



Planet Depos®
We Make It *Happen™*

Transcript of Glenn Vallee, Ph.D.

Date: January 16, 2026

Case: Trove Brands, LLC -v- CamelBak Products, LLC (PTAB)

Planet Depos

Phone: 888.433.3767

Email: transcripts@planetdepos.com

www.planetdepos.com

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4
5 TROVE BRANDS, LLC

6 Petitioner,

7 V.

8 CAMELBAK PRODUCTS, LLC

9 Patent Owner.

10
11 IPR2025-00140

12 Patent 11,851,250

13
14 Deposition of GLENN VALLEE, Ph.D.

15 Conducted Virtually

16 Friday, January 16, 2026

17 11:06 a.m. EST

18
19
20 Job No.: 615070

21 Pages: 1 - 171

22 Reported By: Karen Klerekoper, CSR-4250, RPR

1 Deposition of, GLENN VALLEE, Ph.D., conducted
2 virtually:
3
4
5
6
7
8

9 Pursuant to Notice, before Karen Klerekoper,
10 Notary Public in and for the State of Michigan.
11
12
13
14
15
16
17
18
19
20
21
22

A P P E A R A N C E S

ON BEHALF OF THE PETITIONER:

ZACHARY MESSICK, ESQUIRE

MORGAN LEWIS & BOCKIUS LLP

600 Anton Boulevard, Suite 1800

Costa Mesa, California 92626

714.830.0600

ON BEHALF OF THE PATENT OWNER:

JASON MUDD, ESQUIRE

SHOOK HARDY & BACON LLP

2555 Grand Boulevard

Kansas City, Missouri 64108

816.474.6550

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

INDEX

WITNESS:

PAGE:

DR. GLENN VALLEE:

EXAMINATION BY MR. MUDD:

5

EXHIBIT:

PAGE:

(Exhibits previously marked.)

Exhibit 1001	6
Exhibit 1002	8
Exhibit 1015	8
Exhibit 2014	10
Exhibit 14	73
Exhibit 1014	76
Exhibit 1006	108
Exhibit 1017	122
Exhibit 1018	129

1 P R O C E E D I N G S

2 (Oath stipulation read and agreed by
3 counsel and witness.)

4 GLENN VALLEE, PhD, having been duly sworn
5 testified as follows:

6 EXAMINATION

7 BY MR. MUDD:

8 Q Good morning, Dr. Vallee.

9 A Good morning. How are you?

10 Q I'm good. How are you doing?

11 A Great.

12 Q It's good to see you again. I think this
13 is our fourth deposition now in these IPRs between
14 Trove and CamelBak, if my count is correct.

15 A Yeah, something like that.

16 Q You understand that we are applying the
17 same ground rules that we have discussed in your
18 prior depositions in these IPRs; is that fair?

19 A I do, yep.

20 Q Okay. In that case, I won't repeat them
21 again.

22 You understand today we are here in

1 connection with IPR Number 2025-00140, regarding
2 U.S. Patent Number 11,851,250?

3 A Correct.

4 Q And I'll call this the '250 patent. Is
5 that fair? Or the '250?

6 A Yeah, that's fine, the '250.

7 Q Okay. And this is the second time you
8 have had your deposition taken in this particular
9 IPR regarding the '250 patent, correct?

10 A That's right.

11 Q And you were initially deposed regarding
12 your opinions in your first declaration, which is
13 Exhibit 1002 in this case, right?

14 A Right.

15 Q And since that deposition, you have
16 submitted a second declaration, which is Exhibit
17 1015?

18 A That's right.

19 Q Okay. I'm going to place into the chat
20 what's been marked Exhibit 1001, which I'll
21 represent is the '250 patent.

22 (Marked for identification Exhibit 1001.)

1 Q Can you confirm that this is the '250
2 patent?

3 A I have the '250 patent hard copy in front
4 of me.

5 Q Okay.

6 A You want me to take a look and confirm?

7 Q Yeah, I mean, if you have Exhibit 1001 in
8 front of you, that's fine.

9 A Okay, yeah. I have -- I have -- you may
10 recall I like to have the hard copies rather than
11 go through the chat.

12 Q Okay. Sounds good.

13 And so Exhibit 1001 is the '250 patent
14 that you're familiar with and have rendered
15 opinions regarding in this proceeding?

16 A Correct.

17 Q And then I'm going to place into the chat
18 Exhibit 1002 and Exhibit 1015. And it's fine if
19 you use your hard copies. So, Exhibit 1002 is
20 your first declaration in this IPR. I'll call
21 that your first declaration.

22 Is that fair?

1 A That's fair.

2 (Previously marked for identification
3 Exhibit 1002.)

4 Q And then Exhibit 1015 is your second
5 declaration in this IPR submitted in support of
6 Trove's reply brief. And I'll call that your
7 second declaration.

8 Is that okay?

9 A That's good.

10 (Previously marked for identification
11 Exhibit 1015.)

12 Q Okay. Now, you understand that the '250
13 patent is a continuation patent, correct?

14 A Yes, I believe that is so.

15 Q And you understand that one of the earlier
16 patents that the '250 patent claims priority
17 through is U.S. Patent 10,676,255, also known as
18 the '255 patent; you're aware of that?

19 A Yes, I am. Just looking for it on the
20 cover here. Yeah, that's correct.

21 Q And you have offered opinions regarding
22 that '255 patent in another IPR between Trove and

1 CamelBak, right?

2 A Right.

3 Q Okay. And it's your understanding that
4 the '250 patent and the '255 patent share the same
5 written description and figures; is that right?

6 A Correct. The claims are different,
7 however, some of them.

8 Q Okay. And would you agree that common
9 claim terms that are shared between the '255
10 patent and the '250 patent should be construed
11 consistently?

12 MR. MESSICK: Object to the form.

13 A I think -- I think as -- as a whole, it --
14 see, it depends on the claims and -- I mean,
15 they're two different patents, so they're
16 different claims. And I try to read a patent in
17 its entirety as opposed to just taking, you know,
18 mapping of one to the other.

19 But it's typical for them to be
20 consistent, but you have to go claim by claim and
21 look at the patent as a whole.

22 Q Okay. And let's take an example of a

1 claim term.

2 So the '255 patent and the '250 patent
3 both use the term "pivotal movement," right?

4 A Again, if we're going to be discussing the
5 '255, do you mind if I just take a second and --
6 and bring that up here?

7 Q Sure. I can put the '255 into the chat as
8 well.

9 MR. MESSICK: Dr. Vallee, I don't believe
10 you have a hard copy of the '255. You might have
11 to use the electronic version.

12 A Okay. I mean, if we put it in the chat,
13 let's see if we -- I can find it.

14 Q So, I've just put what's been marked in
15 this IPR as Exhibit 2014, which I'll represent is
16 the '255 patent. If you could download it and
17 please confirm that for me.

18 A Okay.

19 (Previously marked for identification
20 Exhibit 2014.)

21 A Just bear with me for a second, please. I
22 downloaded it and now I got to find it.

1 We have it. Success.

2 Q All right. Great.

3 A And that is the '255 patent I see.

4 Q Yes. And you're aware that the '255
5 patent and the '250 patent both use the same term
6 "pivotal movement"?

7 MR. MESSICK: Object to the form.

8 A Let's see. Just taking a quick scan here
9 of the '255. It's been a while.

10 (Witness reviewing document.)

11 A Okay. I see " pivotal moment" in the
12 '255, in the claims.

13 Go back to the '250.

14 (Witness reviewing document.)

15 A Yep, I see those terms in both.

16 Q Okay. And since the '250 and the '255
17 patent share the same written description and
18 figures, you'd understand the term "pivotal
19 movement" to be used consistently between those
20 two patents, right?

21 MR. MESSICK: Object to the form.

22 A Let's see, again, if you just bear with me

1 for a second while I check out the '255 again.

2 (Witness reviewing document.)

3 A I'm not see why I difference between the
4 '255 on the screen, you know, in common line
5 numbers.

6 For example, I just happen to be looking
7 at -- in the '255, column 14, line 5, for example,
8 and they are not the same.

9 On the '255, column 14, line 5, says: Air
10 return valve, for example.

11 Column 14, line 5, of the '250 says:
12 Drink container internal.

13 Q Okay. So the column and line numbers, the
14 text doesn't exactly line up between the two, is
15 that what you're saying?

16 A Yeah. So the specification is a little
17 different.

18 Q Well, I think in terms of spacing, right,
19 in terms of where the text appears within the
20 column and line numbers?

21 A Yeah. I mean, I would have to go through
22 the whole thing to verify that. I never really

1 did a comparison between the -- you know, the two
2 patents line for line, but...

3 Q Sure.

4 A Anyway, so...

5 Q I'll represent to you the text is the same
6 because they are continuations, and it has to be,
7 but why don't we look, for example, you want to
8 check the air return valve -- sorry, what was
9 that?

10 (Indiscernible crosstalk.)

11 Q Column 14, line 5.

12 So, if you go up from -- in the '250
13 patent about 8 lines, go to column 13, line 65.

14 A Yep, I see that. Why are they -- I wonder
15 why they're different.

16 Q So, I can show you. So if you go to
17 column 1, line 5, the list of related applications
18 is going to be longer in the downstream patent, if
19 that makes sense.

20 A That makes sense.

21 Q So it looks like there's about an eight
22 line, or so, differential between the two.

1 A I see. Okay, that makes sense to me.
2 Thank you for clearing that up.

3 Q Sure.

4 A It's been a while since I looked at the
5 '255.

6 Q Yeah, not a problem.

7 So, since the '255 and the '250 patents
8 have the same written description and figures, it
9 would be your understanding that the use of a
10 common term like "pivotal movement" should be
11 construed consistently between these two patents,
12 right?

13 MR. MESSICK: Object to the form.

14 A Well, again, I would -- I would have to
15 compare the entirety of the claims in both patents
16 to -- to verify that. As I said, I think -- I
17 think typically they might be, but, you know, I
18 would have to -- I would have to treat them as,
19 you know, one set of claims versus another set of
20 claims.

21 Q So do you contend the term "pivotal
22 movement" means something different in the '250

1 patent from what it means in the '250 patent?

2 MR. MESSICK: Object to the form.

3 Q Sorry, I stated that incorrectly.

4 Do you contend the term "pivotal movement"
5 as used in the '250 patent has a meaning different
6 than the term "pivotal movement" used in the '255
7 patent?

8 MR. MESSICK: Object to form.

9 A Again, I think I'd have to look at all the
10 claims in each one of them to do a comparison just
11 to make sure they're used consistently.

12 Again, I think typically they might be,
13 but, you know, sitting here, I'd really feel more
14 comfortable just doing the claim-by-claim
15 comparison to make sure claim-wise they are used.
16 Because the -- you know, the specification, my
17 understanding, helps you to understand what is
18 claimed. But depending on how the claims are
19 worded, there could be slight differences.

20 Q Okay.

21 A That's all.

22 Q So, sitting here, having arrived at your

1 opinions as to the '250 patent, you did not take
2 into consideration whether you were construing the
3 term "pivotal movement" in the '250 patent
4 consistently with how you interpreted it in the
5 '255; is that correct?

6 MR. MESSICK: Object to the form.

7 A Well, I think I took a look at the '250,
8 read the specification, and -- and then studied
9 the claims.

10 And then as a separate issue, I did the
11 '255 back when we did -- you know, must have been
12 over a year ago by now, I guess.

13 Now, I did not do that comparison between
14 one patent to another for consistency, per se. I
15 looked at each patent individually, understanding
16 what is incorporated. But, you know, I took a
17 look at each patent individually and made my
18 assessment that way.

19 Q Okay. Understood.

20 So, when arriving at your opinions for the
21 '250 patent, you didn't take into consideration
22 whether those were consistent with opinions you

1 had rendered regarding the '255 patent; is that
2 fair?

3 MR. MESSICK: Object to the form.

4 A Like I said, I didn't do a formal study to
5 see if everything was consistent. You know,
6 again, typically, I think they are, if it's
7 incorporated. But I do look at each one
8 individually.

9 Q Okay. Thank you, Dr. Vallee.

10 You authored both your first declaration
11 and second declaration in this proceeding; is that
12 correct?

13 A Correct.

14 Q And you still stand by all of your
15 opinions in your first and second declarations; is
16 that correct?

17 A I do.

18 Q Since we were talking about that term
19 "pivotal movement," I want to briefly talk about
20 that term. So, if we could, in your second
21 declaration, go to paragraph 8, please.

22 A The one drawback of these big binders,

1 they are heavy, so it takes me a minute to --

2 Q Yes.

3 A -- juggle them around.

4 Okay, let's see, paragraph 8.

5 Okay, I'm there.

6 Q You state in paragraph 8: A POSITA would
7 understand that in the context of cap assemblies
8 and mechanical linkages, in the '250 patent in
9 particular, quote, pivotal movement, unquote,
10 refers broadly to motion that occurs by virtue of
11 a hinge or pivot joint and is not limited to the
12 textbook notion of a perfectly rigid body
13 undergoing pure rotation about a single fixed axis
14 with every point tracing a circle of constant
15 radius.

