the seal 02:39:24

1 member in place also. 02:39:30
2 Q. Anything else? 02:39:38
3 A. Not that I know of. I'd have to read into 02:39:41
4 Schaffer in more detail, if they describe it 02:39:46
5 differently. 02:39:50
6 MR. HAMILTON: Why don't we take another 02:40:19
7 five-minute break. 02:40:20
8 MR. STOWELL: Okay. 02:40:21
9 MR. HAMILTON: I might be just about done. 02:40:21
10 THE VIDEOGRAPHER: Okay. Going off the 02:40:24
11 record. Time, 2:40 p.m. 02:40:25
12 (Recess.) 02:40:28
13 THE VIDEOGRAPHER: And we're back on the 02:46:59
14 record. The time is 2:46 p.m. 02:47:02
15 BY MR. HAMILTON: 02:47:06
16 Q. Do you understand you're still under oath? 02:47:09
17 A. Yes. 02:47:10
18 Q. Did you have any conversations or review 02:47:10
19 any documents or do anything related to your 02:47:13
20 testimony here today during the break? 02:47:15
21 A. No. 02:47:16
22 Q. I'm going to hand you an exhibit. 02:47:17
23 I'll ask the court reporter to mark it 02:47:27
24 2012. 02:47:29
25 ///

1 (Exhibit 2012 was marked for identification 02:47:29
2 by the Certified Shorthand Reporter, and a 02:47:29
3 copy is attached hereto.) 02:47:35
4 BY MR. HAMILTON: 02:47:35
5 Q. Do you recognize Exhibit 2012? 02:47:35
6 A. Yes. 02:48:02
7 Q. And what is it? 02:48:02
8 A. It's my Declaration in Support of 02:48:04
9 Opposition to Plaintiff's Motion for Preliminary 02:48:06
10 Injunction. I signed it September 9, 2024. 02:48:12
11 Q. Earlier today you had testified that you 02:48:17
12 had seen a device with a string that constricts a 02:48:22
13 tubular member, and you said it was in connection 02:48:28
14 with a declaration. 02:48:30
15 Is this that declaration you were referring 02:48:31
16 to? And if it's helpful, I'll refer you to page 34, 02:48:34
17 paragraph 85. It starts on paragraph 85 and goes 02:48:47
18 on. 02:48:52
19 A. I remember these pictures, yes. 02:49:04
20 Q. And is this the declaration that you 02:49:06
21 referred to this morning where you had seen a -- 02:49:08
22 pictures of a device that included a string that 02:49:11
23 constricts a tubular member in a hemostasis valve? 02:49:15
24 A. I'm not sure if it was this document. It 02:49:25
25 might have been a different document. 02:49:30

1 Q. When you say it might have been a different 02:49:31
2 document, do you mean you have another declaration 02:49:34
3 that includes images of a hemostasis valve with a 02:49:36
4 string that constricts a tubular member? 02:49:41
5 A. Not another declaration, no. 02:49:43
6 Q. What'd you mean by another document? 02:49:45
7 A. I think it was a document I reviewed with 02:49:50
8 counsel as part of putting together this. 02:50:00
9 Q. So I don't want to get into 02:50:04
10 attorney-client, you know, conversations with 02:50:06
11 counsel. I just want to -- I just want to clarify 02:50:08
12 what other document you looked at. 02:50:18
13 Is this the result of that document? Is 02:50:19
14 this the declaration that you referenced this 02:50:22
15 morning that includes pictures of a device that you 02:50:28
16 reviewed with a string wrapped around a tubular 02:50:28
17 member to constrict it? 02:50:30
18 A. This is the declaration where we -- I 02:50:32
19 talked about that, yes. 02:50:34
20 Q. And you had said the date of that was 02:50:35
21 September 9, 2024; right? 02:50:39
22 A. Yes. 02:50:39
23 Q. And you would have viewed these images 02:50:40
24 sometime before that? 02:50:42
25 A. Yes. 02:50:43

1 Q. Do you remember when you first saw these 02:50:43
2 images? 02:50:45
3 A. I don't. 02:50:45
4 Q. Did you ever see the device shown in the 02:50:46
5 images on pages 35 and 36 in person? 02:50:51
6 A. I did not. 02:50:55
7 Q. So you've -- you've reviewed images of a 02:50:56
8 device but you've never actually held the device or 02:51:00
9 inspected the device itself; is that right? 02:51:03
10 A. That's correct. 02:51:06
11 Q. All right. Great. Well, thank you for 02:51:07
12 your time. 02:51:18
13 I've got no further questions. 02:51:19
14 MR. STOWELL: I have no questions for the 02:51:20
15 witness. 02:51:21
16 THE VIDEOGRAPHER: Okay. No further 02:51:22
17 questions. We're going off record at 2:51 p.m. 02:51:23
18 (End of video record at 2:51 p.m.)
19 THE STENOGRAPHER: Mr. Stowell, would you
20 require a rough draft or expedited copy?
21 MR. STOWELL: Rough is fine. Yeah, we'll
22 take a rough.
23 (Deposition concluded at 2:51 p.m.)
24 -o0o-
25

1 DECLARATION UNDER PENALTY OF PERJURY
2
3 I hereby declare under penalty of perjury
4 that the foregoing is my deposition under oath; that
5 I have read same; and that I have made the
6 corrections, additions, or changes to my answers
7 that I deem necessary.
8
9 In witness thereof, I hereby subscribe my
10 name this day of , 2025.
11
12
13
14
15 _____
TROY THORNTON
16
17
18
19
20
21
22
23
24
25

1 COUNTY OF LOS ANGELES,)
)
2 STATE OF CALIFORNIA,)
I, Cody Knacke, Registered Diplomate
3 Reporter, Certified Shorthand Reporter in and for
the State of California, License No. 13691, hereby
4 certify:
That Troy L. Thornton, the witness whose
5 deposition is hereinbefore set forth, was duly sworn
by me before the commencement of such deposition and
6 that such deposition was taken before me and is a
true record of the testimony given by such witness.
7 I further certify that the adverse party,
Petitioner, was represented by counsel at the
8 deposition.
I further certify that the deposition of
9 Troy L. Thornton occurred at the offices of
Knobbe Martens at 333 Bush Street, 21st Floor,
10 San Francisco, CA on Thursday November 20, 2025,
commencing at 12:56 p.m. to 2:51 p.m.
11 I further certify that I am not related
to any of the parties to this action by blood or
12 marriage, I am not employed by or an attorney to
any of the parties to this action, and that I am
13 in no way interested, financially or otherwise,
in the outcome of this matter.
14 In witness whereof, I have hereunto set my
15 hand this day: November 24, 2025.
16
17 _____
18 CODY KNACKE, RDR, CSR No. 13691
19
20
21
22
23
24
25

A
ability 28:20
able 22:7, 29:9, 41:2, 42:24, 43:4, 45:1, 46:8, 46:25, 49:23, 49:24, 50:8
about 10:10, 12:12, 12:23, 16:9, 18:13, 19:17, 20:13, 24:2, 34:23, 41:20, 44:1, 51:15, 61:9, 63:19
above 42:7
accomplish 45:5
across 35:25
action 31:10, 66:22, 66:24
actual 16:2, 16:16
actually 57:3, 64:8
actuate 31:18
actuating 15:18, 20:8, 23:8, 23:13, 23:17, 24:25, 25:15, 27:19, 29:1, 30:9, 35:2, 35:7, 35:12, 35:14, 35:17, 35:21, 36:20, 37:18, 40:3, 42:16, 46:17, 46:18, 48:10, 51:7, 51:18, 52:4, 52:23, 53:4, 53:25, 54:7, 54:22, 55:24
actuator 27:13, 27:17, 31:11, 31:14, 31:18, 31:22, 31:23, 32:5, 32:6, 32:7, 32:13, 32:15, 37:4, 37:10, 38:15, 39:2, 39:24, 42:23, 55:25
actuators 37:12, 38:14, 50:1, 50:3, 50:9, 55:17
add 8:9, 11:6, 51:24
additional 10:25, 53:18
additions 65:6
address 28:19, 39:12
addressed 39:15
adjusted 53:23
adopt 30:12
advanced 12:22
adverse 66:13
after 8:9, 17:2
again 32:1
ago 26:11, 28:21, 49:3
all 16:6, 41:25, 47:11, 47:18, 48:3, 48:12, 49:11, 49:12, 64:11
allow 23:13, 27:18
allowed 13:11
along 27:25, 48:22
already 26:12, 26:14
also 2:25, 6:5, 6:8, 6:12, 24:22, 25:25, 28:19, 39:19, 46:15, 54:25, 55:8, 59:9, 61:1
aluminum 51:9, 51:20, 54:8
amount 52:10
angeles 2:22, 66:1
another 8:5, 18:23, 28:2, 41:24, 61:6, 63:2, 63:5, 63:6
answer 6:9, 8:9, 26:15, 26:21, 26:24, 27:1
answered 21:23, 25:21, 26:18, 27:22, 37:8, 37:22, 38:17, 39:10, 47:6, 60:1
answering 6:6
answers 65:6
any 5:17, 5:20, 5:24, 6:13, 6:17, 7:11, 7:16, 9:17, 9:19, 9:24, 10:9, 10:10, 10:11, 10:25, 12:2, 12:23, 14:6, 14:25, 41:17, 44:4, 55:17, 55:25, 59:16, 60:24, 61:18, 61:19, 66:22, 66:24
anybody 7:3, 7:5
anyone 43:23, 44:1
anything 7:17, 11:6, 51:24, 60:13, 61:2, 61:19
appeal 1:2
appear 32:14, 58:11
appearances 2:8
appearing 5:11
appears 58:15
application 3:24
apply 50:6
appropriately 20:5, 30:4, 30:6
area 52:15
aren't 7:12
argumentative 34:25, 49:8
arm 59:2
around 6:24, 24:3, 28:1, 28:22, 29:2, 29:9, 29:17, 29:18,