16 Do you see that?

17 A I do.

18 Q So, in your opinion, does pivotal movement
19 not necessarily require rotational motion in the
20 '250 patent?

21 A Well, I think what I'm saying is pivotal
22 motion is a little more general, you know.

1 Something will rotate, or members of an assembly
2 could rotate.

3 Q So, in your opinion, in the '250 patent
4 pivotal motion is more general than rotational
5 motion?

6 A Yeah, I think it is, a little broader.

7 Q And so, in your opinion, pivotal movement,
8 as that term is used in the '250 patent, does not
9 necessarily require rotational motion?

10 A No. I think what I mean is when you --
11 pivotal will involve some kind of rotation, but
12 it's not, as I stated in the declaration, a rigid
13 body fixed rotation. It can involve more.

14 Q So, it would be correct, then, to say
15 that, in your opinion, pivotal movement, as used
16 in the '250 patent, does not necessarily require
17 rotational motion as that term is defined in
18 physics?

19 (The court reporter asked for clarification.)

20 MR. MESSICK: Object to the form.

21 A Sorry, Jason, can you repeat that question
22 one more time?

1 Q So, is it correct, then, that, in your
2 opinion, the term "pivotal movement," as used in
3 the '250 patent, does not necessarily require
4 rotational motion as that term is defined by
5 physics?

6 MR. MESSICK: Object to the form.

7 A No. I -- I think what I'm saying is that
8 the laws of physics, or, you know, typical physics
9 definition of rotation does not include general
10 plane motion, which can also have translation.

11 It's basically talking about a single
12 rigid body, whereas the pivotal motion can use --
13 for example, a linkage could have -- that has
14 pivotal motion should have some component that
15 rotates, but it doesn't have to have every
16 component rotating identically.

17 In other words, if it's a linkage, you can
18 have rotation by your physics definition with
19 respect to one point, but you could also have
20 rotation of another with respect to another point.

21 So, if I call the first link in the
22 linkage, for example, link 1, it can rotate about

1 some point where it's pinned, for example, or
2 where it's fixed along an axis so it can rotate.

3 But you could have another link connected,
4 link 2 connected to link 1, which can rotate about
5 a different point.

6 Therefore, link 2 would undergo typically
7 some form of general plane motion, where they are
8 depending on each other.

9 Link 2, obviously since they are
10 connected, has to have some rotational features
11 about where link 1 rotates.

12 So, I guess what I'm saying is, I mean,
13 each link individually, by a pure physics
14 definition of pure rotation, you know, can rotate
15 with respect to different axes.

16 Q So, if I understand your answer correctly,
17 I think you are agreeing with me that it is your
18 opinion that the term "pivotal movement," as used
19 in the '250 patent, does not necessarily require
20 rotational motion as that term is defined in
21 physics because, in your opinion, a single rigid
22 body is not required?

1 MR. MESSICK: Object to the form.

2 A No. I think what I'm saying is that, as
3 defined in physics, individual components of the
4 total linkage can't certainly rotate about one
5 point as a rigid body.

6 But when you have the assembly of
7 different parts, the end motion -- let's say we
8 discussed link 1 and 2, if one end of link 2 was
9 farthest away from the pivot point of link 1, it
10 can have its own rotational, and even
11 translational motion, with respect to the pivot
12 point of link 1.

13 We are not violating any physics here. We
14 are saying that, you know, with assemblies, it's
15 more complicated. So pivotal movement can include
16 that motion of different rotations, for example,
17 or even a translation of different components of
18 the linkage.

19 Q So, in your opinion, in the '250 patent
20 movement of an object that occurs relative to a
21 hinge or pivot joint constitutes pivotal movement,
22 even if it's not pure rotational motion, correct?

1 A Well, the pure rotational motion, it can
2 be pure rotation about a different point than --
3 I'll use my link 1 and link 2 example. Link 1 --
4 we'll say link 2 is farthest away from where link
5 1 pivots.

6 So, individually they each can't have a
7 pure rotation, but it's the assembly that may not
8 due to the fact that you have different links
9 grounded, if I will, for example, where link 1
10 pivots at different points.

11 Q You testified earlier that pivotal
12 movement is more general than, and broader than,
13 rotational motion, correct?

14 A That's true.

15 Q And are you changing that testimony now or
16 are you sticking with that?

17 A No, I think I --

18 (Indiscernible crosstalk.)

19 A Oh, I'm sorry, was there an objection?

20 MR. MESSICK: Yes, object to the form. Go
21 ahead.

22 Q Let me rephrase that. Are you maintaining

1 that earlier testimony?

2 A Well, yeah, I think I explained on your
3 previous questions exactly why I feel pivotal
4 movement is somewhat broader than pure rotational
5 motion.

6 Q So, if you had taken the position with
7 regard to the '255 patent that the term "pivotal
8 movement" referred to rotational motion, then, in
9 your opinion, the '250 patent uses the term
10 "pivotal movement" differently than the '255; is
11 that correct?

12 MR. MESSICK: Object to the form.

13 A I'm sorry, you were referring to my
14 declaration, for example, with the '255; is that
15 what you were referring to?

16 I don't remember exactly what was said
17 about the '255 case. This -- you know, this is a
18 little different. Maybe I misunderstood your
19 question.

20 Q Sure.

21 MR. MUDD: Ms. Klerekoper -- I'm sorry if
22 I'm mispronouncing your name -- would you be able to

1 read back the question, please?

2 (The requested portion of the record was
3 read by the reporter at 11:32 a.m.)

4 MR. MESSICK: Objection.

5 THE WITNESS: Okay, thank you.

6 A What I have to do is go back to my
7 declaration in the '255 and go back and see where
8 I discussed that and, you know, just -- just get
9 some clarification on -- on what I said the last
10 time in that declaration. You know, it was a
11 different patent, different declaration.

12 Q So, do you have an opinion on whether the
13 term "pivotal movement" means the same thing in
14 the '250 patent as in the '255 patent?

15 A Again, I'd -- I'd have to go -- and I can
16 do that. I can go back to my '255 declaration, go
17 through my discussion. As I said, there are two
18 different patents with different claims. But my
19 position with the '250 is exactly as I, you know,
20 just stated.

21 (Pause in the proceedings.)

22 Q Dr. Vallee, just one minute.

1 A No problem.

2 Q I'm going to switch gears for a bit, and I
3 want to turn to the term "mouthpiece" as it's used
4 in the '250 patent.

5 I always have to remind myself that we're
6 talking about the '250 and not the '255. The
7 numbers are so close.

8 A Yeah, it's confusing.

9 Q It's so easy to slip one in for the other.

10 Okay. If you could please turn to
11 paragraph 44 of your second declaration.

12 A Okay, I'm there.

13 Q And I actually want to go to paragraph 45.
14 And you state in paragraph 45: A POSITA would
15 understand a mouthpiece to refer to the portion of
16 a dispensing structure that forms the user-facing
17 end of the fluid flow path and is positioned at
18 the drinking interface, i.e. the part that the
19 user places at/or near the mouth when consuming
20 fluid.

21 Do you see that?

22 A I do.

1 Q And then if you skip the next sentence and
2 read the following sentence, beginning with "the
3 key technical feature," you state: The key
4 technical feature is that the component is
5 configured to serve as the terminal delivery
6 structure for fluid intake and is intended to be
7 approached by the user's mouth during use,
8 regardless of whether any surrounding structural
9 features encase it.

10 Do you see that?

11 A I do.

12 Q So, is it your opinion that a mouthpiece
13 does not need to be able to contact the user's
14 mouth to be considered a mouthpiece?

15 A I mean, it can -- I don't think it has
16 to -- it can contact. It doesn't have to contact.

17 Q And in your opinion, a mouthpiece need
18 only come near or be approached by a user's mouth,
19 right?

20 MR. MESSICK: Object to the form.

21 A Yeah, I agree what I -- what I said in
22 that sentence: Is intended to be approached by

1 the user's mouth during use, regardless of whether
2 any surrounding structure feature encases it.

3 Q Do you have an opinion as to how near to
4 the user's mouth a part must be able to get to be
5 considered a mouthpiece?

6 A Well, I think -- I mean, one in the art
7 would -- there are different ways you can use a
8 mouthpiece. For example, the squeeze embodiment
9 in the patent just says you have to squeeze it to
10 dispense it. Then the dispensing face can be in
11 your mouth.

12 I mean, I -- I don't think it's an exact
13 measurement and when you say "near the mouth," if
14 it's in the mouth but not touching the mouth, I
15 mean, it's near parts of the mouth. I don't think
16 it's a term that's construed by a distance. I
17 think it's a term that's just understood.

18 You know, if you are going to drink with a
19 water bottle, or something like that, you got to
20 get it near enough to your mouth so that you can
21 dispense the fluid in your mouth; let's put it
22 that way.

1 Q So, how near the user's mouth has to be
2 able to get is -- to be a mouthpiece is dependent
3 on how far the water can be projected from the
4 bottle to the mouth?

5 A No, I don't -- again, I don't think it's
6 some distance. You know, I think someone in the
7 art would look and say, you know, if it's -- you
8 know, it would have to be a distance so you can
9 reliably get -- dispense the fluid. You know, I
10 don't think it would be an arm's length, or
11 anything like that. But it's not a -- it's not a
12 fixed distance. I think it's simply near enough
13 to do its job.

14 When I read the claims, you know, and
15 understand, you know, this product in what's
16 claimed, it has to do its job of dispensing the
17 fluid in the mouth.

18 Q The '250 patent in the art don't have an
19 objective standard for how near someone's mouth
20 has to be to a part to be considered a mouthpiece,
21 right?

22 A Again, I think it's not a distance thing,

1 as I said, so, it's just, you know, near enough
2 to -- to function as -- as the claimed invention
3 is supposed to function.

4 Q And so, if it's not a distance and we're
5 talking about how near the mouth has to be for it
6 to be a mouthpiece, then there is no standard
7 provided by the art of the patent for how near the
8 mouth has to be, right?

9 A Well, there is no distance. But you
10 interpret these -- these consumer products case by
11 case when you look at them, you know, to see if
12 you can, you know, consider a normal use and how
13 the claims describe it, whether it would be a
14 mouthpiece or not.

15 (Indiscernible crosstalk.)

16 A Oh, I'm sorry, that's my fault. I paused.

17 You know, it has got to be near enough
18 to -- to do -- do the job as claimed.

19 Q So, a person of ordinary skill in the art
20 would know it when they see it to know whether
21 it's a mouthpiece or not?

22 A Well, given -- given the full description

1 and how it's used and what the product is that the
2 mouthpiece is related to, I think one in the art
3 could -- could understand that.

4 Q Persons of ordinary skill in the art
5 differ in their view as to how close a part has to
6 be able to get to the user's mouth to be
7 considered a mouthpiece?

8 A I mean, again, it -- since it's not a
9 distance, it's a perception. You know, there is
10 no measurement you have to be X amount, they would
11 have to be -- you know, if they are looking at
12 different products, there could be a difference.

13 But I think, in general, a POSITA looking
14 at a water bottle like this, and I know it's
15 really -- a drink bottle could be anything --
16 would have a sense for, you know, what they would
17 consider, you know, near. It's not a fixed
18 distance.

19 Q And since "near" is not a fixed distance,
20 in your opinion, it could be somewhat gray or
21 ambiguous as to how near it has to be if you
22 consider it a mouthpiece, correct?

1 A I don't think so.

2 MR. MESSICK: Object to form.

3 A I don't think so. I think people who
4 understand these products would have the same
5 general perception on what they would consider
6 near.

7 Q Also referred to a mouthpiece being
8 approached by a user's mouth, is -- did you intend
9 any difference in meaning between using the term
10 "near" and "being approached by"?

11 A Well, I think "approached by" is the act
12 of getting it near.

13 Q So, like with "near," there wouldn't be a
14 given distance required for "approached by,"
15 correct?

16 A I mean, you know, it's not an engineering
17 term where you would devise a specification at a
18 distance.

19 You know, when I -- back to paragraph 45,
20 again, that last sentence on page 44, is intended
21 to be approached by the user's mouth during use,
22 regardless of the feature.

1 So, I use "being approached" in that
2 sentence -- I -- I think it's pretty clear in that
3 sentence. So, if you allow me just to read it.

4 The key technical features that the
5 component is configured to serve as the terminal
6 delivery structure so that the end, or fluid
7 intake so the user can get it, intended to be
8 approached by the user's mouth during use.

9 So, your -- you know, you have your
10 product and it's the terminal end, and that's what
11 is going to interface with your mouth, either
12 being near it, in it, on it, et cetera.

13 Q I believe you testified earlier that it
14 could vary from bottle to bottle, correct?

15 A I think it could vary from embodiment to
16 embodiment in the patent. Right?

17 There are many -- the patent does -- has
18 many different embodiments. You know, some that
19 have a little neck. Some that -- I mean, you
20 know, there are many different ones.