31:1, 32:11, 34:19, 35:2, 36:1, 36:3, 36:21, 38:1, 40:9, 40:12, 42:1, 42:22, 48:24, 55:10, 63:16
art
15:6, 21:5, 21:15, 22:6, 24:14, 25:13, 26:3, 27:16, 27:24, 28:16, 28:25, 29:15, 30:12, 33:5, 35:6, 35:11, 36:11, 37:3, 37:17, 37:24, 38:5, 38:13, 39:5, 40:24, 41:12, 42:15, 43:6, 44:19, 45:5, 46:8, 46:23, 47:9, 47:20, 48:1, 48:6, 48:8, 48:22, 49:18, 49:19, 49:22, 52:9, 52:21, 53:3, 53:7, 53:11, 54:16, 55:9
asked
21:22, 25:20, 26:11, 26:17, 27:6, 27:21, 37:8, 37:22, 38:16, 39:9, 47:5, 59:25
asking
6:8
aspect
53:25
aspects
22:2, 39:20, 39:22, 40:25, 55:8
aspiration
57:9, 57:12
association
9:12
assume
6:1
assumption
57:16
attach
29:9, 37:1, 48:13, 58:13, 58:24
attached
7:25, 9:3, 17:24, 18:9, 23:9, 24:23, 25:7, 27:4, 29:4, 31:22, 32:4, 32:7, 32:12, 36:1, 39:16, 41:25, 42:2, 48:11, 50:20, 56:12, 59:6, 59:21, 60:5, 62:3
attaches
32:15, 36:21
attachment
35:24, 46:17, 48:15, 58:12, 58:16, 58:24, 59:1
attempt
37:25
attempted
38:2
attorney
66:23
attorney-client
63:10
audible
6:8

B

back
5:10, 10:14, 10:15, 17:6, 19:2, 26:15, 29:18, 34:20, 36:7, 42:2, 42:6, 42:7, 43:18, 44:6, 51:25, 57:19, 61:13
balance
48:9
bear
2:10
because
15:25, 20:6, 30:3, 34:20, 35:23, 42:17, 42:21, 54:17
been
5:6, 7:21, 8:6, 8:13, 17:20, 22:6, 22:7, 56:8, 62:25, 63:1
before
1:2, 2:2, 8:20, 16:9, 17:2, 20:12, 26:15, 26:20, 26:21, 27:10, 53:22, 63:24, 66:10, 66:11
beginning
20:10, 56:22
begins
4:4
behalf
4:20, 4:23
being
5:3, 18:23, 25:23, 46:16, 50:13, 51:15
believe
7:17, 8:21, 20:18, 32:7, 32:16, 39:18, 42:15
below
46:5
better
36:3, 36:22, 42:24, 43:4, 52:16, 53:18, 53:21, 54:6, 54:9, 54:18
between
11:7, 18:24, 20:14, 37:5, 39:23, 41:10
beyond
48:5, 51:24
blood
66:22
board
1:2
both
24:15, 28:6, 29:3, 35:13
bottom
37:19, 38:6
break
6:12, 43:13, 43:24, 44:2, 61:7, 61:20
briefly
5:13
built
12:17
bush
2:5, 4:14, 66:18
button
29:3, 29:4, 29:10, 29:13, 29:16, 29:19, 34:20, 36:21, 37:2, 41:25, 42:2, 55:24
buttons
24:23, 29:14, 36:2, 37:6, 38:2, 39:17, 41:10, 42:24, 56:3

C

ca
66:19
california
1:22, 2:4, 2:6,

2:13, 2:22, 4:1, 4:15, 66:3, 66:6
call
32:10, 60:3
called
5:6
calls
57:14
can't
5:17, 16:23
cap
59:11, 59:13, 59:15, 60:4, 60:8, 60:14, 60:17, 60:20, 60:21, 60:24
cardiovascular
12:22
care
1:4, 4:6, 48:15
case
1:8, 4:8, 9:25, 10:11, 18:5, 19:16
cases
47:11, 47:18, 48:3, 48:12, 49:11, 49:12
categories
11:14, 11:17, 11:20
category
22:13
catheter
11:24, 12:18, 57:2, 57:4, 57:8, 57:10, 57:11, 57:13, 58:2, 58:6, 58:9, 58:13, 58:24, 59:2, 59:3
catheter's
57:7
catheters
11:24, 12:7, 12:11
caused
13:10
center
34:5
central
20:16, 20:17, 40:9, 45:18, 48:24
century
2:21
certain
40:23, 52:10
certainly
38:18, 40:7, 44:24, 54:21
certified
2:3, 7:24, 9:2, 17:23, 18:8, 50:19, 56:11, 62:2, 66:5
certify
66:7, 66:13, 66:16, 66:21
cetera
14:19, 41:4, 44:21, 47:19, 52:15
change
38:6
changes
65:6
changing
37:12
channel
60:17
characteristics
22:2, 25:24, 27:11, 27:12, 27:16, 27:17, 45:13, 46:18, 46:19, 46:22, 46:24
choose
38:13
chose
22:13
circular
13:13
circumferentially
30:8
cited
55:18
claim
56:20, 57:9
clarification
5:25
clarify
16:10, 16:15, 17:13, 17:18, 36:6, 63:11
clear
7:19, 34:15, 52:2
clinical
12:25
cody
1:29, 2:2, 4:25, 5:2, 66:4, 66:32
coie
2:19, 4:23
collapse
33:1
column
56:19
com
2:15, 2:24
combination
48:2
come
34:20, 44:25
commencement
66:10
commencing
2:4, 66:20
commercialize
13:21
communicate
43:23
complete
5:18, 5:21, 26:23, 27:1
completely
29:17
compliant
18:15, 19:1, 19:11, 19:19, 20:11, 22:10, 44:10, 45:6, 45:20, 46:1, 47:1
complicated
47:14, 47:16
component
60:4
components
27:12, 49:17, 49:24, 59:20
compound
14:9, 16:20, 31:24, 40:14, 48:19, 52:6
compress
30:3, 30:5, 30:8
conceivable
23:11
concepts
11:24
concluded
64:23
conclusion
57:15
configuration
20:7, 33:7, 33:17, 33:20, 43:3, 55:22
configurations
41:11, 41:18, 41:19
configuring
40:12
conform
23:1, 23:5, 23:10, 23:14, 23:21, 24:16, 25:1, 25:17, 26:5, 27:19, 42:8, 42:18, 42:25, 43:4, 43:10, 51:10, 51:21, 52:16, 52:23, 52:25, 53:18, 54:9, 55:1
conforming
53:19

connected
55:16, 55:23
connecting
41:9
connection
15:20, 62:13
connections
59:5
consider
11:19, 24:12, 24:22, 25:8, 25:11, 26:9, 26:12, 26:17, 26:22, 27:5, 27:7, 27:24, 28:10, 39:5, 39:7, 41:12, 41:17, 42:3, 42:5, 48:22, 49:23
consideration
28:2
considerations
49:16, 49:21, 50:4, 50:6
considered
23:25, 26:14, 30:16, 33:11, 33:24, 35:1, 35:16, 38:10, 40:17, 40:19, 48:20
considering
37:9
constrict
13:8, 13:17, 13:20, 13:24, 14:4, 14:8, 14:15, 15:2, 15:9, 15:22, 16:19, 63:17
constricts
62:12, 62:23, 63:4
construct
22:8
construction
13:10
context
59:16
continues
45:24, 57:3
conversations
61:18, 63:10
copy
7:24, 9:2, 17:23, 18:8, 50:20, 56:11, 62:3, 64:20
correct
10:3, 10:23, 15:9, 16:4, 19:7, 24:18, 29:13, 30:13, 31:12, 32:13, 35:17, 39:3, 41:18, 44:22, 49:21, 53:21, 54:18, 55:2, 56:7, 64:10
corrections
65:6
could
6:7, 10:18, 15:24, 16:7, 18:11, 20:9, 20:10, 21:12, 21:20, 21:25, 22:5, 22:17, 23:11, 24:14, 25:13, 26:11, 27:15, 27:25, 28:12, 28:25, 29:15, 33:5, 35:23, 37:10, 37:25, 38:2, 39:2, 39:23, 40:25, 44:20, 45:4, 48:22, 51:2, 51:8, 51:18, 52:13, 53:17, 53:23, 54:7, 55:6, 55:8, 55:12, 56:16, 56:19, 58:5, 60:18
couldn't
21:12, 22:18, 24:6, 24:11, 26:2
counsel
2:8, 4:16, 6:22, 6:23, 6:25, 63:8, 63:11, 66:14
county
66:1
course
12:9, 24:2, 38:3
court
4:24, 16:22, 16:23, 50:16, 61:23
cover
60:8
create
28:18, 36:3, 43:10, 44:17, 47:10, 48:11, 49:10, 49:25, 50:8
cross-reference
10:14
cross-referencing
10:15
cross-section
60:16
cross-sections
32:19, 33:2, 33:3
csr
1:29, 2:2, 5:3, 66:32
current
43:9
custom
13:3
custom-made
13:3
cylindrical
51:11, 51:22, 52:17, 54:10, 55:1

D

date
4:10, 63:20
day
65:10, 66:28
declaration
3:8, 3:13, 3:21, 3:28, 7:10, 7:12, 7:14, 8:2, 9:8, 9:11, 9:14, 15:25, 17:4, 18:21, 19:3, 21:24, 22:7, 24:12, 25:9, 26:22, 27:5, 39:13, 39:16, 39:19, 41:22, 47:3, 50:24, 62:8, 62:14, 62:15, 62:20, 63:2, 63:5, 63:14, 63:18, 65:1
declarations
9:17, 9:19, 39:21, 41:7, 52:8
declare
65:3
deem
65:7
deeper
57:25
defined
22:6
deformable
19:11, 44:10, 45:6, 45:20, 46:1, 47:1
degrees
29:18
denote
20:17
depend
25:23, 40:5
depending
23:8

depends
22:1, 23:7, 24:22, 25:5, 25:6, 25:7, 27:2, 27:3, 27:11, 34:13, 44:15, 46:14, 46:21, 50:12
depicted
58:2
depos
4:13, 4:25
deposition
1:20, 2:1, 4:5, 4:13, 5:3, 6:17, 7:6, 8:11, 8:15, 8:16, 9:23, 51:16, 64:23, 65:4, 66:9, 66:10, 66:11, 66:15, 66:16
depositions
39:21, 39:22, 41:6
describe
46:3, 58:1, 61:4
described
14:17, 28:6, 38:7, 60:6
describes
17:16, 59:11
describing
31:5
description
3:7, 3:19, 15:14, 15:17
descriptive
45:10
design
13:14, 20:5, 22:3, 22:17, 28:12, 28:18, 28:19, 29:24, 30:13, 30:18, 33:5, 36:3, 39:24, 40:25, 41:1, 43:9, 43:11, 44:25, 45:1, 48:10, 49:16, 49:20, 50:4, 50:5, 58:12
designing
15:13
designs
38:2
detail
60:3, 61:4
determine
27:16, 45:11, 45:12
develop
12:23, 13:2
development
12:15, 13:4
device
14:23, 14:25, 16:16, 32:19, 59:4, 59:22, 62:12, 62:22, 63:15, 64:4, 64:8, 64:9
difference
20:14, 31:8
different
12:7, 12:11, 16:1, 28:12, 28:15, 31:9, 37:2, 37:24, 41:10, 49:16, 49:23, 49:24, 50:3, 53:23, 54:5, 55:24, 62:25, 63:1
different-size
55:10
differently
40:12, 61:5
difficult
47:7, 47:9, 47:21, 48:2, 48:9, 49:4
dimensions
23:9, 23:12, 25:24, 44:16, 44:21
diplomate
66:4
disclosed
19:5, 19:24, 47:2
discloses
52:22
discuss
39:19, 43:23
distal
58:14
district
16:23
document
8:5, 8:17, 8:20, 9:24, 10:2, 10:7, 10:10, 16:24, 30:17, 54:13, 62:24, 62:25, 63:2, 63:6, 63:7, 63:12, 63:13
document's
8:6
documents
6:21, 7:8, 7:9, 7:11, 44:4, 61:19
done
5:12, 9:17, 61:9
down
22:25, 35:21, 51:13, 56:21, 57:12
draft
64:20
drawings
49:10, 59:8
duly
5:6, 66:9
during
12:5, 43:24, 44:2, 61:20

E

each
6:5, 23:17, 24:6, 25:1, 25:14, 27:18, 35:7, 35:11, 35:16, 36:11, 37:2, 37:4, 37:18, 38:15, 39:2, 42:22, 49:17, 49:20, 52:3, 53:8, 55:23
earlier
45:17, 62:11
easier
57:20
east
2:21
easy
38:19
either
52:21, 56:4
elastic
19:11, 44:9, 45:20, 46:1, 46:25
eller
14:19, 29:8, 29:12, 31:11, 32:5, 32:18, 34:22, 56:2
eller's
33:2, 42:21
else
7:3, 7:5, 61:2
elsewhere
53:2, 55:7
embodiment
20:23, 21:4, 22:8, 22:18, 45:23
embodiments
21:21
employ
13:23
employed
13:16, 14:3, 66:23
encountered
13:15, 14:2,

14:7, 14:14
end
37:2, 41:25, 42:2, 42:20, 42:23, 55:23, 56:22, 56:25, 59:7, 59:9, 59:21, 64:18
ends
29:3
enough
24:16
esq
2:11, 2:20
et
14:19, 41:4, 44:21, 47:19, 52:15
evalve
13:19
even
19:18
ever
13:15, 13:21, 14:1, 14:23, 14:25, 15:16, 15:21, 16:11, 64:4
every
23:10
exactly
30:25, 34:21, 53:10
examination
3:2, 5:8
example
14:5, 14:6, 16:17, 40:13, 41:21, 41:24, 52:5
examples
18:22, 19:13
excuse
9:18, 19:25, 25:17, 44:12, 45:16, 53:10
exhibit
3:8, 3:13, 3:20, 3:21, 3:24, 3:27, 3:28, 7:22, 7:23, 8:7, 8:23, 9:1, 9:5, 9:21, 10:3, 10:19, 15:24, 16:2, 16:3, 17:4, 17:7, 17:21, 17:22, 18:5, 18:7, 18:11, 18:21, 22:24, 30:20, 31:21, 32:4, 36:7, 37:20, 38:8, 39:19, 42:6, 44:6, 45:15, 50:17, 50:18, 50:22, 50:24, 51:15, 53:7, 53:9, 53:17, 54:1, 54:4, 54:15, 55:6, 56:9, 56:10, 56:14, 57:19, 57:21, 61:22, 62:1, 62:5
exhibits
3:18, 7:13, 8:10
expect
28:16
expedited
64:20
experience
10:22, 10:25, 11:7, 11:13, 11:20, 11:21, 12:1, 12:3, 12:20, 13:16, 14:2, 15:7, 15:12
expert
14:11
explained
39:22
extends
32:11
extremely
18:15, 18:25, 19:18, 21:6, 22:10, 37:11

F

fact
60:15
fair
6:3, 6:10, 19:20, 40:10, 42:14
familiar
11:24
fast
51:13
feasible
29:24
few
5:12, 10:15
figure
20:5, 23:18, 26:3, 31:1, 31:5, 31:15, 31:20, 32:3, 33:7, 33:14, 33:15, 33:16, 34:3, 36:15, 37:19, 38:7, 42:7, 44:20, 49:10, 57:22, 57:24, 58:3, 58:5, 58:9, 58:11, 58:16, 58:19, 60:15
figures
3:27, 17:10, 19:6, 19:24, 20:23, 21:4, 21:21, 22:8, 30:22, 36:8, 44:7, 44:13, 45:8, 46:10, 47:3, 47:12, 57:21
filament
15:19, 34:2, 34:10, 35:2, 38:1
filaments
21:10
filing
16:22, 16:23
financially
66:25
find
21:15, 47:9, 47:20, 48:2, 48:8, 49:2
fine
64:21
first
5:6, 11:20, 17:3, 17:8, 19:9, 19:16, 64:1
five-minute
43:13, 61:7
fixed
48:11
flat
51:9, 51:19, 54:8
flexibility
51:10, 51:21, 52:10, 52:11, 53:4, 53:18, 54:9
flexible
13:8, 13:17, 13:24, 14:4, 14:8, 14:15, 15:1, 15:8, 15:18, 15:21, 15:22, 16:13, 16:19, 24:16, 25:16, 32:11, 35:22, 37:11, 51:8, 51:19, 52:4, 52:5, 52:14, 52:22, 52:25, 54:8, 54:17, 54:22, 55:1, 55:22
floor
2:6, 2:12,

4:14, 66:18
focus
51:3, 56:20
following
22:8
follows
5:7
force
21:10, 25:7, 27:3, 39:23, 41:2, 41:4
foregoing
65:4
form
44:13, 44:21, 46:11, 49:5, 53:21, 54:6, 54:18
formed
51:8, 51:18, 54:7
forms
47:21
forth
10:15, 66:9
four
22:25
fourth
56:21, 57:12
francisco
1:22, 2:6, 4:1, 4:15, 66:19
front
30:21
full
5:18, 5:21
further
64:13, 64:16, 66:13, 66:16, 66:21