21 But, I mean, you look at an embodiment and
22 I think a POSITA would have a sense for what --

1 (Indiscernible crosstalk.)

2 A I'm sorry. It's my fault again. I'm
3 sorry. I'm done. Of what near would be. Okay.
4 Now it's your turn.

5 Q When I asked you whether persons of
6 ordinary skill in the art could have a difference
7 of opinion in what is sufficiently near to
8 constitute a mouthpiece, I believe your testimony
9 included the fact that it could vary from bottle
10 to bottle.

11 Is that correct?

12 A What I meant by that was, if -- if a group
13 of POSITAs got together and looked at one design,
14 one bottle, I think they'd all have the same
15 general consensus, here's what "near" is.

16 But if they compare bottle A to bottle B,
17 depending on what the design is, that could be
18 different. Again, I would have to see different
19 designs. Some may be the same, you know.

20 But as a group, I think they -- they would
21 agree on what it is for any given design.

22 Q Understood.

1 So, under your definition, which looks at
2 how near or whether the mouth approaches the part,
3 if I take that -- that part on bottle A could be a
4 mouthpiece, but then I put that same part on
5 bottle B, it could go -- it might go longer than
6 the mouthpiece; is that correct?

7 MR. MESSICK: Object to the form.

8 A Again, if you showed me examples of it, I
9 could give an opinion on that. I haven't looked
10 at different designs other than what's in here. I
11 think -- I think what would be considered the
12 mouthpiece, so long as it, you know, is at the
13 dispensing outlet, et cetera, would probably be
14 very consistent.

15 All I'm saying as far as its operation,
16 that could be a little different, depending on the
17 embodiment. I haven't really given A to B any
18 consideration. You know, I just took a look at
19 what the patent was in those embodiments.

20 Q Let me give some examples and try to flush
21 this out. So, you're familiar with a, like, soft
22 drink fountain that you might see at, like, a

1 fast-food restaurant that dispenses soft drinks
2 such as soda, are you familiar with such a
3 machine?

4 A Okay, you're talking about those machines
5 where you push the button, you put the cup under
6 it and -- okay, got it.

7 Q Yep.

8 Would a nozzle for dispensing a soft drink
9 into a cup on a soda fountain like that be
10 considered a mouthpiece under your definition
11 because a user could bring their mouth near it?

12 MR. MESSICK: Object to the form.

13 A I can't imagine someone sticking their
14 head under one of those machines and pushing the
15 button, but -- I mean, that's -- that's not a
16 consumer product. That's not something like a
17 water bottle that's portable that holds a fluid.
18 I mean, that's a dispensing machine. I don't
19 think you can compare a component on a dispensing
20 machine to, you know, what's described in the
21 patent.

22 Q What about, like, a beer tap at a bar for

1 dispensing draft beer, could that be a mouthpiece
2 under your definition because a user can approach
3 it with their mouth or get their mouth near it?

4 A Okay. Are you talking about the general
5 taps you see at the bar where you pull it and it
6 comes out?

7 Q Yes.

8 A It's the same as my answer before, that's
9 not a water bottle, a portable device. That's
10 something where you'd have to get under it and
11 stick your mouth, and you'd probably get thrown
12 out of the bar, I guess, if you did that. I've
13 never done it.

14 Q The soft drink dispenser and the beer tap
15 wouldn't be considered a mouthpiece because they
16 are not designed or intended for a user to place
17 their mouth in contact with it?

18 (Indiscernible crosstalk.)

19 A I think it's even broader than that.
20 The -- these tabletop machines that are designed
21 to dispense a drink into a cup or something else
22 that the user can drink from, I mean, they are

1 just completely different products. I don't think
2 you can make any comparisons like that.

3 Q What if something is designed for a user
4 to place their mouth on it is a relevant
5 consideration in whether something is a
6 mouthpiece, right?

7 A Well, I think it's relevant if it's -- if
8 it's related to this case with water bottle or
9 portable drink containers. But beer taps and soda
10 dispensers, it's just apples to oranges.

11 Q Okay. So, on a drink bottle, whether a
12 part is designed to allow a user to place their
13 mouth on it is a relevant consideration on whether
14 it's a mouthpiece, right?

15 MR. MESSICK: Object to the form.

16 A Well, they don't have to put their mouth
17 on it. As I described in my -- my declaration,
18 you know, it could be -- it could be in the mouth,
19 not contacting the mouth. It could be pressed
20 against the mouth. It could be, you know, near it
21 to dispense it. I think they're different --
22 they're different definitions. It doesn't have to

1 be on.

2 (Pause in the proceedings.)

3 Q If you could turn to the '250 patent to
4 claim 1. I would like to go to the limitation
5 starting in column 19, line 10 -- sorry, line 8.

6 A Okay.

7 Q And the claim recites what it calls a
8 fluid conduit. Do you see that?

9 A Yep.

10 Q And then at line 10, in column 19, it
11 says: The fluid conduit includes an inlet through
12 which drink fluid from the fluid container may
13 enter the fluid conduit and a dispensing outlet
14 through which drink fluid in the conduit may be
15 dispensed from the cap assembly to a user.

16 Do you see that?

17 A I do.

18 Q So, that limitation requiring a fluid
19 conduit that includes a dispensing outlet does not
20 specifically require a mouthpiece, right?

21 MR. MESSICK: Object to the form.

22 A Well, it -- it just says what it says. It

1 doesn't even discuss a mouthpiece per se. It goes
2 down in other limitations to discuss that.

3 But, I mean, it -- it says what it says.
4 It's a -- it's got to have an in, and it's got to
5 have an out so the user can get the fluid.

6 I don't think it restricts and says that
7 the -- well, it says what it says. I'll leave it
8 at that.

9 (Indiscernible crosstalk.)

10 A It clarifies down below.

11 I did it again, Jason, I'm sorry. I
12 paused and I do that. I'm done.

13 Q Fluid conduit having a dispensing outlet
14 is not necessarily a mouthpiece, correct?

15 MR. MESSICK: Object to form.

16 A Well, let's see. It can be. This patent
17 refers -- gives more detail in the claims about a
18 portion it calls the mouthpiece.

19 I'm down at line maybe 30 -- 32. Talks
20 about the mouthpiece. I'm sorry, wrong line.

21 I'm at line 25, -6, -7. It starts talking
22 about how the mouthpiece is coupled to an outlet

1 for pivotal movement. So, it doesn't call -- I
2 mean, the fluid conduit is simply defined as the
3 fluid going in and -- let's see what it says --
4 and the fluid going out as it's dispensed.

5 So, I think it starts talking about the
6 conduit and then goes in more detail about what
7 the mouthpiece is.

8 Q So, in the claim, is the mouthpiece
9 something more than the outlet of a fluid conduit?

10 A I mean, I think you read the -- the claim
11 as a whole how the fluid has to get from the in to
12 the out. It passes through this conduit. And
13 then where it dispenses with respect to the user's
14 mouth is what the mouthpiece would be. I mean,
15 there are two -- there are two -- there is
16 mouthpiece and fluid conduit. This claim
17 describes how they go together.

18 Q You have to have both the conduit and the
19 mouthpiece in the claim, correct?

20 A Well, I think here there is, because it
21 gives more detail on the mouthpiece and the
22 motion. I don't think -- I mean, part of the

1 fluid conduit could be considered a mouthpiece in
2 certain instances, because it calls them two
3 different things. Right?

4 In the claims, they are not the exact same
5 thing, because it has go into more detail on one
6 portion of them. But they are all connected. The
7 fluid goes in, travels through the conduit and the
8 mouthpiece out to the user.

9 Q And it's your opinion that whether or not
10 a fluid conduit with an outlet has a mouthpiece
11 depends on how close it can get to the user's
12 mouth; is that correct?

13 MR. MESSICK: Object to the form.

14 A No, I think the term "mouthpiece," based
15 on our earlier discussion, can be defined like we
16 just discussed over the last half hour. The fluid
17 conduit is, you know, just a description of a
18 pathway. Maybe that's the best way to say it.
19 It's a pathway for the fluid to go, which can pass
20 through the mouthpiece, right?

21 Fluid conduit is a pathway where
22 mouthpiece, which can be part of the fluid

1 conduit -- in fact, I think it should be -- where
2 the mouthpiece is like the -- the tail end of
3 where it ends and how it's dispensed. Maybe
4 that's the best way to say it.

5 Fluid conduit is a pathway in the
6 mouthpiece is the end of that pathway, however
7 it's configured, as defined by what we just
8 discussed related to mouthpiece.

9 Q But the claim also recites a dispensing
10 outlet on the fluid conduit, correct?

11 A That's correct, yes.

12 Q So, the mouthpiece is something more than
13 the dispensing outlet of the fluid conduit,
14 correct?

15 MR. MESSICK: Object to the form.

16 A I mean, I think the dispensing outlet can
17 be part of the mouthpiece, right?

18 I mean, the fluid has got to come out. It
19 has got to get to the user. So, a dispensing
20 outlet -- I think -- I think it's the same thing.
21 The fluid conduit is the pathway, and it ends
22 where it's dispensed, which we'll define in

1 greater detail as a mouthpiece.

2 At the mouthpiece -- I think the fluid
3 conduit pathway is something that defines how the
4 fluid goes into the -- to the cap, you know, the
5 assembly, and goes out.

6 And the mouthpiece is that portion of the
7 fluid conduit where it, you know, relates to how
8 it's dispensed in the mouth.

9 Q The only way you can distinguish the
10 mouthpiece from the dispensing outlet -- outlet of
11 the fluid conduit pathway is whether or not it can
12 contact the user's mouth, correct?

13 MR. MESSICK: Object to the form.

14 A Well, let's see...

15 I think if you didn't have mouthpiece in
16 the claim specifically called out, a portion of
17 the fluid conduit could -- well, it would have to
18 satisfy what my definition of the mouthpiece is.
19 And we just went through that. So, we could, but
20 in this claim, there -- there are two different
21 things, right?

22 Pathway and a mouthpiece with more detail

1 in the claim that discusses what happens at the
2 end of that conduit.

3 Q So, let's use your example from earlier.
4 You said arm's length is too far to be a
5 mouthpiece, right?

6 A I did say that, yes.

7 Q So, if I hold a water bottle at arm's
8 length and it has a fluid conduit with a
9 dispensing outlet and I spray that water by
10 squeezing it out of the outlet into my mouth at
11 arm's length, that bottle does not have a
12 mouthpiece, under your definition, correct?

13 A Well, I mean, the bottle has what it --
14 what it has.

15 As I said, this isn't a distance thing. I
16 mean, I -- I use that as for example if you're way
17 out there. But it's not practical. I mean, you'd
18 have to be really good to try to -- I wouldn't do
19 it. I would get soaking wet.

20 (Indiscernible crosstalk.)

21 Q -- open my mouth, you can't do that? With
22 your arm extended, you have never done that?

1 A No, because I get soaking wet.

2 Q Okay. So, my point is that at arm's
3 length, that is not a mouthpiece because it's too
4 far. But if I bring it near my mouth, say, a
5 centimeter away, now it's a mouthpiece, correct?

6 A Well, what I said was that it has to be
7 the distance where it serves its function, okay?

8 I used as an extreme example -- I mean, a
9 mouthpiece is a mouthpiece, okay?

10 But I use an extreme example because I
11 don't think it's hard to do. I mean, you're more
12 talented than I because I would get soaking wet, I
13 guarantee that.

14 But, you know, as far as the claims go, I
15 mean, they don't -- you know, they don't talk
16 about distances. They don't talk about any of
17 that stuff. They talk about the mouthpiece, how
18 it pivots. They talk about how the -- the
19 dispensing outlet position is farther away from
20 the cap assembly. They talk about those things in
21 the claims, okay?

22 It's more -- you know, it's product by

1 product as you design something, you know. You
2 get a sense from the design what you consider a
3 mouthpiece. And I discussed it in my declaration
4 how -- how one would define it. You know, it can
5 be at or near. It can approach. It'll have a
6 dispensing face. It can be in your mouth, near
7 your mouth, pushed up against your mouth.

8 You know the -- so, you know, this -- you
9 read this patent, and, you know, you make a
10 judgment as a -- as a person in the art on, you
11 know, how you define a mouthpiece. And that's
12 what I tried to do in my declaration.

13 Q And so, whether a water bottle has a
14 mouthpiece or not under your definition is
15 dependent on how far away I hold the water bottle
16 when I spray water into my mouth, correct?

17 MR. MESSICK: Object to the form.

18 A Well, again, I -- I went through a
19 definition in my declaration of what I consider
20 a -- a mouthpiece.

21 And as I said, there is no fixed distance.
22 You can't take a tape measure and say if you go

1 too far, it's not a mouthpiece.

2 I'm saying when you look at the totality
3 of an invention, you make a determination as to
4 what component is a mouthpiece.

5 Q Is a much simpler commonsense definition
6 of a mouthpiece a portion that's designed to be
7 put into the mouth?

8 MR. MESSICK: Object to the form.

9 A Well, while that may be simple, that
10 excludes things that can be pressed against your
11 mouth or things where you open your mouth and you
12 just put it in and you have no contact. I mean, I
13 don't think the claims want to exclude those
14 things.