G

gaps
46:11
gave
14:5
gelatinous
17:9, 17:14, 18:20, 19:4, 19:23, 20:2, 21:6, 22:14
general
46:3
give
5:17, 6:8, 18:5, 18:22, 19:13, 20:1, 50:15
given
66:12
gives
59:20
giving
5:21
go
5:13, 57:19
goal
28:18, 44:25, 45:5
goals
28:19
goes
10:22, 29:18, 51:4, 62:17
going
5:13, 6:1, 7:21, 8:5, 8:22, 16:1, 17:6, 17:20, 40:6, 42:6, 43:15, 50:13, 50:15, 50:16, 51:12, 56:8, 61:10, 61:22, 64:17
good
41:2, 43:10
great
64:11
ground
5:13
guess
8:12, 16:22, 25:25

H

hamilton
2:20, 3:3, 4:22, 5:9, 8:1, 9:4, 9:16, 10:8, 10:17, 11:5, 11:11, 12:8, 14:12, 15:5, 15:15, 17:1, 18:1, 18:10, 21:18, 22:4, 22:22, 24:5, 24:13, 24:24, 25:10, 26:1, 26:10, 27:6, 27:14, 28:4, 28:14, 29:11, 30:1, 30:19, 31:7, 31:16, 32:2, 32:20, 33:4, 33:12, 34:1, 34:16, 35:4, 36:5, 36:14, 36:24, 37:16, 38:4, 38:21, 39:1, 39:14, 40:18, 41:8, 41:16, 43:2, 43:12, 43:20, 44:18, 45:3, 45:14, 46:20, 47:13, 47:17, 48:4, 48:17, 49:1, 49:13, 50:15, 50:21, 51:12, 51:23, 52:18, 53:20, 54:14, 54:24, 55:11, 55:21, 56:13, 57:18, 59:23, 60:7, 60:10, 61:6, 61:9, 61:15, 62:4
hand
7:21, 8:5, 8:22, 17:20, 56:8, 61:22, 66:28
happen
34:15
hartley
14:19, 29:8, 29:12, 33:20, 34:22, 56:2
hartley's
33:16, 42:21
head
6:9, 12:16
heading
10:21
held
64:8
helpful
62:16
hemostasis
11:2, 11:8, 11:18, 11:22, 11:25, 12:3, 12:6, 12:10, 12:12, 12:17, 56:22, 62:23, 63:3
hemostatic
12:24, 13:4, 13:6, 47:11, 57:1, 58:14
here
4:4, 7:6, 7:15, 11:2, 14:11, 26:9, 28:10, 31:10, 32:10, 42:10, 48:21, 61:20
hereby
65:3, 65:9, 66:6
hereinbefore
66:9
hereto
7:25, 9:3, 17:24, 18:9, 50:20, 56:12, 62:3
hereunto
66:27
highly
17:8, 17:14, 19:3, 19:11,

19:22, 44:9, 45:6, 45:19, 46:1, 46:25
horizontally 58:22
hours 6:24
housing 32:8, 59:12, 59:21, 60:5
hypothetical 29:21

I

identification 50:18, 62:1
identified 12:19, 19:7, 19:21
identify 4:16
image 35:21, 37:10
images 16:11, 16:16, 16:17, 16:21, 63:3, 63:23, 64:2, 64:5, 64:7
immediately 26:21
imperative 1:4, 4:6
implementing 15:13
improve 40:2, 55:13
inari 1:10, 4:7, 14:23
inari's 14:20
inc 1:4, 1:10, 4:6, 4:7
include 11:21, 14:5, 14:7, 19:10, 24:7, 40:2, 41:23, 47:21, 54:16
included 11:1, 22:9, 44:11, 46:9, 62:22
includes 15:1, 15:8, 16:12, 16:18, 45:19, 63:3, 63:15
including 19:9, 41:3, 45:5
incomplete 29:21
independently 55:17, 55:24
inherent 52:10
initially 53:19
injunction 3:16, 62:10
inner 44:11
insert 60:11
inserted 23:2, 23:6, 23:11, 23:15, 23:22, 24:18, 25:2, 25:18, 25:23, 26:6, 27:20, 42:9, 42:19, 46:16, 47:8, 50:14, 60:18
insertion 60:23
inspected 64:9
instance 46:6, 50:4
instead 35:6, 35:13
inter 3:9, 3:22, 3:30, 9:9
interested 66:25
internal 44:22, 45:5
interrelated 10:14
intrinsically 18:16, 19:1, 19:19, 22:10
introduced 59:14
introducer 13:3
ipr 1:8, 4:9, 50:25, 54:5, 56:17
irvine 2:13
issue 10:11
item 34:2, 58:10
iteration 48:8, 49:11
iterations 49:5
itself 20:19, 20:20, 21:16, 52:22, 64:9

J

jhamilton@perkin-scoie 2:24
job 1:30
joseph 2:20, 4:22
joshua 2:11, 2:15, 4:19

K

keep 22:16
keeping 60:25
kind 37:9
knacke 1:29, 2:2, 4:25, 5:2, 66:4, 66:32
knobbe 2:10, 4:20, 66:18
know 5:12, 10:19, 12:12, 20:2, 22:1, 22:21, 23:16, 24:21, 25:22, 26:8, 31:9, 33:10, 33:23, 38:25, 39:11, 41:15, 50:12, 51:4, 60:2, 61:3, 63:10
knowing 47:8

L

labeled 31:21, 32:3, 34:2, 34:9, 54:4, 59:9
last 8:9, 8:11, 9:21, 12:14, 16:10, 51:3
later 19:17, 20:3, 21:8, 24:2
lead 59:2
leaks 41:1
least 12:17
left 58:16
left-bottom 58:20, 58:21,

58:25
legal
57:14
let's
17:19, 22:23, 32:10, 33:13, 37:13, 57:21
level
22:1
license
66:6
line
28:1, 28:22, 29:2, 29:4, 29:8, 29:16, 35:2, 37:13, 48:23, 56:6, 56:21, 57:12
lines
22:25
list
7:13, 46:5
listed
7:9, 7:12, 7:18, 11:2, 11:20
listing
19:15, 46:4
lists
11:14
llp
2:10, 2:19
located
57:2
location
46:16, 48:11, 48:14
long
6:13, 6:23
look
7:13, 11:12, 17:17, 23:18, 30:20, 33:2, 33:13, 44:4, 45:15, 52:9, 57:21, 57:22, 57:25, 59:10, 60:3
looked
9:22, 63:12
looking
8:10, 19:2, 31:5, 36:7, 45:17, 54:3, 58:21
looks
60:25
los
2:22, 66:1
lot
22:1
lower
37:10
luer
58:12, 58:15, 58:24
lumen
13:8, 13:18, 13:24, 14:4, 14:8, 14:16, 15:2, 15:9, 15:22, 16:19

M

made
52:4, 65:5
main
2:12
maintained
60:22
make
26:4, 30:17, 38:6, 38:23, 43:6, 52:24
many
12:12, 12:21, 37:23, 40:1, 49:5, 49:14, 50:5, 53:22, 55:12
mark
50:16, 61:23
marked
3:7, 3:18, 3:19, 7:22, 7:23, 8:6, 8:23, 9:1, 17:21, 17:22, 18:7, 50:18, 56:9, 56:10, 62:1
marriage
66:23
martens
2:10, 4:20, 66:18
material
17:9, 17:14, 18:15, 18:19, 18:20, 18:25, 19:4, 19:6, 19:9, 19:21, 19:23, 20:13, 20:14, 20:18, 20:20, 20:22, 21:1, 21:3, 21:7, 21:20, 22:2, 22:9, 22:13, 23:8, 23:12, 25:16, 30:9, 34:14, 39:24, 44:9, 44:15, 44:20, 45:12, 45:19, 46:8, 46:25, 47:21
materials
17:17, 19:10, 20:4, 46:4, 46:5, 47:19
matter
4:6, 8:23, 9:12, 10:10, 15:20, 16:2, 17:4, 22:7, 44:1, 56:1, 66:26
matters
9:25, 16:1
maybe
16:23, 20:3, 39:20, 58:18
mean
6:25, 8:14, 23:5, 26:13, 26:19, 27:9, 40:1, 48:5, 51:7, 52:3, 56:25, 57:7, 63:2, 63:6
meaning
59:16, 59:19
means
21:20, 45:25, 52:1
meant
51:17
mechanical
27:12, 27:17, 46:18
mechanisms
31:10
media
4:4
medical
1:10, 4:7, 13:2, 59:4
medications
5:20
meet
6:23, 45:1
member
13:17, 13:24, 14:4, 14:8, 14:15, 15:2, 15:9, 15:18, 15:22, 16:13, 16:19, 20:17, 26:5, 29:9, 30:10, 32:12, 32:15, 32:21, 33:6, 33:21, 34:6, 34:10, 35:7, 35:12, 36:11, 37:18, 40:9, 40:13, 42:1, 42:24, 44:11, 44:22, 45:6, 45:19, 46:15, 48:24, 52:4, 52:24, 53:1, 53:8, 60:21, 61:1,