15 So, I think your -- the simplified
16 definition is too simple.

17 MR. MESSICK: We've been going about an
18 hour, Jason. Do you have -- how much longer do
19 you have --

20 MR. MUDD: I'm getting close to the end of
21 this line of question, so, yeah, we're almost at a
22 good stopping point.

1 Q So, it's your opinion that by reciting a
2 mouthpiece in the claims, the claims were not
3 intended to exclude a water bottle that simply has
4 an opening that you spray into the mouth from a
5 distance?

6 A Well, there is an embodiment, a squeeze
7 embodiment, I call it, that allows you to simply
8 squeeze it and you don't have to necessarily make
9 contact with the mouth. You can squeeze it into
10 the mouth, but it doesn't have to be touching.

11 Q I do want to talk about that squeeze
12 embodiment, but that's probably a -- a new line of
13 questions.

14 MR. MUDD: This is a good time. Let's go
15 ahead and take a break.

16 (Off the record.)

17 BY MR. MUDD:

18 Q Welcome back, Dr. Vallee.

19 If we can talk about these squeeze
20 embodiments in the '250 patent you were talking
21 about a little bit ago.

22 A Okay.

1 Q And if you could turn to paragraph 49 of
2 your second declaration, please. And in the
3 second sentence, you refer to, for example: The
4 '250 patent discloses embodiments in which the
5 user squeezes the fluid container causing fluid to
6 dispense through the outlet of mouthpiece into the
7 user's mouth.

8 Do you see that?

9 A I do.

10 Q Are these the so-called squeeze
11 embodiments you were talking about?

12 A Yes.

13 Q Okay. And you said that: In these
14 squeeze-type embodiments, the fluid is expelled
15 through the dispensing outlet 86 and into the
16 user's mouth without requiring the user to place
17 the mouthpiece itself between their lips.

18 Do you see that?

19 A I do.

20 Q Now, if you could, turn to the -- the
21 first cite you have there is to column 9, line 67,
22 through column 10, line 3, of the '250 patent, so

1 let's pull that up, please.

2 A 67. Okay. All right. Column 9.

3 Okay. Down at the bottom of the page.

4 Q Yeah, and I'd actually would like to start
5 at the start of that paragraph.

6 A Sure.

7 Q And that's column 9, line 59. So, it
8 says: In the preceding discussion, mouthpiece 72
9 has been described as a bite-actuated mouthpiece.
10 As also discussed in some embodiments, the fluid
11 container would be formed from material that
12 configures or permits the wall structure of the
13 fluid container to be collapsed inwardly as the
14 user squeezes the fluid container.

15 Then it says: This intentional reduction
16 in the internal volume of the fluid container may
17 urge drink fluid through the fluid conduit and
18 expel the fluid through the bite-actuated
19 mouthpiece.

20 Do you see that?

21 A I do.

22 Q So, in these so-called squeeze

1 embodiments, there is still a bite-actuated
2 mouthpiece present, correct?

3 MR. MESSICK: Object to the form.

4 A Well, they defined it as a bite-actuated
5 mouthpiece because you can either bite on it to
6 open the slit in the face of the mouthpiece, or
7 simply squeeze it to open the slit on the face of
8 the mouthpiece. I don't think they want to call
9 it something -- confuse the issue by calling it
10 something different. It's the same component used
11 in two different ways. And they just happen to
12 call the bite-actuated mouthpiece. But you don't
13 have to bite on it if you have the -- the squeeze
14 embodiment.

15 Q But that bite-actuated mouthpiece is
16 designed for a user to put their mouth on it,
17 correct?

18 A It's designed so a user can open it by
19 putting their mouth or by simply squeezing it.

20 Q And even in the squeeze embodiment, there
21 is still a component on the drink bottle that's
22 designed to allow the user to put their mouth on

1 it to drink from the bottle, correct?

2 A Well, as I said, they could use it that
3 way. But the user may buy the water bottle and
4 never use a bite-actuated mouthpiece to dispense
5 the fluid. They may just always just squeeze the
6 bottle.

7 Q There is no squeeze embodiment described
8 in the '250 patent that lacks a bite-actuated
9 mouthpiece, correct?

10 MR. MESSICK: Object to the form.

11 A I just want to take a second just to read
12 what we just read one more time.

13 (Witness reviewing document.)

14 A I think because they discussed the
15 mouthpiece that's opened as bite actuated first in
16 the specification, that they just continue with
17 that name so they didn't have to rename it when
18 they talked about the squeeze embodiment.

19 If they started with the squeeze
20 embodiment, they could have called it squeeze
21 activated.

22 Say, oh, by the way you could bite on it

1 to open it too.

2 So I think they just called it
3 bite-actuated because that's the way they started
4 the discussion.

5 They could have easily called it squeeze
6 activated and continue the discussion that way.
7 But it's -- it's the same -- the same basic
8 structure using two different ways. You don't
9 have to put your mouth on it if you go to squeeze
10 activate.

11 Does that make any sense?

12 Q But within rewriting the specification, as
13 you just suggested, there is no description of a
14 so-called squeeze-activated mouthpiece, correct?

15 MR. MESSICK: Object to the form.

16 A Well, I think there is a discussion. They
17 don't call it squeeze activated, but they say this
18 mouthpiece, they explain exactly how the
19 squeeze-activated mouthpiece works by reducing
20 internal volume, which raises the pressure, and
21 then dispenses it.

22 Q The squeeze embodiments, there is still a

1 component on the bottle that's designed to allow
2 the user to place their mouth on it to drink from
3 the bottle, correct?

4 A I think so, just as there was a component
5 designed to activate and squeeze. It does both.

6 Q And there is no embodiment described in
7 which the user merely squeezes water from a
8 dispensing outlet of a fluid conduit, correct?

9 A Squeezes water through the outlet.

10 I don't think the specification
11 describes -- I mean, the mouthpiece is the end --
12 can be the end portion of the fluid conduit but
13 the specification doesn't go into that specific
14 detail.

15 No, I don't see a -- just take a look at
16 the figures one more time because they are a good
17 representation of the embodiments.

18 (Witness reviewing document.)

19 A As I look -- I'm looking at figure 2, by
20 the way, and I believe that that -- if the bottle
21 itself were made of a -- just check -- of a -- you
22 know, compressible wall, it'd have to be a squeeze

1 activated.

2 Well, yes. Figure 10, 11, 15, show the
3 slit. There are many squeeze-activated --
4 actuated mouthpieces in here.

5 But it's only in what I cited that -- that
6 citation, 9, 67 and 59.

7 Also cite Exhibit 20, 21. There are
8 places where, you know, there are embodiments that
9 squeeze, but they only define and discuss in
10 detail where we cited column 9 at the bottom
11 there.

12 Q So I believe you already testified to
13 this, but I just want to confirm, all the squeeze
14 embodiments still have a bite-actuated mouthpiece
15 present, correct?

16 MR. MESSICK: Object to the form.

17 A As I look through the specification, I
18 think all the bite-actuated mouthpieces are also
19 squeeze-actuated mouthpieces, provided that the
20 container is squeezable.

21 Q Thank you, Dr. Vallee. We already
22 established the term squeeze-actuated mouthpiece

1 is not in the specification.

2 So my question is about the terminology
3 that the specification actually uses, which is a
4 bite-actuated mouthpiece.

5 Can we accept that my question is about
6 bite-actuated mouthpieces?

7 A Yes. I'm just...

8 Q Okay. So let me restate the question
9 then. All the squeeze embodiments still have
10 a -- strike that.

11 All the squeeze embodiments still have
12 what the '250 patent calls a bite-actuated
13 mouthpiece present.

14 A Yes, and I believe the converse is true as
15 well.

16 Q To your knowledge, the specification never
17 describes an embodiment where the user can squeeze
18 water out of the water bottle without the water
19 bottle having any mouthpiece at all?

20 MR. MESSICK: Object to the form.

21 A Well, I don't think there is an embodiment
22 that does not use a mouthpiece.

1 I mean, without a mouthpiece, you could
2 technically call the end of the fluid conduit a
3 mouthpiece depending on how it operates.

4 But I agree, it doesn't -- the
5 specification doesn't go into embodiments without
6 calling some part of it a mouthpiece.

7 Q It's your opinion you could call the end
8 of the conduit itself a mouthpiece depending on if
9 the user holds it close to the mouth, correct?

10 A Well --

11 (Off-the-record discussion with the court
12 reporter.)

13 MR. MESSICK: Do you want to restate your
14 question, Jason?

15 BY MR. MUDD:

16 Q Dr. Vallee, you testified that while there
17 are no such embodiments in the '250 patent without
18 a mouthpiece, you could call the end of the
19 conduit a mouthpiece under certain circumstances,
20 correct?

21 A Yes, that's correct.

22 Q And those circumstances in which the end

1 of the conduit could be a mouthpiece are dependent
2 on how close the end of the conduit is held to the
3 user's mouth, correct?

4 MR. MESSICK: Object to the form.

5 A Well, I think it depends on the
6 embodiment. I think we discussed before how it's
7 designed and how it's used, it can go near, at,
8 in, and there is no real definition for what
9 "near" is. It's just someone in the art that
10 looks at that product would say, yeah, it would be
11 near.

12 Q (Indiscernible crosstalk.)

13 A Evidently -- I did it again. So sorry.

14 What I was going to say was, someone who
15 has your dexterity who could do it arm's length,
16 they might consider that near enough, if you can
17 get it in. You know, it all depends on -- on what
18 the application -- what the specific product is.

19 Q Kind of like when you see the professional
20 sports player celebrating a championship and
21 holding a bottle of champagne up above their head
22 to drink from, you could consider the opening of

1 the bottle to be a mouthpiece, depending on how
2 close they hold it to their mouth, correct?

3 A They all get wet bottle. Again a
4 champagne bottle, you know, is not designed -- the
5 squeeze embodiment -- for example, the water
6 bottles I've seen where you squeeze give you a
7 nice, straight stream for the most part, which you
8 might even actually be able to aim at your mouth.

9 I don't think you can aim champagne. I
10 think they have no desire to aim the champagne, to
11 be honest with you.

12 Q In the squeeze embodiments, the
13 description we read, it doesn't actually say that
14 in those embodiments that the fluid can be
15 dispensed without the user placing their mouth on
16 the bite valve and biting, isn't that right?

17 MR. MESSICK: Object to the form.

18 A I think it's implied in column 9, that
19 you're using the reduction in volume to dispense
20 the fluid.

21 Q I guess it's possible that it could be
22 designed such that the user also has to bite it at

1 the same time they are squeezing?

2 MR. MESSICK: Object to the form.

3 A Why would they design it to make you have
4 to do both?

5 I read the specification, it's you either
6 bite it to open the slit or you squeeze it to open
7 the slit.

8 Q If I'm holding the bottle vertically
9 upright, and I'm biting on it, no fluid is going
10 to come in unless I squeeze. Right?

11 A So then why would you bite on it? I don't
12 understand.

13 It's designed to work -- you can do either
14 way. Right. You could squeeze it or you
15 could -- all I did was, how do you open the slit?
16 You either bite it or you can squeeze it.

17 Q But the '250 patent never describes that
18 the slit can be open solely by squeezing and
19 without no bite, correct?

20 MR. MESSICK: Object to the form.

21 A When I look at the bottom of column 9:
22 Intentional reduction in the internal volume of

1 the fluid may may urge drink fluid through the
2 conduit and expel it.

3 So, as I read that, it certainly says that
4 you don't have to bite it because you can squeeze
5 it.

6 Q And equally possible reading that you you
7 do bite at the same time you squeeze, correct?

8 A I don't know why you would, but I suppose
9 you could.

10 Q Why would you still have the bite-actuated
11 mouthpiece, and you squeeze embodiments, if it's
12 not intended to be bitten?

13 A Well, again, I think -- sorry, did I -- I
14 did it.

15 MR. MESSICK: Object to the form.

16 A Again, I think as I read the specification
17 they call bite-actuated first, because you can
18 open that slit by biting.

19 Then they say you can take that
20 mouthpiece. They could have said, okay, now you
21 can have a squeeze activated where you squeeze the
22 thing.

1 I just think that's started discussing
2 bite first, and they just continued on. They
3 didn't want to change the name.

4 I don't know why you would do both. I
5 mean, the less teeth you have on the mouthpiece,
6 the less wear you're going to get.

7 I've never seen -- I have never seen
8 anyone use a squeeze-activated (as said) water
9 bottle and bite it on.

10 I think that's the beauty, as I think
11 about it. You don't have to your teeth on it.
12 You can just squeeze, get it. And you don't have
13 to get it dirty.

14 Right. So the bite-actuated -- you have
15 to bite, it you got put it in your mouth to do the
16 biting. Right?

17 So now, if you are going to share water
18 bottles, which you should never do, but if you are
19 going to share water bottles, you wouldn't use a
20 bite-actuated mouthpiece by biting it or
21 compressing it with your lips.

22 You would use the squeeze function.

1 That's a different application. It's just that
2 you can do both with one.

3 What are we going to call that one design?
4 We'll call it bite actuated.

5 But again, they could have called it
6 squeeze actuated and continue the discussion that
7 way.

8 So squeeze actuated, you wouldn't want
9 to -- my opinion, you would not want to bite that
10 thing. There would be no motivation for you to do
11 that. The whole reason you squeeze, generally,
12 so you don't have to make contact with your mouth.

13 Q Squeeze-actuated bottle wouldn't require
14 you to have a mouthpiece, correct?

15 A Well, this wouldn't require you to make
16 contact with your teeth or your lips, and transmit
17 those germs, for example.

18 Certainly, a squeeze activated certainly
19 has a mouthpiece.

20 Q So, is it your opinion that a
21 bite-actuated mouthpiece is only useful when the
22 user raises the bottom of the bottle up to tilt it

1 so the water can flow into the mouth via gravity?

2 A Certainly use in that way. I mean, I
3 think you could also bite on the mouthpiece and
4 suck on it to draw liquid in too, so it doesn't
5 have to be that way.

6 All you're doing is taking the structure
7 and either pressurizing it from the outside with
8 your teeth by biting it, or pressurizing it from
9 the inside through squeezing to open the slit.

10 Q So, it's your opinion that a bite-actuated
11 mouthpiece serves no purpose on a squeeze bottle;
12 is that correct?

13 A Well, if your intent is to, you know, use
14 it without making contact with the mouth to spread
15 germs, for example, you wouldn't need the bite
16 feature of that mouthpiece. You would use the
17 squeeze.

18 But if that's not your intent, and you're
19 driving, for example, and you don't want to
20 squeeze it because you hit a bump, and who knows
21 where it's going to go.

22 It's like those -- the champions who have

1 the champagne bottle, they're covered in the
2 stuff.

3 It depends on what your use is.

4 So a car with a bite actuated might be
5 more appropriate, you know, you have to have it in
6 contact with your teeth so when the fluid is
7 dispensed, it won't spill on you.

8 Whereas, if you are a football player,
9 you're on the sidelines. We see it all the time.
10 You know, those assistants, they take the
11 squeeze-actuated bottles and they squeeze it into
12 the player's mouth, and they can use the same
13 bottle for different players.

14 Q So, you might still have a bite-actuated
15 mouthpiece on a squeeze bottle to help prevent
16 spills, correct?

17 A Really, the same thing.

18 Was there an objection I talked over
19 again?

20 MR. MESSICK: There was.

21 Q Let me ask that again.

22 So you might still have a bite-actuated

1 mouthpiece on a squeeze bottle to help prevent
2 spills?

3 MR. MESSICK: Object to the form.

4 A Yeah. I mean, I'm using bite actuated and
5 squeeze actuated as the same structure.

6 So you could put that mouth -- let's just
7 call it the slit mouthpiece. You can have a
8 slitted mouthpiece used for a squeeze bottle, or
9 you could have a slitted mouthpiece used on a
10 bottle you cannot squeeze.

11 You know, you can -- if you can squeeze
12 the bottle you can use it interchangeably.

13 Q Could you turn to paragraph 47 of your
14 second declaration?

15 A I'm there.

16 Q I want to go to the top of page 46, the
17 first full sentence.

18 A Got it.

19 Q You state: The specification -- referring
20 to the specification of the '250 patent -- makes
21 clear that the mouthpiece is not limited to
22 services contacted by the mouth. It expressly

1 discloses internal components that do not contact
2 the users mouth, such as an internal chamber 110
3 of the mouthpiece.

4 Do you see that?

5 A I do.

6 Q So, the only point you're making here is
7 that the entirety, or all of a component need not
8 be able to contact the user's mouth for it to
9 still be potentially a mouthpiece, correct?

10 A I think what I'm saying here is that the
11 mouthpiece itself doesn't have to have every part
12 of it contacted by the mouth. I think that's what
13 I'm saying, which I believe is what your question
14 was.

15 Q Yes. That's correct.

16 A Yeah. I'm sorry. This is 936. I think
17 that refers to figure 17 through 20, if I'm not
18 mistaken. Let's double check that.

19 Yeah, all those embodiments have the slit.
20 So all I'm saying there is those other surfaces,
21 in addition to the surfaces on the outside, would
22 contact the mouth. It's not limited to those.

1 In other words, all the surfaces are
2 involved with the mouthpiece.

3 Q You're saying here that there are internal
4 surfaces inside the mouthpiece that the user's
5 mouth would not contact, correct?

6 MR. MESSICK: Object --

7 A -- can be.

8 Q Sorry, I missed your answer there.

9 A That's because I once again interrupted
10 Mr. Messick with his objection.

11 Yes, what I'm saying is the mouthpiece
12 itself has surfaces which do not contact the
13 mouth.

14 Q And you understand CamelBak and
15 Mr. Jobin's construction to require that all
16 surfaces, or the entirety of a component, has to
17 come into contact with the users's mouth while
18 drinking for it to be considered a mouthpiece,
19 right?

20 A Well, let's go back to where I discuss
21 Mr. Jobin. Bear with me for just a second.

22 So I cite in paragraph, I guess it's 45,

1 the top of page 45 -- well, that's when we talk
2 about Mr. Jobin's deposition testimony where a
3 POSITA understand mouthpiece as piece that is
4 inserted into mouth.

5 So, no, I didn't think he excludes that.
6 I don't think he discusses internal surfaces
7 actually in his deposition.

8 Q CamelBak and Mr. Jobin are not requiring
9 the internal surfaces to be able to contact the
10 user's mouth for it to be considered a mouthpiece,
11 correct?

12 A Yeah. I was -- I was simply stating that,
13 you know, there are porous surfaces of the
14 mouthpiece that don't contact the mouth like they
15 they would be on the external surface.

16 Q Your understanding of CamelBak and
17 Mr. Jobin's construction is that some portion of
18 the mouthpiece needs to contact the mouth,
19 correct?

20 A Well, some portion can contact the mouth.
21 The squeeze embodiment doesn't have to. It just
22 has to be -- you can be in the mouth without

1 contacting the mouth.

2 Q You talked about the dispensing face of a
3 mouthpiece so, for example, the face that has the
4 slit in the bite-actuated mouthpiece as we look
5 at; are you familiar with that?

6 A Yeah, I am.

7 Q So you don't understand CamelBak and
8 Mr. Jobin's construction to be suggesting that
9 that dispensing face is somehow not part of a
10 mouthpiece because when the user is drinking,
11 their lips might be contacting the walls, but not
12 the dispensing face, right?

13 MR. MESSICK: Object to the form.

14 A Well, I think I discuss that when I'm
15 talking about -- I'll call it the Gardner
16 embodiment that was incorporated through that,
17 where it describes the mouthpiece as, you know,
18 that face being part of the mouthpiece. So I
19 don't recall Mr. Jobin's -- I don't think they
20 ever stated that implicitly in the specification,
21 but because they incorporated Gardner, it said in
22 there, in that patent.

1 Q Okay. If you can go to paragraph 46.
2 Paragraph 46 you discuss the Board's institution
3 decision and the Board's construction of
4 mouthpiece.

5 Do you see that?

6 A I do.

7 Q And you state in paragraph 46: This
8 understanding is further consistent with the
9 Court's construction of mouthpiece in the
10 institution decision as part of an instrument that
11 goes in the mouth or to which the mouth is
12 applied.

13 Do you see that?

14 A I see.

15 Q You say: A POSITA would not interpret
16 that language to require direct mouth contact with
17 the component.

18 Do you see that?

19 A I do.

20 Q So, in your view, the Board's construction
21 does not require that a mouthpiece be able to come
22 into contact with the mouth?

1 A I think what I'm saying is the Board says
2 it's a part that goes in the mouth which your
3 mouth is applied. Right.

4 So, it doesn't have to be direct mouth
5 contact. If it goes in, you open your mouth, you
6 put it in, and you don't close your mouth. It's
7 in the mouth, but it's not in contact.

8 Q Okay. Do you have the Board's institution
9 decision hand? I can -- I'll put it in the chat
10 as well. It's paper 14.

11 A I do. Bear with me just a second here.
12 These binders. Yes, I have that.

13 (Previously marked for identification
14 Exhibit 14.)

15 Q Please turn to 37 --

16 A 37.

17 Q -- of the institution decision.

18 A Okay, I am there.

19 Q It says: Based on our claim construction
20 of mouthpiece as a part of an instrument that goes
21 in the mouth, or to which the mouth is applied,
22 and on this preliminary record we preliminarily

1 determine that petitioner does not adequately
2 explain how the end portion of item 2 -- its in
3 Rabarits -- functions as a mouthpiece where it
4 does not contact the mouth.

5 Do you see that?

6 A I do.

7 Q When you read that statement in context,
8 does that change your view that the Board
9 understood its construction to require contact
10 with the mouth?

11 A Well, I think that's the whole reason I
12 wrote it in my second declaration, to clarify what
13 I meant.

14 At this point the Board said they didn't
15 understand, so I wrote things like paragraph 46,
16 and the whole section on mouthpieces, to clarify
17 why it can function as a mouthpiece if it doesn't
18 contact the mouth. I'm trying to explain to the
19 Board with more clarity what my position was.

20 Q Is it your view that the Board determined
21 that something that is simply stuck in the mouth
22 without making contact with the mouth can still be

1 considered a mouthpiece?

2 A I think the operative word here is
3 "preliminarily" that may have been their position.
4 Right.

5 Because they said I didn't explain how the
6 end portion of item 2 functions as a mouthpiece
7 when it doesn't contact it. So I think that was
8 their position when they wrote this, and it was
9 preliminary when they said they didn't understand.

10 MR. MESSICK: Objection.

11 Q If you can go to paragraph 48 of your
12 declaration.

13 (Indiscernible crosstalk.)

14 A Got it. Paragraph 48 or page?

15 Q Paragraph.

16 A Got it. In paragraph 48 you refer to a
17 Gardner reference that you say is incorporated by
18 reference in the '250 patent's disclosure; is that
19 right.

20 A Correct, that's what I discussed a little
21 earlier.

22 Q Okay. I'll drop into the chat Exhibit

1 1014, which I'll represent is what you cite to as
2 being Gardner.

3 (Previously marked for identification
4 Exhibit 1014.)

5 Q You reference a dispensing face 32 of
6 Gardner?

7 A Yeah, I do.

8 Q And you highlight that red, correct?

9 A Yeah. My hard copy, it's pink, so I think
10 that's red.

11 Q Fair enough. You state this is the first
12 full sentence on page 47, in Gardner -- are you
13 there?

14 A Got it.

15 Q Yes. In Gardner, the mouthpiece
16 encompasses the terminal outlet-forming structure
17 (the dispensing face) that defines where fluid
18 exits. A POSITA reading this would understand
19 mouthpiece to include the dispensing face that
20 forms the terminal delivery structure, not just
21 the external nondispensing face region where the
22 mouth or lips happen to rest.

1 Do you see that?

2 A I do.

3 Q In Gardner, it's possible for that
4 dispensing face 32 to come into contact with the
5 user's mouth, right?

6 A Which portion? Did you say dispensing
7 face? I'm sorry.

8 Q Yes.

9 A Yeah, dispensing face surface 32 can come
10 into contact with the user's mouth. You can press
11 it against the lips, for example.

12 Q You could just touch the inside of the
13 mouth or inside of the lips.

14 A Yeah, you know, can come in contact, sure.

15 Q And the dispensing face 32 is not covered
16 by any external rigid material preventing the
17 user's mouth from contacting it, right?

18 A That's correct.

19 Q And even if the user's mouth is not placed
20 on the dispensing face while drinking, their mouth
21 is still placed on other parts of Gardner's
22 mouthpiece, correct?

1 A Well, it doesn't have to be. It can be.
2 If you just squeeze it, then there is no need for
3 it.

4 Q For example, the user's mouth can contact
5 other portions of the mouthpiece such as the head
6 30... correct?

7 A It can, but it doesn't have to.

8 Q And the user can bite down on the head 30
9 to open the bite valve in the dispensing face 32
10 in Gardner, correct?

11 A I'll just take a quick a check. I believe
12 so.

13 Q If you want, you can go to column 3, line
14 49 of Gardner.

15 A Oh, great. Yep, that's correct.

16 Q And Gardner describes a bag-like fluid
17 reservoir that is carried on the back or
18 waist-mounted pack, correct?

19 A That is correct.

20 Q And if you go to column 1, line 29, I'm
21 sorry, 28 -- column 1, line 27, it references a
22 long, flexible hose.

1 You see that?

2 A I do.

3 Q And at line 29, column 1, it says: The
4 hose is long enough to allow the mouthpiece to be
5 carried in the user's mouth to enable the user to
6 draw water from the reservoir at will.

7 Do you see that?

8 A I do.

9 Q So, when Gardner describes a mouthpiece,
10 it's referring to a component that can be carried
11 in the user's mouth, right?