62:13, 62:23, 63:4, 63:17
members 20:8, 23:8, 23:13, 23:17, 24:1, 24:7, 24:15, 25:1, 25:15, 27:19, 29:1, 35:14, 35:17, 35:21, 36:20, 40:3, 42:16, 46:17, 46:18, 48:10, 48:14, 51:8, 51:18, 52:23, 53:4, 53:25, 54:7, 54:17, 54:22
memory 5:14
mentioned 13:7, 26:4, 41:3, 41:6
messed 33:18
met 6:21
middle 18:13, 23:19
might 5:20, 40:7, 48:23, 57:20, 61:9, 62:25, 63:1
minimize 41:1
minute 42:11, 49:3
misstates 10:4, 15:10, 22:19, 28:9, 30:15, 34:24, 35:18, 36:16, 37:21, 40:21, 47:23, 49:7, 53:14, 54:12, 54:19, 55:3
mitraclip 12:14
model 54:10
modification 43:6
modified 40:25, 52:14, 53:17, 55:6
modify 36:3, 52:24
module 21:9, 39:25, 42:22, 44:12, 45:7, 46:10, 46:11, 51:11, 51:22, 52:17, 54:11, 55:2
modules 19:5, 19:24
moment 26:11, 28:21
monitor 4:11
more 11:13, 35:22, 52:14, 60:3, 61:4
morning 8:18, 8:19, 62:21, 63:15
most 20:2, 22:14
motion 3:15, 62:9
motivate 43:5
motivated 38:5
motivation 43:11
movable 55:24
move 33:1, 48:14
moving 55:17
much 20:11, 32:25
multiple 28:12, 38:22
must 20:6

N

name 65:10
narrower 52:15
necessary 40:7, 65:7
need 7:13, 17:17, 18:6, 33:2
never 35:16, 54:21, 64:8
new 50:16
next 7:1, 22:24, 51:13
nod 6:9
noncompressible 19:12, 44:11, 45:7, 45:21, 46:2, 47:2
nonlawyer 57:17
november 1:23, 2:5, 4:2, 4:10, 9:15, 66:19, 66:28
number 4:5, 4:8, 6:21, 9:10, 16:2
numbered 58:10

O

o0o 64:24
oath 5:15, 43:21, 61:16, 65:4
object 51:14
objection 9:13, 10:4, 10:12, 11:3, 11:9, 12:4, 14:9, 15:3, 15:10, 16:20, 21:13, 21:22, 22:19, 23:23, 24:9, 24:19, 25:3, 25:20, 26:7, 26:25, 27:21, 28:8, 29:5, 29:20, 30:14, 31:3, 31:13, 31:24, 32:17, 32:23, 33:8, 33:22, 34:12, 34:24, 35:18, 36:13, 36:16, 37:7, 37:21, 38:16, 38:24, 39:9, 40:14, 40:21, 41:13, 43:8, 44:14, 44:23, 45:9, 46:13, 47:5, 47:15, 47:23, 48:16, 49:7, 50:11, 52:6, 53:14, 54:12, 54:19, 55:3, 55:19, 57:14, 59:17, 59:25, 60:9
occurred 66:17
office 1:1, 4:8
offices 66:17
offset 34:5
okay 6:15, 12:19, 16:8, 17:6, 19:2, 43:14, 43:15, 51:6, 58:23, 61:8, 61:10, 64:16
olson 2:10

once
21:10
one
14:6, 14:24, 15:4, 28:25, 29:15, 29:16, 30:7, 31:2, 32:22, 33:6, 33:21, 34:18, 35:6, 35:10, 35:13, 36:1, 36:10, 36:21, 37:3, 37:17, 37:25, 38:1, 38:5, 38:13, 38:14, 39:3, 40:7, 40:19, 41:25, 42:15, 43:5, 45:23, 47:20, 48:21, 49:6, 52:20, 53:7, 53:12, 53:24, 54:2, 54:3, 54:16, 58:8, 58:9, 58:23
ones
41:3
only
39:15
open
21:9
opening
13:14, 41:2, 59:24, 60:4, 60:8
opposed
16:17, 37:4, 38:14, 50:2
opposing
29:10, 29:12, 36:2, 36:21, 38:1, 42:23
opposition
3:14, 62:9
optimization
40:7, 48:8
optimize
28:13, 41:1, 49:18, 53:23, 53:24, 55:7, 55:10
optimized
39:23, 55:9, 55:13
optimizing
53:25
option
13:21, 18:23, 37:14, 39:3, 39:15, 40:8, 40:19, 42:3
options
19:16, 19:18, 20:1, 28:12, 28:15, 37:24, 38:10, 40:1, 40:11, 41:6, 43:11, 48:23, 49:3, 49:14, 49:23, 55:12
order
26:4, 41:1, 55:6, 55:9
ordinary
22:5, 26:2, 27:15, 27:23, 28:2, 28:5, 28:11, 28:16, 30:12, 44:19, 45:4, 46:7, 48:5, 48:6, 48:7, 49:19, 52:8, 53:11
orient
58:18
other
6:6, 9:17, 9:19, 12:1, 12:2, 13:17, 13:23, 14:3, 14:7, 14:15, 14:18, 15:1, 15:6, 15:22, 16:12, 16:18, 22:1, 22:2, 25:15, 26:3, 27:25, 28:19, 38:2, 38:10, 39:19, 39:22, 40:10, 41:5, 41:9, 41:11, 41:17, 41:19, 42:2, 43:11, 44:16, 45:1, 46:19, 46:21, 47:18, 48:22, 55:8, 55:25, 59:7, 59:9, 60:23, 60:24, 63:12
others
12:21
otherwise
66:25
out
26:3, 37:12, 44:20, 49:2, 57:9
outcome
66:26
outer
51:10, 51:21, 52:16, 52:23, 52:25, 54:10
outside
23:23, 24:9, 24:19, 25:3, 25:21, 27:22, 28:8, 29:5, 29:20, 30:14, 32:23, 33:8, 35:19, 36:17, 37:7, 38:17, 41:13, 47:6, 51:15, 59:17
over
5:13, 6:5, 12:9, 51:4
own
8:16, 20:6
owner
1:12, 2:17, 4:23

P

page
3:2, 3:7, 3:19, 10:18, 10:21, 10:23, 23:19, 30:21, 30:23, 31:20, 32:4, 33:13, 35:20, 36:8, 37:10, 37:20, 38:7, 42:6, 42:20, 44:6, 45:8, 45:15, 46:10, 47:3, 47:12, 50:1, 50:9, 51:2, 51:4, 51:18, 55:5, 56:19, 58:21, 62:16
pages
1:31, 64:5
pair
49:25, 50:3, 50:9
paragraph
10:23, 11:12, 11:21, 12:2, 12:23, 16:7, 17:6, 18:13, 18:14, 18:20, 18:22, 19:3, 19:4, 19:10, 19:22, 20:10, 21:8, 22:15, 22:23, 22:24, 23:20, 45:16, 45:17, 51:2, 52:19, 62:17
paragraphs
11:1, 11:7
parameters
44:17, 48:1
park
2:21
part
13:4, 13:14, 19:9, 58:12, 63:8
partes
3:10, 3:22, 3:31, 9:9

parties
66:22, 66:24
parts
9:22
party
66:13
passive
13:12
past
55:15
patent
1:1, 1:2, 1:10, 1:12, 2:17, 3:10, 3:20, 3:23, 3:24, 3:31, 4:8, 4:23, 9:10, 50:25, 56:17, 59:10
patents
14:17, 14:18, 14:21, 16:18
penalty
65:1, 65:3
pending
6:14
perfect
47:10, 48:2, 49:11, 49:25, 50:8
perfectly
47:10, 48:12, 49:12
perjury
65:1, 65:3
perkins
2:19, 4:23
person
21:5, 21:14, 22:5, 24:14, 25:13, 26:2, 27:15, 27:23, 28:2, 28:5, 28:11, 28:16, 30:11, 33:5, 37:24, 39:4, 40:24, 41:12, 44:19, 45:4, 46:7, 46:23, 47:9, 47:25, 48:6, 48:7, 48:21, 49:17, 49:19, 49:22, 52:8, 53:3, 53:11, 55:9, 64:5
petition
3:9
petitioner
1:6, 2:9, 4:20, 9:9, 66:14
petitioner's
3:30
phrase
22:25, 42:8
pick
15:24
pictures
62:19, 62:22, 63:15
pinch-type
13:19
place
4:14, 27:18, 35:13, 38:14, 61:1
places
40:23
plaintiff
4:18
plaintiff's
3:15, 62:9
planet
4:13, 4:25
plastic
51:9, 51:20, 54:8, 60:4
please
4:16, 5:25
point
59:1
points
35:24, 46:17
polymer
45:11
polymeric
13:20
polyurethane
19:14, 46:6
poorly
35:9
portion
9:24, 31:15, 42:7
portions
10:6, 10:9
position
60:22
possibility
39:4, 39:6, 48:21
possible
28:11, 46:4, 50:7
preliminary
3:16, 62:9
prep
6:17
preparation
7:6, 9:23
prepared
9:19
present
2:25, 7:3
presume
52:9
pretty
36:19, 48:18
prevent
5:21
previous
33:13
previously
3:18, 7:22, 7:23, 8:6, 8:22, 9:1, 17:21, 17:22, 18:7, 54:4, 56:9, 56:10
prior
8:19, 13:1, 15:6, 39:20, 39:21, 52:7
probably
20:4, 21:8, 46:19
product
12:17
prograft
13:2
project
12:14, 12:15, 13:5, 14:10, 14:13
properties
19:9, 20:9, 20:11, 20:21, 21:2, 23:9, 23:12, 34:14, 39:24, 39:25, 44:16, 44:20, 45:12, 46:9, 46:15
prototype
13:19
provide
19:8, 22:14
provided
15:14
provides
18:14, 18:25
proximal
56:22, 56:25, 59:21
publication
3:25
pull
30:7, 32:21, 34:10
pulled
33:6, 33:21, 34:21
pulling
31:2, 34:9
pulls
30:10
purpose
60:20, 60:24
put
34:18, 35:8, 35:13, 37:1
putting
35:1, 63:8