12 MR. MESSICK: Object to the form.

13 A It says the mouthpiece can. It doesn't
14 have to be, but it can be carried in the user's
15 mouth.

16 Q The point in this back or waist-pack
17 design with a hose is to allow the user to drink
18 without having to use their hands, correct?

19 MR. MESSICK: Object to the form.

20 A Well, that's one of the reasons, but if
21 you just bear with me for a second so I can
22 review. It's been a while since I've seen this

1 one.

2 I believe you can also squeeze the tank to
3 dispense the fluid as well.

4 Q On your back.

5 A Bear with me for one second, please.

6 Okay, it has a flexible bladder.

7 Yeah, if it's happens to be on your back,
8 that's hard to do. But I don't think it's
9 restricted to back carrying.

10 But anyway, my point is that this design,
11 which he calls bite actuated, can also function if
12 you were to squeeze, for example, the bladder, for
13 some reason you carry it under your arm and you
14 wanted to squeeze it that way.

15 Q If you can go to column 3, line 25.

16 A Gardner?

17 Q Yes.

18 A Okay.

19 Q Hose 22 is of sufficient length to extend
20 from bladder 12 in its stowed position, typically
21 on the user's back, to the user's mouth.

22 Do you see that?

1 A I do.

2 Q And then it says in the next sentence:
3 The end 24 of hose 22 is connected to a mouthpiece
4 26, which is sized to be received within the
5 user's mouth to deliver fluid to the user.

6 Do you see that?

7 A I do.

8 Q So Gardner describes a mouthpiece that is
9 designed to be carried in the user's mouth,
10 correct?

11 A Well, yes, but it says "it can be."
12 Right.

13 As I look, as I refresh my memory here,
14 you could use this, since it has a flexible
15 bladder, by carrying it under your arm, and you
16 could hold it out and you could squeeze it and get
17 the fluid, pass it to the next person on your
18 camping trip, whatever, your hike and do the same
19 thing.

20 (Indiscernible crosstalk.)

21 A I did it again.

22 So this will function as a

1 squeeze-actuated mouthpiece as well.

2 Q So when the '250 patent incorporates by
3 reference Gardner, and Gardner's discussion of
4 mouthpiece is carried in the mouth, that suggests
5 that the '250 patent intends for mouthpieces to be
6 in the user's mouth, correct?

7 A Well, I think when they incorporated
8 Gardner, the intent of the '250 was also to
9 clarify Gardner by saying: And if you have a
10 flexible bottle you can use Gardner's idea and
11 squeeze it.

12 I mean, as I read "flexible bladder," I
13 had that idea already in my head, that, you know,
14 this could probably work if it's flexible by
15 squeezing it.

16 So the author of the '250 patent went a
17 step further and actually had a discussion about
18 how we can take Gardner and use it as
19 squeeze-activated -- actuated mouthpiece.

20 Q Let's go to -- take a look at '250's
21 incorporation of Gardner.

22 If you can go to column 9, line 40, of the

1 '250 patent.

2 A Okay.

3 A I'm there.

4 Q You says: Additional illustrative
5 examples of suitable bite-actuated mouthpieces,
6 including external and internal constructions of
7 which that may be selectively utilized, in whole
8 or in part, with mouthpiece 72, according to the
9 present disclosure are disclosed in U.S. Patent
10 Numbers 6,070,767 and 6,032,831. The complete
11 disclosures of which are hereby incorporated by
12 reference for all purposes.

13 A I see it.

14 Q And so the '250 patent is intending to
15 incorporate suitable bite-actuated mouthpieces
16 from Gardner, correct?

17 A Well, it's the Gardner mouthpiece, which
18 he calls bite-actuated, which may actually be one
19 of the reasons why they start the discussion in
20 the specification -- in the specification with
21 "bite actuated."

22 But, again, bite actuated I think is

1 automatically also squeeze actuated.

2 Q And as we saw in Gardner, Gardner's
3 bite-actuated mouthpiece are designed to be
4 carried in the mouth and to not require any
5 squeezing by the user, correct?

6 A I look at this -- I apologize, I haven't
7 read Gardner in a while, but there has got to be
8 some kind of pressure in that bladder to get the
9 fluid through to the user.

10 Q Couldn't the user cut it like a straw?

11 A Yeah. So you can get that -- that
12 negative pressure to open it by either sucking on
13 it or squeezing the bladder, so it's likely you
14 could suck on it and not even bite actuate it.

15 By anyway, back to your original question.
16 We are calling bite actuated the Gardner
17 reference, even though, you know, you really have
18 to bite on it to get it to work. So I'm going to
19 apologize right now and ask you to repeat your
20 original question.

21 Q So regardless of whether the user bites on
22 the mouthpiece in Gardner, it's nonetheless a

1 mouthpiece that's intended to be carried in the
2 user's mouth such that there is contact with the
3 mouth, correct?

4 A It is designed to be carried in the user's
5 mouth, although it will function if it's not.

6 Q Can we turn to... if you can turn to
7 paragraph 52 please of your...

8 A Are we done with Gardner for now?

9 Q Yes, I think we are, for now. There might
10 still be some references to Gardner, so maybe keep
11 it handy, just in case.

12 A Okay. I'll make room. We're back in my
13 declaration, I believe.

14 Q Yes, your second declaration, paragraph
15 52. We are talking about -- we are going to talk
16 about Ribarits.

17 A I'm there.

18 Q The part of Ribarits that you contend
19 constitutes the claimed mouthpiece is the portion
20 that's highlighted green, correct?

21 A Correct.

22 Q And I think, I believe, you call that

1 distal end of the tubular element 2; is that
2 correct?

3 A That's right.

4 Q Then 52, you say: In particular, Ribarits
5 explains that the tubular element 2 defines the
6 fluid conduit through the cap assembly, and that
7 the drinking spout 3 controls opening and closing
8 of that conduit by pivoting between positions that
9 open or crimp the tube.

10 And then in the next sentence, you say:
11 In that configuration, it is the open end of the
12 tubular element 2, located in the outlet region of
13 the drinking spout 3 that forms the dispensing
14 outlet of Ribarits, analogous to the dispensing
15 face described in Gardner as part of the
16 mouthpiece.

17 Do you see that?

18 A I do.

19 Q So you're contending that what you've
20 highlighted as the green mouthpiece in Ribarits is
21 analogous to the dispensing face of Gardner; is
22 that right?

1 MR. MESSICK: Object to form.

2 A I believe more specifically it's that
3 surface that's most distal. Just let me read it
4 again real quick.

5 Right, it's that face with the opening
6 that corresponds to Gardner's a distal face -- I'm
7 sorry, dispensing face.

8 Q So you contend the surface of the green
9 dispensing outlet has the opening is what you
10 contend is analogous to Gardner's dispensing face;
11 is that right?

12 A Correct. That's the dispensing outlet,
13 and that's the -- analogous to the face in
14 Gardner.

15 Q But in Gardner, the dispensing face is
16 part of a component that does, in fact, contact
17 the user's mouth, correct?

18 A Yeah, as does when I'm causing -- excuse
19 me, what I'm calling mouthpiece. That can contact
20 the user's mouth too.

21 I have a figure -- I think we just looked
22 at -- oh, yeah, it's on -- it's illustrated in

1 figure on page 52, where it contacts the user's
2 lips.

3 Q Okay. And we will get there in a moment.
4 But I believe that it's your opinion that at...
5 mouthpiece is a mouthpiece, regardless of whether
6 it can contact the user's mouth, correct?

7 A Let's see... yeah, that's part of the
8 mouthpiece, whether it contacts or not.

9 Q Okay.

10 A Because we spoke about embodiments where
11 you can just put it in your mouth and squeeze, for
12 example; so it does not have to, but it can.

13 Q And you might spray a short distance as
14 well, right, by squeezing it?

15 A You could squeeze it into your mouth
16 without contacting it.

17 Q Okay.

18 A You could do it from a large distance,
19 evidently.

20 Q So, it's your opinion the green portion is
21 a mouthpiece whether it can contact the mouth or
22 not, correct?

1 A Yeah, that is correct.

2 Q And it differs from Gardner's mouthpiece
3 in that in Gardner the user can place their lips
4 on the outer surface of the mouthpiece, in
5 Gardner, correct?

6 A True, but they could always -- IT could
7 also place their lips on that distal face with the
8 slit if they wanted to.

9 Q And in Ribarits, the user can't place
10 their lips on the outside of the tube that makes
11 up the green alleged mouthpiece, because the
12 drinking spout 3 surrounds it on the sides,
13 correct?

14 A Yes, they would -- they would -- the
15 contact would be on that distal face.

16 Q And the Board preliminarily determined
17 that an institution that Ribarits' green alleged
18 mouthpiece had not been shown to be a mouthpiece
19 because it wasn't shown that it contacts the
20 mouth, correct?

21 A If you could refer me to where that is, I
22 can pull that up real quick.

1 Q Yeah, it's page 37 of the institution
2 decision, paper 14.

3 A Page 37, okay. So, again, they
4 preliminarily determine they don't agree with
5 that, which is why I have it in my declaration, to
6 give it some clarification.

7 Q Right. So the preliminarily determine
8 that petitioner does not adequately explain how
9 the end portion of item 20 functions as a
10 mouthpiece where it does not contact the mouth.

11 I believe your response is twofold. One,
12 it doesn't have to contact the mouth to still be a
13 mouthpiece; and 2, you contend that it actually
14 can contact the mouth, correct?

15 A That's correct.

16 Q We have talked a lot about -- we talked a
17 lot about...

18 A That was the cat.

19 Q Oh, okay. I thought it was court
20 reporter.

21 A No. My daughter's cat snuck down here.
22 She likes to be deposed too.

1 Q I asked you earlier if there was anyone
2 else in the room with you.

3 A No, now just the cat. Now the cat is
4 gone. We are good. She wasn't even sworn in.
5 Sorry about that.

6 Q No worries.

7 A Actually, within the next ten minutes, or
8 so, a break would be --

9 Q Getting close.

10 MR. MUDD: Actually, this a good logical
11 stopping point for a break. I'm going to switch
12 to another line of questions, so why don't we.

13 THE WITNESS: Ten minutes.

14 (Off the record.)

15 BY MR. MUDD:

16 Q Welcome, back Dr. Vallee.

17 A Thank you.

18 Q Okay. When you put your lips on someone's
19 cheek to kiss them on the cheek, you wouldn't say
20 that the person's cheek enters your mouth, right?

21 MR. MESSICK: Object to the form.

22 A Okay. So, not kissing a water bottle, I'm

1 kissing a person on the cheek, I would say the
2 check contacts my mouth. It's on my mouth.

3 Q But it doesn't enter your mouth, correct:
4 (The court reporter asked for clarification.)

5 Q But it doesn't enter your mouth, correct?

6 A No, not normally.

7 Q And you wouldn't say that when you kiss
8 them on the cheek, you put the person's cheek in
9 your mouth, right?

10 A Isn't that the same question?

11 Q It's pretty similar, yeah. I think it's
12 probably the same. Same answer?

13 A Same answer.

14 Q And that's because just contacting the
15 surface of your lips with something is not the
16 same as putting that thing in your mouth, correct?

17 MR. MESSICK: Object to the form.

18 A It is in contact with your mouth.

19 Q And contacting the surface of your lips
20 with something is not putting that thing in
21 your...

22 A Again, it is contacting my mouth.

1 Q So it's simply contacting, but not in your
2 mouth, correct?

3 A Correct, it's contacting my mouth.

4 Q And that's because your mouth is the
5 opening between your lips and not just the surface
6 of your lips, correct?

7 MR. MESSICK: Object to the form.

8 A No, I think your lips are part of the
9 mouth. I mean, you take my lips away and the lips
10 are part of the mouth. It's like the doorway --
11 the entryway of the mouth.

12 Q So the lips are like the door to the mouth
13 but they are not the mouth itself, correct?

14 MR. MESSICK: Object to the form.

15 A Well, the door on the house is part of the
16 house, so the lips are the door to the mouth. You
17 can't close your mouth if you don't close your
18 lips.

19 Q When a person contacts the surface of
20 their lips to the distal face of the green alleged
21 mouthpiece in Ribarits, that green alleged
22 mouthpiece does not enter the user's mouth,

1 correct?

2 A It contacts --

3 (Indiscernible crosstalk.)

4 MR. MESSICK: Object to form.

5 A Form, okay.

6 MR. MESSICK: Go ahead.

7 A Yeah, it contacts the mouth, of course,
8 the inside of the mouth, if you put the spout in
9 the mouth, but on the lips it contacts the mouth.

10 Q Well, if surface of the lips pressed
11 against the face of the green portion, the green
12 portion doesn't actually enter the user's mouth,
13 correct?

14 A That case it would just be in contact with
15 the mouth.

16 Q So, just in contact with the mouth and not
17 entering the mouth, correct?

18 A Correct, you can enter the mouth if
19 you -- like I said -- put the spout in the mouth
20 and the mouthpiece is in the mouth.

21 Q And when you insert the drink spout 3 into
22 your mouth, the green portion is no longer in

1 contact with the mouth, correct?

2 MR. MESSICK: Object to the form.

3 A It depends on how far you push it into
4 your mouth.

5 We discussed early in the day how, you
6 know, one of the embodiments, if you push it all
7 the way in it can contact your cheek, or something
8 like that, but it's definitely in your mouth.

9 If the spout is in your mouth, then the
10 mouthpiece is in your mouth.

11 Q It's your opinion that it's possible in
12 Ribarits for the user to put the drink spout 3
13 into their mouth, and for the green portion to
14 still contact some part of the mouth inside of it?

15 A Yeah, it can.

16 Q Like your uvula, if you shoved it all the
17 way to the back of your throat?

18 A Well, we discussed it earlier, it could
19 hit your cheek, for example, your tongue. No, it
20 could.

21 Q Would say that green portion is designed
22 to contact the inside of your mouth?

1 A Well, it's not designed so it cannot, so
2 it's designed so it -- I mean, the way it's
3 designed allows it to contact the inside of your
4 mouth. It can contact the inside. It can contact
5 your lips. And it can just be inside if you put
6 the spout in your mouth.

7 Q Yeah, I didn't ask the negative. I asked
8 the affirmative.

9 So is it designed to perform the function
10 of contacting the user's mouth affirmatively, the
11 green portion?

12 A Yeah, I --

13 MR. MESSICK: Object to form.

14 A I think that's what I was trying to say,
15 that the way it's designed, it's designed so that
16 it can contact the inside of your mouth. There is
17 nothing from preventing that from happening.

18 Q If you can go to paragraph 54 of your
19 second declaration.

20 A Okay. I am there.

21 Q And you state: Even if CamelBak's
22 narrower view of mouthpiece requiring the user's

1 lips to contact the mouthpiece during use were
2 adopted, a POSITA would still conclude that
3 Ribarits meets the mouthpiece limitation.

4 In actual use, the user does not need to
5 place their mouth entirely around Ribarits'
6 pivotal mount. The user can and would place their
7 lips on the dispensing face of the mouthpiece,
8 i.e., on the rim or shoulder surrounding the
9 opening where fluid exits from the dispensing
10 outlet while withdrawing liquid from the bottle,
11 for example, e.g., by pouring or sucking. And
12 this is illustrated in the following figure I
13 prepared.

14 Do you see that?

15 A I do.

16 Q And you prepared that demonstrative figure
17 on -- in paragraph 54 of your declaration?

18 A Well, I instructed a graphic's person at
19 at the firm what I wanted to see.

20 Q Okay. In that figure you had prepared,
21 the user's mouth is closed, correct?

22 A It's hard to say it's closed.

1 You know, I'm trying to think back now
2 exactly where that figure came from, but it
3 doesn't matter. I mean -- I mean, it's, you know,
4 it's -- it's a sketch of a mouth. I think it's
5 assumed that, you know, use of the mouth will have
6 be open, so you can -- to some extent, you can
7 either suck it through or pour it in. It wouldn't
8 make sense any -- otherwise.

9 Q You anticipated some of my line of
10 questions here, Dr. Vallee.

11 A I'm sorry.

12 Q In the figure, the user's lips are
13 together, right?

14 MR. MESSICK: Object to the form.

15 A Again, it's a sketch. You really can't
16 tell if it's open or not. I mean, if it were
17 cracked open a little bit with the line thickness
18 that was used, you would never be able to show
19 that it wasn't.

20 No, I think you have to assume that if
21 someone's put it up against their mouth to drink,
22 their mouth has to be open to some extent so the

1 fluid can come through.

2 Q Okay. Great. You short-circuited some of
3 my questions.

4 So, in order to drink the fluid, the
5 user's mouth has to be open to some extent,
6 correct?

7 A Yes, to some extent. The lips have to be
8 parted to some extent to get the fluid in.

9 Q We are not, like, absorbing liquid through
10 the tissue via osmosis, or something like that,
11 right?

12 A That wasn't my intent with the figure, no.

13 Q Okay. And, similarly, I think you would
14 agree, that a user couldn't simply kiss the face
15 of the tube with closed lips to drink from it,
16 right?

17 A If you kiss the face of the tube and, you
18 know, sucked on the end of it, your lips would be
19 in contact with the mouthpiece that's green, while
20 still having a pathway for the fluid to flow. So,
21 yeah, I mean, yeah, you could suck it through that
22 way. I guess that would be equivalent to a kiss.

1 Right?

2 Q So you missed the closed-lip part. So a
3 user can't simply kiss the face of a tube with
4 closed lips to drink from it, right?

5 A If they did that while they sucked in, the
6 lips would probably separate. So either way there
7 has to be some separation in the lips to get the
8 fluid through.

9 Q Okay. Great. So you would agree the
10 claimed mouthpiece does have to allow the user to
11 actually drink from the bottle by allowing fluid
12 to flow, right?

13 A Yeah, the fluid has to flow out and be
14 dispensed to the user.

15 Q So you would agree the mouthpiece has to
16 allow the user to place their mouth on it while
17 their mouth is open, correct?

18 A Well, if they're actually going to choose
19 to place their mouth on it, right, there will have
20 to be some gap between the lips so they can get it
21 through. But if you look at that figure, I mean
22 there is certainly adequate space to keep your

1 lips on the green mouthpiece while separating just
2 a little bit to get the fluid through.

3 And again, I think sucking would be the
4 clearest example where, you know, your lips would
5 be closed. And as you draw in, they'd separate
6 and let the fluid while still keeping your lips in
7 contact with the mouthpiece.

8 Q So we talked about the possibility where
9 the user could put the drink spout 3 into their
10 mouth and drink without contacting their mouth on
11 the green portion, right? That's a possibility?

12 A Right. It would be in your mouth but
13 there is no contact.

14 Q And it's also a possibility that the user
15 could drink from it, in your opinion, in the
16 manner shown here in paragraph 54 by not placing
17 the drink spout or alleged mouthpiece in their
18 mouth, and instead just contacting the lips, which
19 you say is part of the mouth, correct?

20 A Correct.

21 Q So that's also a possibility?

22 A Yes.

1 Q Then I believe it's also -- I don't think
2 this is in your declaration, but you said today
3 that it's your opinion you could also have both
4 the alleged mouthpiece in your mouth and have
5 contact with your mouth -- I guess a third
6 scenario -- in the instance where that green
7 portion somehow is shoved against some part of
8 your -- inside of your mouth; is that right?

9 A Yeah, it was --

10 MR. MESSICK: Object to the form.

11 A -- I responded to your question. And I
12 believe you had brought it up earlier about some
13 embodiment of some mouthpiece that can actually
14 touch your check, or something. That's what made
15 me think of that actually.

16 MR. MESSICK: Let the record reflect that
17 I objected to Mr. Mudd's question.

18 Q So, is every surface beyond your lips and
19 inside your mouth considered part of the mouth, in
20 your opinion?

21 A Well, let's see, the -- I think the mouth
22 is what a POSITA would assume the mouth is. It's

1 the cavity in your mouth. There is a surface of
2 your mouth, which is the inside. There were the
3 lips, which close the mouth, so they're all parts
4 of the mouth.

5 Q If you --

6 A My fault, yet again, I'm sorry.

7 Q With the uvula in the back of your throat,
8 would that be part of your mouth?

9 A I think the best -- what I was going to
10 say was, after my long pause -- which I apologize
11 for again -- if you pour water into your mouth,
12 whatever gets wet is part of your mouth, so the
13 uvula would be included. Right? And the lips, of
14 course, are included, because that closes the
15 mouth. Right?

16 If you don't have lips, that makes it
17 awful hard to drink. Things start splashing out.
18 That wouldn't be good.

19 So, yeah, I think anything that gets wet
20 in your mouth you can consider part of your mouth,
21 including the lips.

22 Q So the beginning of your esophagus, is

1 that a part of your mouth too?

2 A I think anything that gets wet. I'm not
3 exactly sure if your esophagus gets wet if you
4 don't swallow. Now we are entering an area of the
5 anatomy that I'm not perfectly comfortable with.

6 Q So it has to be a part that gets wet
7 without swallowing?

8 A I think the cavity and the surface,
9 including your lips of the inside of the mouth, is
10 what one in the art would consider your mouth as
11 far as drinking appliances goes anyway. A surgeon
12 may think otherwise but...

13 Q And the teeth, they are a part of the
14 mouth too?

15 A Well, I mean, they are in your mouth.
16 Your tongue is in your mouth. I think if it gets
17 wet -- I mean, in your mouth, on your mouth. I
18 think your teeth are in your mouth.

19 Are they part of your mouth.

20 I think, like, the inside surface is
21 probably part of your mouth.

22 Q Is the tongue part of your mouth?

1 A Anything on the inside of your mouth.

2 Your tongue is in your mouth. I'm not sure.

3 Teeth and tongue, these are things I've
4 never really considered seriously before whether
5 they are part of your mouth but, you know, as far
6 as this discussion on whether the mouthpiece is on
7 your mouth or in your mouth or contacting your
8 mouth --

9 Q Yeah.

10 A You know, I think it's touching your lips,
11 or even touching something on the inside of your
12 mouth that's in your mouth.

13 I mean, teeth can be in your mouth and the
14 mouthpiece could be touching your teeth, which is
15 in your mouth, so technically it's all in your
16 mouth.

17 Q Okay. Unfortunately, there not an exhibit
18 in the record currently, but I have seen
19 dictionary definitions that refer to the mouth as
20 being the opening. Would you disagree that a
21 person's mouth is the opening?

22 MR. MESSICK: -- to the form.

1 A Again, I hazard a guess that I could find
2 a dictionary definition of mouth that may even
3 include teeth. I don't know. But a mouth is an
4 opening. I don't think that's the only definition
5 of mouth. I think definition of mouth that
6 includes the lips to close the mouth -- again,
7 we're trying to focus on drinking containers.
8 That's a definition. There are probably dozens of
9 definitions.

10 Q And this figure that you've imagined in
11 paragraph 54, Ribarits doesn't itself ever
12 actually expressly describe or depict in a figure
13 a user contacting any part of their mouth to the
14 surface of the green highlighted portion of the
15 tube, right?

16 MR. MESSICK: Object to the form.

17 A I could go through and look at Ribarits
18 again, but it wouldn't surprise me if he didn't,
19 only because, you know, he was trying to describe
20 an entire invention. You know, I thought he had
21 bigger fish to fry.

22 But I don't recall him discussing that. I

1 don't think he had to. I mean, his invention was
2 really with the valve and, you know, how you shut
3 the spout spout and it shuts the valve off and it
4 stops the flow. His invention was aimed at that.

5 I just looked at his patent and said, oh,
6 well, based on his invention, you can use his
7 invention this way, this way, this way.

8 Q He doesn't care whether the green portion
9 contacts the mouth right?

10 MR. MESSICK: Object to form.

11 A Well, I'm not exactly sure what he cared
12 about at the time, but his was more with, you
13 know, how that spout opens and closes and how one
14 would use it. I mean, I could go back to the
15 patent and take another look.

16 Q The drink spout 3 is the part that he
17 intends for the user's mouth to contact, right?

18 MR. MESSICK: Object to the form.

19 A Let's take a look, if you bear with me for
20 a second. This is the heavy one. Let's see.

21 Q I've put in the chat as well Exhibit 1006,
22 is Ribarits.

1 (Previously marked for identification
2 Exhibit 1006.)

3 MR. MESSICK: It should be in the first
4 binder.

5 THE WITNESS: It's with my declaration,
6 which is a shame because I just lifted the
7 heaviest binder for nothing.

8 MR. MESSICK: Trying to get you some
9 exercise.

10 A Yes. I'm sorry, I should have put a tab
11 in here. I found it. Just a moment, please.

12 (Witness reviewing document.)

13 A Sorry, I started looking at the wrong
14 exhibit. Okay.

15 Ribarits is mostly concerned with
16 one-handed operation, and being able to seal it so
17 the fluid does not leak, and... so he does not go
18 into the detail on exactly how one would apply
19 their mouth to.

20 He's mostly concerned with one-handed
21 operation of the spout and being able to seal the
22 bottle so if you lie it down, it doesn't spill.

1 So, to answer your question, if I recall
2 what it was, no, he is not concerned with all the
3 details on how it would approach the mouth, be in
4 the mouth, or any of that kind of stuff.

5 Q Thank you, Dr. Vallee.

6 Okay, I think we can set Ribarits' aside.

7 Let's go back to paragraph 8 in your
8 declaration, Exhibit 1015.

9 A Got it.

10 Q We looked at that earlier. But you state
11 in this first sentence in paragraph 8: Pivotal
12 movement refers broadly to motion that occurs by
13 virtue of a hinge or pivot joint, and is not
14 limited to textbook notion of a perfectly rigid
15 body undergoing pure rotation about a single fixed
16 axis with every point tracing a circle of constant
17 radius.

18 (The court reporter asked for clarification.)