Q
qualifications 10:22
question 5:25, 6:7, 6:8, 9:18, 9:20, 10:1, 11:4, 14:1, 16:15, 20:25, 31:25, 35:9, 42:10, 51:5, 55:20
question's 6:14
questions 51:14, 64:13, 64:14, 64:17
quick 38:19
quite 47:14

R
r&d 12:16
range 18:23, 19:8, 19:16, 20:1, 20:21, 21:2, 22:14
rdr 1:29, 2:2, 66:32
read 10:6, 26:15, 45:24, 51:25, 52:19, 60:6, 61:3, 65:5
ready 51:5
really 23:25, 25:8, 26:22, 27:4, 39:12, 40:16, 45:11
reason 5:17, 42:14
reasons 36:15
recall 7:11, 7:15, 17:2, 28:23
recess 43:17, 61:12
recognize 9:5, 33:15, 50:22, 56:14, 62:5
recollection 9:25, 10:10
record 7:20, 27:1, 36:6, 43:15, 43:19, 61:11, 61:14, 64:17, 64:18, 66:12
recorded 5:3
recover 21:9, 28:20
recovery 28:13, 53:24
refer 16:1, 16:3, 17:8, 62:16
reference 3:27, 12:2, 17:17, 18:2, 18:12, 55:18, 56:1, 57:11, 57:20
referenced 14:18, 19:4, 63:14
references 15:6
referred 8:3, 15:7, 18:3, 57:8, 62:21
referring 14:20, 16:4, 17:15, 18:19, 44:7, 57:12, 62:15
refresh 5:14, 9:24, 10:10
regarding 43:24
registered 66:4
regularly 12:25
related 8:11, 9:18, 11:1, 11:7, 50:25, 61:19, 66:21
released 20:8, 21:10, 28:20
remember 16:21, 16:23, 17:5, 62:19, 64:1
removed 41:3, 60:11, 60:14, 60:18
rendered 17:3
reopen 21:16
repeat 11:4, 20:25, 55:20
replace 24:6, 24:15, 25:14, 28:25, 35:11, 36:11, 36:19, 37:4, 37:17, 39:2, 42:16, 53:8
replacing 24:1, 24:2, 24:25, 35:6, 35:16, 38:15, 40:3, 41:23
reply 3:30
reported 1:28
reporter 2:3, 4:24, 7:24, 9:2, 17:23, 18:8, 50:16, 50:19, 56:11, 61:23, 62:2, 66:5
represent 4:17
represented 66:14
representing 4:13, 4:25
reproduced 30:23, 31:20
require 48:8, 49:11, 64:20
requirements 45:2
respect 34:18, 40:11
respective 42:23
result 63:13
retract 20:6
returns 29:3
review 3:10, 3:22, 3:31, 7:8, 8:10, 8:17, 9:9, 9:21, 10:9, 61:18
reviewed 6:21, 7:17, 10:2, 14:18, 14:23, 14:25, 63:7, 63:16, 64:7
reviewing 7:11, 7:16
reyes 2:26, 4:12
ribbon 51:9, 51:19, 54:8
right 14:21, 16:6, 21:21, 23:18,

25:19, 28:7, 29:23, 36:8, 37:20, 38:23, 39:17, 40:20, 42:4, 43:7, 47:22, 48:9, 49:15, 53:1, 55:13, 55:18, 57:13, 58:25, 63:21, 64:9, 64:11
right-bottom
58:17
roller
33:19
room
32:25
rotatable
31:11, 31:23, 32:5
rotates
31:18
rotating
31:15
rough
64:20, 64:21, 64:22
rules
5:14

S

s
58:19
said
10:2, 12:9, 20:12, 21:11, 21:19, 21:25, 22:12, 24:12, 26:12, 27:1, 27:7, 27:10, 28:21, 34:18, 40:23, 41:22, 46:21, 47:18, 49:4, 49:9, 52:7, 53:2, 53:22, 54:21, 54:25, 55:7, 62:13, 63:20
same
6:7, 23:19, 26:7, 27:10, 29:3, 29:4, 29:10, 29:19, 34:20, 42:2, 50:5, 65:5
san
1:22, 2:6, 4:1, 4:15, 66:19
saw
64:1
say
8:14, 14:13, 17:3, 19:20, 24:11, 37:13, 39:6, 40:10, 42:14, 42:20, 47:7, 53:7, 58:15, 63:1
saying
20:2, 22:16, 28:23, 29:23, 35:15, 36:18, 49:3, 53:10, 53:16, 55:5
says
10:21, 11:13, 11:23, 19:10, 45:18, 51:17, 60:13
scale
18:24
scenarios
28:6
schaffer
3:26, 3:27, 17:10, 17:16, 17:17, 18:2, 18:12, 19:7, 19:8, 19:22, 22:9, 29:16, 31:6, 34:18, 35:3, 35:12, 35:14, 37:12, 37:18, 40:2, 45:16, 45:18, 47:2, 52:4, 52:9, 52:21, 53:5, 56:4, 56:6, 57:20, 57:25, 59:8, 59:10, 59:11, 59:20, 60:3, 60:13, 60:20, 61:4
schaffer's
23:7, 40:3, 42:16, 42:22
scope
23:24, 24:10, 24:20, 25:4, 25:21, 27:22, 28:9, 29:6, 29:21, 30:15, 32:24, 33:9, 35:19, 36:17, 37:8, 38:17, 41:14, 47:6, 51:15, 59:18
seal
13:11, 13:13, 19:5, 19:24, 20:17, 21:9, 28:17, 28:19, 32:16, 35:23, 36:3, 36:22, 39:25, 42:22, 43:10, 44:11, 44:12, 44:13, 44:17, 44:21, 44:22, 45:1, 45:6, 45:7, 45:19, 46:9, 46:15, 47:4, 47:21, 49:5, 49:11, 49:12, 49:25, 50:8, 51:11, 52:17, 53:21, 54:6, 54:10, 54:18, 55:2, 60:21, 60:25
sealed
46:12
sealing
13:12, 24:3, 28:13, 29:9, 32:19, 38:9, 40:2, 40:9, 40:12, 47:10, 48:24, 53:24, 55:7, 55:10, 55:13
seals
48:3
second
11:23, 35:21
section
60:6
secured
42:23, 59:12
see
11:15, 11:17, 17:11, 18:14, 18:17, 23:3, 30:22, 31:4, 31:21, 33:2, 34:3, 34:7, 45:13, 45:22, 56:21, 56:23, 57:5, 58:1, 58:2, 60:13, 64:4
seeing
16:21
seem
30:17, 31:9, 36:18
seemed
38:18
seems
21:17, 35:15, 36:2, 52:1
seen
8:19, 14:24, 15:4, 16:11, 62:12, 62:21
select
46:8, 46:25
self-closing
21:7
sensible
30:18
sentence
11:21, 11:23,

17:8, 17:15, 18:14, 51:3
separate 39:17, 56:3
september 62:10, 63:21
set 66:9, 66:27
several 7:9, 11:14, 12:6, 12:10, 12:11, 48:1, 55:8, 55:14
shape 23:1, 23:6, 23:15, 23:21, 24:17, 25:2, 25:18, 26:6, 27:20, 40:6, 42:9, 42:18, 55:2
sheathe 13:3
sheet 51:8, 51:19, 54:8
shore 18:24, 19:17
shorthand 2:3, 7:24, 9:2, 17:23, 18:8, 50:19, 56:11, 62:2, 66:5
show 33:3, 35:20
showing 32:6, 32:8, 37:14, 38:11
shown 20:5, 20:9, 29:7, 30:25, 31:14, 33:7, 34:22, 36:15, 37:19, 38:6, 44:12, 44:13, 45:7, 46:10, 47:11, 49:10, 49:25, 50:8, 55:17, 55:25, 56:2, 56:4, 56:6, 57:23, 64:4
shows 32:18, 45:18, 60:15
side 30:7, 30:11, 31:2, 32:22, 33:7, 33:21, 34:11, 34:21, 59:2
side-pinch 13:22
signature-mig2k 66:30
signed 17:3, 62:10
silicone 19:13, 46:5
silicone-type 13:13
similar 37:11, 37:12
simple 36:2, 36:19, 37:1, 37:25, 38:19, 48:13, 48:18, 48:23, 49:3
simply 40:8, 53:8
single 24:3, 31:1, 31:11, 31:23, 32:5, 32:10, 32:12, 34:19, 35:2, 35:7, 35:8, 35:12, 35:25, 36:20, 37:1, 37:5, 37:25, 38:13, 39:16, 41:9, 41:24, 50:2, 50:9, 55:16, 55:22, 56:6
single-lumen 13:22
single-suture 28:1, 28:21, 29:2, 29:8, 29:16, 48:23
sir 44:8
sit 7:15
sitting 7:1
situation 43:1
size 23:1, 23:6, 23:14, 23:21, 24:17, 25:2, 25:18, 26:5, 27:20, 40:5, 42:8, 42:18, 46:15, 47:8, 47:19
skill 21:5, 21:14, 22:5, 24:14, 25:13, 26:2, 27:15, 27:24, 28:3, 28:5, 28:11, 28:16, 30:12, 33:5, 37:24, 39:5, 41:12, 44:19, 45:4, 46:7, 46:23, 47:9, 47:25, 48:5, 48:6, 48:7, 48:22, 49:17, 49:19, 49:22, 52:8, 53:3, 53:11, 55:9
skilled 28:25, 29:15, 35:6, 35:11, 36:10, 37:3, 37:17, 38:5, 38:13, 40:24, 42:15, 43:6, 47:20, 52:20, 53:7, 54:16
sleeve 32:9
slit 13:13
slow 51:13
smaller 36:4, 36:22, 36:23
soft 18:15, 18:25, 19:18, 21:6, 22:10
softer 19:18, 20:11
softest 20:4, 22:14
some 5:13, 10:6, 13:7, 21:25, 25:15, 41:5, 52:11, 53:4
something 33:19, 38:19, 59:6
sometime 63:24
sorry 33:18, 39:21, 51:12
space 34:14
spanning 37:5
speak 6:5, 6:6
special 59:16
spoken 7:5
spot 42:12
spring 25:6, 39:23, 41:3
st 2:6, 4:14, 66:18

start
52:11, 53:5, 54:22
started
12:15
starting
4:17
starts
45:23, 57:9, 62:17
state
2:3, 4:17, 66:3, 66:6
states
1:1, 4:7
stating
52:13
stenographer
5:2, 64:19
stenographically
1:28, 5:4
sticky
17:9, 17:14, 18:16, 18:20, 19:1, 19:3, 19:19, 19:22, 20:4, 21:7, 22:11
still
35:23, 43:21, 48:9, 49:12, 49:24, 50:7, 61:16
stowell
2:11, 4:19, 6:25, 9:13, 10:4, 10:12, 11:3, 11:9, 12:4, 14:9, 15:3, 15:10, 16:20, 21:13, 21:22, 22:19, 23:23, 24:9, 24:19, 25:3, 25:20, 26:7, 26:23, 27:21, 28:8, 29:5, 29:20, 30:14, 31:3, 31:13, 31:24, 32:17, 32:23, 33:8, 33:22, 34:12, 34:24, 35:18, 36:13, 36:16, 37:7, 37:21, 38:16, 38:24, 39:9, 40:14, 40:21, 41:13, 43:8, 43:14, 44:14, 44:23, 45:9, 46:13, 47:5, 47:15, 47:23, 48:16, 48:19, 49:7, 50:11, 51:14, 52:6, 53:14, 54:12, 54:19, 55:3, 55:19, 57:14, 59:17, 59:25, 60:9, 61:8, 64:14, 64:19, 64:21
stowell@knobbe
2:15
street
2:6, 2:12, 4:14, 66:18
string
13:7, 13:16, 13:23, 14:3, 14:7, 14:14, 15:1, 15:8, 15:21, 16:12, 16:18, 24:3, 24:7, 24:15, 25:1, 25:15, 25:25, 26:4, 27:3, 27:13, 27:17, 27:18, 30:10, 34:2, 34:9, 34:19, 35:7, 35:8, 35:12, 35:13, 36:12, 36:20, 37:1, 37:4, 37:5, 37:19, 38:13, 38:15, 39:3, 39:16, 40:4, 40:8, 40:11, 41:9, 41:11, 41:24, 42:17, 42:21, 42:24, 43:4, 50:2, 50:10, 52:5, 53:9, 55:16, 55:23, 62:12, 62:22, 63:4, 63:16
strings
23:20, 24:1, 24:8, 40:13, 40:17, 41:21, 41:23
stuck
21:16, 33:18
subject
56:17
submitted
9:11, 9:15
subscribe
65:9
substitution
36:19, 38:19
substitutions
38:22
successfully
28:17
sufficient
45:11
sufficiently
23:1, 23:5, 23:10, 23:14, 23:21, 24:17, 25:1, 25:17, 26:5, 27:19, 42:8, 42:18, 43:10
suggested
55:14
suite
2:21
supplemental
3:28, 7:10, 7:12, 7:14, 8:2, 8:12, 15:25
support
3:9, 3:14, 3:22, 3:29, 9:9, 62:8
sure
10:1, 33:1, 34:13, 62:24
surface
51:10, 51:21, 52:15, 52:16, 52:23, 52:25, 54:10
surrounding
32:8
suture
35:23, 35:25, 37:13
sutures
27:13, 27:18
sworn
5:1, 5:6, 66:9
system
12:18
systems
11:25, 12:22

T

take
6:12, 29:15, 30:20, 40:8, 43:12, 48:15, 61:6, 64:22
taken
2:2, 66:11
taking
4:14, 37:5, 40:11
talk
12:23, 19:17, 24:2, 44:1
talked
63:19
talking
20:13, 41:19
telling
34:23
tension
20:7, 25:6,

27:3, 28:20
term
21:7, 22:6, 59:15
terms
46:3, 47:19
tested
15:16, 15:21
testified
5:7, 62:11
testify
54:6
testifying
39:7, 52:20
testimony
5:18, 5:22, 10:5, 15:11, 19:21, 20:21, 21:2, 22:20, 28:9, 30:15, 34:25, 35:19, 36:10, 36:17, 36:25, 37:22, 40:22, 43:24, 47:24, 49:8, 53:15, 54:15, 54:20, 55:4, 61:20, 66:12
testing
12:25
th
2:12
thank
5:10, 64:11
themselves
4:17
thereof
65:9
thin
51:8, 51:19, 54:7
things
10:16, 27:24, 27:25, 53:23
think
21:5, 21:14, 22:12, 25:12, 26:18, 26:20, 27:7, 27:23, 28:11, 29:23, 32:18, 37:14, 37:23, 38:9, 41:6, 46:3, 46:14, 47:8, 47:25, 48:7, 48:21, 49:22, 50:5, 50:14, 52:1, 52:8, 53:2, 59:19, 63:7
third
20:16, 20:17, 45:18
thornton
1:21, 2:1, 3:8, 3:13, 3:21, 3:29, 4:6, 5:5, 5:10, 9:8, 65:16, 66:8, 66:17
thought
34:23
thread
35:22
three
12:17, 12:19
through
10:23, 17:10, 19:6, 19:25, 20:6, 20:23, 20:24, 21:4, 21:21, 22:8, 40:6, 50:13, 58:11, 59:8, 59:12, 60:17
thursday
1:23, 2:4, 4:2, 66:19
time
4:11, 5:24, 6:13, 36:1, 36:21, 38:1, 43:16, 43:19, 51:13, 61:11, 61:14, 64:12
times
5:12
today
4:12, 4:24, 5:11, 5:18, 5:22, 6:18, 7:6, 61:20, 62:11
today's
4:10, 51:16
together
48:15, 63:8
tomas
2:26, 4:12
tool
23:2, 23:6, 23:11, 23:15, 23:22, 25:2, 25:18, 26:6, 27:20, 42:9, 42:19, 46:16, 47:19, 59:13, 60:12, 60:17, 60:23
tools
24:17, 25:5, 27:2, 36:4, 36:22, 40:5, 40:6, 42:25, 43:5, 47:8, 50:13, 55:10
topic
16:10
trademark
1:1, 4:8
transcript
8:10, 8:14, 8:15
trial
1:2
troy
1:21, 2:1, 3:8, 3:13, 3:21, 3:29, 4:6, 5:5, 9:8, 65:16, 66:8, 66:17
true
66:12
truthful
5:18, 5:22
try
6:6, 16:1, 28:3, 28:5, 28:12, 38:20, 41:1, 43:11
trying
34:17, 35:5, 35:10, 37:2, 38:12, 49:2, 53:6, 53:12
tube
13:20, 13:22, 24:4, 30:11, 31:2, 33:6, 34:19, 44:12
tubing
25:6, 25:24, 27:2, 27:11, 27:16, 28:1, 28:13, 28:22, 29:2, 29:17, 29:18, 30:3, 30:5, 53:1, 53:24
tubular
32:12, 32:21, 33:21, 34:6, 34:10, 42:1, 52:24, 62:13, 62:23, 63:4, 63:16
turn
10:18, 16:7, 18:11, 22:23, 51:2, 56:16, 56:19
turning
44:6
two
6:24, 24:1, 24:7, 29:14, 36:19, 37:5, 37:12, 38:14, 39:16, 40:13, 40:17, 41:10, 41:21, 41:23, 44:7, 44:13, 45:8, 46:10, 47:3, 48:10, 54:16, 55:16,

56:2
type
13:7, 13:17, 13:22, 14:3, 14:8, 14:15, 15:1, 15:22, 16:12, 16:18, 19:15, 40:6, 55:25
typical
59:1, 59:4
typically
57:1, 58:13, 59:12

U

u-shape
23:7, 25:14
u-shaped
24:1, 24:15, 24:25, 25:14, 29:1, 35:7, 35:11, 35:13, 35:16, 36:11, 37:18, 40:3, 40:13, 40:17, 41:21, 41:23, 42:16, 48:10, 48:14, 52:3, 52:22, 53:8, 54:17
uh
40:15
uncollapsed
20:7
under
5:15, 10:21, 33:19, 43:21, 61:16, 65:1, 65:3, 65:4
understand
5:15, 5:24, 6:1, 10:1, 16:4, 34:17, 35:5, 35:10, 36:25, 37:3, 38:12, 43:21, 45:25, 46:24, 49:20, 52:20, 52:21, 53:3, 53:6, 53:12, 57:23, 58:5, 61:16
understanding
29:22, 60:19
understood
21:6
united
1:1, 4:7
until
14:10, 14:13
upright
58:19
use
12:25, 13:7, 14:14, 20:3, 20:16, 20:18, 21:7, 21:20, 58:9
using
29:7, 44:21

V

vague
9:13, 10:12, 11:3, 11:9, 12:4, 15:3, 16:20, 21:13, 31:3, 31:13, 32:17, 32:23, 33:22, 34:12, 38:24, 40:14, 43:8, 44:14, 44:23, 45:9, 46:13, 47:15, 48:16, 48:19, 55:3, 55:19, 59:17, 59:25, 60:9
valve
11:18, 13:4, 13:6, 13:11, 13:12, 13:15, 13:20, 13:22, 14:2, 14:17, 15:8, 15:13, 15:16, 15:21, 16:11, 16:16, 31:19, 35:3, 38:9, 47:11, 48:11, 56:22, 57:2, 58:14, 62:23, 63:3
valves
11:2, 11:8, 11:22, 11:25, 12:3, 12:6, 12:10, 12:13, 12:17, 12:24, 14:14
variables
26:3
varying-diameter
42:25, 43:5
versus
4:7
video
4:13, 64:18
videographer
2:26, 4:4, 4:12, 4:24, 43:15, 43:18, 61:10, 61:13, 64:16
videotaped
1:20, 2:1, 4:5
view
60:16
viewed
63:23
vinyl
19:13, 46:5
virtually
19:12, 44:10, 45:7, 45:20, 46:2, 47:1
voice
4:16
vs
1:8

W

want
6:13, 7:19, 11:6, 17:13, 36:6, 51:3, 56:20, 57:21, 63:9, 63:11
wanted
16:9
way
36:2, 42:1, 66:25
we'll
17:3, 51:14, 64:21
we're
6:1, 61:13, 64:17
we've
5:12, 12:19, 14:18
welcome
5:10
went
35:25, 48:5
weren't
60:21
what'd
63:6
whatever
30:10
whereof
66:27
wide
19:8
wider
52:14
wire
13:7, 13:8, 13:16, 13:23, 14:3, 14:7, 14:15, 15:1, 15:8, 15:21, 16:12, 16:18, 24:16, 25:16, 26:5, 30:10, 31:1, 32:11, 32:14, 40:4, 40:11, 41:10, 41:11, 42:17, 42:21, 42:24, 43:3, 50:10,

52:5, 53:9, 55:23
withdraw 9:18, 9:20, 35:8
without 47:7
witness 4:21, 5:1, 5:6, 9:14, 10:6, 10:13, 11:4, 11:10, 12:5, 14:10, 14:11, 15:4, 15:12, 16:21, 21:14, 21:24, 22:21, 23:25, 24:11, 24:21, 25:5, 25:22, 26:8, 27:10, 27:23, 28:10, 29:7, 29:22, 30:16, 31:4, 31:14, 31:25, 32:18, 32:25, 33:10, 33:23, 34:13, 35:1, 35:20, 36:18, 37:9, 37:23, 38:18, 38:25, 39:11, 40:16, 40:23, 41:15, 43:9, 44:15, 44:24, 45:10, 46:14, 47:7, 47:16, 47:25, 48:20, 49:9, 50:12, 51:17, 52:7, 53:16, 54:21, 55:5, 55:20, 57:16, 59:19, 60:2, 64:15, 65:9, 66:8, 66:12, 66:27
word 11:18, 20:3
worded 35:9
words 45:10, 51:25
work 17:9, 19:5, 19:23, 20:4, 21:8, 21:11, 21:16, 21:19, 21:25, 22:12, 22:16, 22:17, 22:18, 45:13, 48:1
worked 12:6, 12:10, 48:12
working 14:11
works 21:15
wouldn't 21:16, 21:19, 22:16, 22:17, 30:3, 30:5, 30:7, 34:10, 34:18, 35:11, 37:3, 46:11, 48:13, 48:15, 60:22
wrap 29:9, 29:16, 34:19, 40:8, 48:24
wrapped 24:3, 31:1, 36:1, 42:22, 63:16
wrapping 28:1, 28:22, 29:2, 38:1
wraps 32:11, 36:20, 41:25

Y

yeah 22:21, 25:22, 26:8, 33:10, 33:16, 33:23, 34:13, 39:18, 40:16, 41:22, 42:20, 64:21
years 11:13, 11:19, 12:1, 12:5, 12:9, 12:16, 12:20, 13:16, 14:2
yesterday 6:22, 9:22, 10:3, 10:7

.

.0404 2:14
.3271 2:23

0

0 14:18
00 18:24, 19:17, 43:16
00156 1:8, 4:9
011 8:12, 14:17, 14:20
012 8:11, 39:18, 56:17
0225379 3:25
07 43:19

1

10 8:7, 37:20, 47:3
1001 3:20, 56:9, 56:10, 56:14
1003 3:21, 8:23, 9:1, 9:5, 9:7, 9:21, 10:3, 10:19, 17:4, 30:20, 31:21, 32:4, 39:19, 53:17, 54:4
1005 3:24, 17:21, 17:22, 18:11, 45:15, 57:19
1008 3:27, 18:5, 18:7, 57:21
1020 3:28, 7:22, 7:23, 15:24, 16:3, 17:7, 18:21, 22:24, 36:7, 37:20, 38:8, 42:6, 44:6, 47:3, 53:7, 54:15
11 12:23
11,697,011 3:32, 50:25
11,697,012 1:10, 3:20, 3:23, 9:10
11,697.011 3:11
12 2:5, 4:3, 4:11, 12:16, 66:20
13691 1:29, 2:2, 5:3, 66:6, 66:32
14 2:12, 10:23, 11:1, 11:7, 11:12, 11:21, 12:2
15 18:24, 19:17
16 30:22, 31:1
165 20:9, 20:12, 20:14, 20:16, 45:19

166
18:15, 18:25, 19:6, 19:21, 20:13, 20:15, 20:18, 20:20, 21:1, 21:3, 21:20, 22:9, 45:19
17
3:24, 30:22, 31:1, 31:20, 32:3, 33:7
1700
2:21
18
3:27, 31:14, 31:18
1888
2:21
19
23:19, 42:6

2

2
43:16, 43:19, 61:11, 61:14, 64:17, 64:18, 64:23, 66:20
20
1:23, 2:5, 4:2, 4:10, 18:24, 35:20, 36:8, 37:10, 37:20, 38:7, 42:20, 44:6, 45:8, 46:10, 47:3, 47:12, 49:10, 50:1, 50:9, 59:12, 66:19
2000
13:1
2003
3:25
2011
3:8, 50:17, 50:18, 50:22, 50:24, 51:15, 53:10, 54:1, 55:6
2012
3:13, 61:24, 62:1, 62:5
2020
12:15
2024
9:15, 62:10, 63:21
2025
1:8, 1:23, 2:5, 4:2, 4:9, 4:10, 65:10, 66:19, 66:28
2040
2:12
21
2:6, 4:14, 66:18
22
56:19
24
66:28
25
1:23, 2:5, 4:2, 4:10, 66:19
276
59:9, 59:10, 59:11

3

30
56:19, 57:22, 57:24, 58:3, 58:5, 58:9, 58:11, 58:16, 58:19, 59:8
31
17:10, 19:6, 19:24, 20:5, 20:23, 21:4, 21:21, 22:8, 31:5
310.788
2:23
32
60:15, 60:16
33
16:7, 17:6, 18:20, 19:3, 19:4
333
2:5, 4:14, 66:18
34
17:10, 19:6, 19:25, 20:6, 20:23, 20:24, 21:4, 21:21, 22:9, 22:23, 23:20, 33:13, 58:11, 59:8, 60:16, 62:16
35
11:13, 11:19, 12:1, 12:5, 12:9, 12:20, 13:16, 14:2, 30:21, 30:23, 31:20, 32:4, 64:5
36
64:5
360
29:18

4

4
10:23
40
61:11
422
31:21, 32:3, 32:14
46
61:14

5

50
3:8, 51:2, 51:4, 51:18, 55:5
51
51:4, 64:17, 64:18, 64:23, 66:20
55
23:13, 23:17, 27:19, 29:1
56
2:5, 3:20, 4:3, 4:11, 66:20
59
18:13, 18:22, 19:10, 19:22, 20:10, 22:15, 45:15, 45:16

6

608049
1:30
62
3:13
66
1:31

7

75
51:2

8

85
62:17

9

90067
2:22
92614
2:13
949.760
2:14
95
13:1