19 Q Pivotal movement refers broadly to motion
20 that occurs by virtue of a hinge or pivot joint
21 and is not limited to the textbook notion of a
22 perfectly rigid body undergoing pure rotation

1 about a single fixed axis with every point tracing
2 a circle of constant radius.

3 Do you see that, Dr. Vallee?

4 A I do.

5 Q And that's your understanding of "pivotal
6 movement" as it's used in the '250 patent,
7 correct?

8 A Well, I think I'm saying here what
9 it's -- it's not limited to the dictionary
10 definition.

11 Q But you're saying here your opinion of
12 what "pivotal movement" means, right?

13 A "Pivotal movement" is more broad than the
14 textbook definition of a pure fixed rotation.

15 Q And, in your opinion, is the motion of an
16 object relative to a hinge or pivot joints pivotal
17 movement, even if it is not pure rotational
18 motion?

19 A I'm not sure I heard that right. I think
20 maybe you kind of cut it out just for a second.
21 Can you repeat that --

22 Q Sorry. Yeah.

1 A -- one more time.

2 Q Is it correct that in your opinion
3 movement of an object that occurs relative to a
4 hinge or pivot joint constitutes pivotal movement,
5 even if it is not pure rotational motion?

6 A That is correct, and I think I cited the
7 example of a linkage, for example, where one piece
8 of the linkage won't be -- will be pivotal about
9 an axis, yet not in pure rotation about it.

10 Q These linkages you talk about, none of the
11 embodiments in the '250 patent depict such a
12 linkage that the mouthpiece is connected to,
13 correct?

14 MR. MESSICK: Object to the form.

15 A There is no embodiment with a linkage,
16 although -- I mean, the claims certainly don't
17 preclude it.

18 Q And then you state in paragraph 9 that
19 your understanding is reflected in the teachings
20 of prior art mechanisms such as Rosnak, which is
21 Exhibit 1016.

22 A I see that.

1 Q And you say: Rosnak discloses pivotal
2 movement occurring about multiple axes within a
3 single assembly; is that right?

4 A That's right.

5 Q And could you pull up Exhibit 1016,
6 please. I'll drop it into the chat, just in case.

7 A Oh, that's in the big binder.

8 Q Oh, no.

9 A I'll manage.

10 Q I thought the big binder was the first
11 declaration stuff.

12 A Okay, Rosnak. This will be quick. I
13 tabbed it. Got it.

14 Q Okay. So Rosnak is directed to a paint
15 applicator, correct?

16 A Correct.

17 Q And Rosnak's paint applicator has a handle
18 22 that engages in pivotal movement between first
19 and second angular positions; is that right?

20 A That is correct.

21 Q And those first and second angular
22 positions are in a plane substantially parallel to

1 the surface being painted, correct?

2 A That's true.

3 Q And the handle's pivotal movement is about
4 a first axis y-y; is that right?

5 A That's right.

6 Q And then Rosnak has an adapter 23 that's
7 mounted on the handle 22, right?

8 A Correct.

9 Q And Rosnak's adapter 23 engages in pivotal
10 movement between extended and retracted positions,
11 correct?

12 A Correct.

13 Q And the extended and retracted positions
14 are in a plane perpendicular to the surface being
15 painted, correct?

16 A Yes, it can go to perpendicular, yes.

17 Q And the extent retracted positions pivot
18 about a second axis z-z, correct?

19 A That's right.

20 Q So, it's fair to say then that the handle
21 22 pivots parallel to the surface being painted,
22 while the adapter 23 pivots perpendicular to the

1 surface being painted; is that right?

2 A Fairly perpendicular to the surface, yes.

3 Q And since handle 22 pivots about a first
4 axis, and the adapter 23 pivots about a second
5 axis, the handle and the adapter pivot about
6 different axes, correct?

7 MR. MESSICK: Object to the form.

8 A Well, independently, but when it's in
9 motion, and you pivot about the z and y, that --
10 what do we call it, item 22 -- nope, sorry, 23,
11 pivots about both. So it's not a pure rotation
12 about the original pivot axis because it pivots
13 about both.

14 Q So what does it engage in pure rotation
15 about the original axis?

16 A If -- let me make sure I get my axes
17 straight.

18 If the z-z is -- let's see... excuse me
19 for one second.

20 Okay. If the y axis is perpendicular to
21 the floor and z is parallel to it, then when they
22 both move, okay, the component 23 is not in pure

1 rotation about the y axis.

2 When they both move together, then that's
3 it's not in pure rotation about the original pivot
4 axis, I'll call it.

5 Q So what you refer to as the original pivot
6 axis is what Rosnak calls the first axis that the
7 handle pivots about; is that right?

8 A It's the -- yeah, I guess the first axis
9 is y. That's for component 22.

10 23 is the z axis. So it pivots around 23.

11 But with respect to what I'll call the
12 main pivot axis in the y direction, it's not a
13 pure rotation.

14 Q So the adapter 23 is not in pure rotation
15 about the first axis it calls the y axis?

16 A Correct. When it's moving about the z, it
17 certainly not in pure rotation about the y,
18 because it's rotating in two different directions.

19 Q But in your opinion, even though the
20 adapter 23, when it's rotating about the second
21 axis, is not rotating about the first axis. It is
22 still engaging in pivotal movement, in your

1 opinion, about that first axis, correct?

2 A Well, it's because it's rotating about
3 both simultaneously. That paint applicator, the
4 whole idea it acts like a universal joint so you
5 can have two different degrees of freedom.

6 So when it rotates about both, as would
7 typically be, it's not in pure rotation with
8 respect to the surface being painted, for example.
9 And the pivot axis is in that plane.

10 I'm just saying it's not because you have
11 a linkage basically. That's a rotational linkage.
12 That it does not -- it's not in pure fixed
13 rotation about the pivot axis.

14 Q And you say at the bottom of page 7 --
15 just a moment. Start of the last sentence.

16 A Okay.

17 Q It says: Rosnak's configuration
18 demonstrates that when a proximal component pivots
19 about a defined hinge axis, the distal components
20 connected through the linkage likewise undergo
21 pivot-driven displacement, even if their local
22 rotations differ in direction, magnitude or path,

1 which is typical of real-world multi-joint or
2 compound mechanism assemblies.

3 Do you see that?

4 A I do.

5 Q And so the proximal component you're
6 referring to is the handle 2, right?

7 A The near one, yeah.

8 Q And the distal component is the adapter 23
9 connected via the linkage, right?

10 A Yes. I mean, if you're describing it from
11 the handle, then, yes, that's right. Distal is
12 far away.

13 Q But Rosnak never uses the terminology in
14 the same way you do, correct?

15 A Which terminology --

16 MR. MESSICK: Object to the form.

17 Q Strike that. Let me ask a better
18 question.

19 Rosnak never states that the distal
20 component adapter 23 is pivoting or undergoing
21 pivotal movement relative to the first or main
22 axis, right?

1 MR. MESSICK: Object to form.

2 A Well, he's, basically, in this patent
3 concerned with setting up what I call the
4 universal, kind of, joint. I don't think he was
5 concerned with exactly what he was using for
6 terminology.

7 I bring this example up because I think
8 it's just a great example on how if you have two
9 things pivoting, rotating in different planes,
10 relative to whichever hinge you want to call the
11 hinge about what you're pivoting, is that it's not
12 a pure rotation because you have two things moving
13 at once.

14 I don't think he wasn't concerned with
15 terminology such as "pivoting," like we are in
16 this case. So he did not use -- again, I'd have
17 to read the patent again, but if he didn't, he
18 wasn't trying to set those definitions up.

19 If you just look at the figures, you know
20 how it works, is my point.

21 Q So you're just relying on Rosnak as an
22 example where you have a system of two axes

1 involving a linkage; is that right?

2 MR. MESSICK: Object to the form.

3 A I think I said it pretty clearly either
4 before it or after it. Yeah.

5 Yeah, it's pivotal movement about multiple
6 axes. And as you know where I discuss Nakajima,
7 for example. All three examples I give
8 demonstrate how, you know, pivotal movement when
9 you're rotating about different axes is a
10 combination of motions that is not a rigid body
11 pure rotation in the end.

12 Q Could you go to page 6 of your second
13 declaration, and where you quote from Rosnak,
14 column 5, lines 29 to 34.

15 A Yep.

16 Q And in that quote, Rosnak says: The
17 handle is mounted for pivotal movement relative to
18 the base, and the adapter is mounted for pivotal
19 movement relative to the handle.

20 Do you see that?

21 A Correct.

22 Q Now, Rosnak never says the adapter is

1 mounted for pivotal movement relative to the base,
2 right?

3 MR. MESSICK: Object to the form.

4 A Well, what is he saying is here -- he's
5 saying you can pivot about a base axis and you can
6 another -- another component can pivot about
7 another axis that's on the component that pivoting
8 on the base axis.

9 So that's why he gets the two degrees of
10 freedom there. Right?

11 Q Yes. But Rosnak doesn't use the
12 terminology to suggest that the distal component,
13 the adapter, is engaging in pivotal movement about
14 the first or main axis, right?

15 MR. MESSICK: Object to the form.

16 A Yeah. I mean why would he? It's pretty
17 obvious when you have two things pivoting in two
18 different directions, you can discuss the pivot
19 about the base.

20 Actually, I think if we call the base the
21 painthead, that's most critical, right, because
22 that's what's touching the surface. You got to

1 keep that painting head flat so you're pivoting
2 about that base, is what's important, because
3 that's the -- the base is the base pivot. Right?
4 That's what everything has to be referenced to
5 because that has got to stay flat.

6 So I'm not surprised he doesn't say that
7 per se. It's understood in this inventions that's
8 how it has got to be.

9 Q So Rosnak doesn't have any usage of
10 pivotal movement that demonstrates that rotation
11 about a second axis that itself rotates about a
12 first axis is somehow pivotal movement about that
13 first axis, right?

14 MR. MESSICK: Object to form.

15 A Well, I think he does because the first
16 axis is what is on the painthead, and that has to
17 be -- you know, everything has to be with respect
18 to painthead. He doesn't explicitly say it but I
19 think it's kind of obvious looking at the
20 invention, that's what the device does.

21 If it didn't, then the painthead would
22 come off the painting surface and you would make a

1 mess.

2 Q We've got lot of messes going on today.

3 A Yeah, I was just thinking that too.

4 Q Paint, champagne, water.

5 Let's go to paragraph 10, and in paragraph
6 10 you talk about a prior reference called Simon
7 -- or maybe it's not prior art. I don't know.

8 But you say -- you say in paragraph 10:
9 This understanding is also reflected in the
10 teachings of Simon, which is Exhibit 1017?

11 Do you see that?

12 A I do.

13 Q I assume you have with it but I'll go
14 ahead and put it in the chat just in case.

15 A I got it in right in front of me.

16 You mean the reference itself?

17 Q Yes. Exhibit 1017.

18 (Previously marked for identification
19 Exhibit 1017.)

20 Q You state that: Simon discloses pivotal
21 movement occurring about multiple axes within a
22 single assembly.

1 Do you see that?

2 A I do.

3 Q So Simon is describing a chair, right?

4 A More specifically, a movable platform, I
5 think he called it, that's connected to a chair.

6 Q Okay. So Simon is describing a chair that
7 has a connected work surface or table, right?

8 A Correct.

9 Q Okay. Is it okay if I call it a table,
10 for simplicity sake?

11 A That would be great.

12 Q The table in Simon has a member that
13 connects it to the chair via a first mounting
14 portion 56, that you have highlighted in blue,
15 correct?

16 A That's right.

17 Q And that blue first mounting portion 56
18 can rotate about a first pivot axis 44,
19 highlighted in green, correct?

20 A That's right.

21 Q And I notice that Simon uses the term
22 "rotating." So in this instance, Simon is using

1 the term "rotating" and "pivot" to mean the same
2 thing, right?

3 MR. MESSICK: Object to the form.

4 A Well, I think if he says -- he calls it a
5 first pivot axis. So, yes, that would be the axis
6 it rotates -- that component rotates around.

7 Q Okay. And the table itself can also
8 rotate about a second pivot axis formed by the
9 second mounting portion 82 highlighted in red,
10 correct?

11 A Correct.

12 Q Now, you didn't specify, I notice, in your
13 declaration whether that table rotates freely
14 about the second pivot axis -- I'm sorry, let me
15 restate that. Strike that.

16 I notice you didn't specify in your
17 declaration whether the table rotates freely about
18 the second pivot axis as the blue first mount
19 portion 56 rotates about the first pivot axis.

20 Isn't that right? You didn't specify that
21 in the declaration?

22 A No, I did not.

1 If you look at the drawings, it does,
2 though, the drawings of Simon. It's a component
3 that fits in -- sleeve 82 fits in component 54, I
4 believe, so they rotate independently.

5 Q Which figures were you referring to?

6 A Okay. Well, now we got to go to Simon.
7 Binder juggling. Let's see, that would be in the
8 big binder, I guess.

9 MR. MESSICK: While he's doing that,
10 Jason, we have been going about 50 minutes, just
11 as a heads up.

12 MR. MUDD: Okay. Sounds good. I'll
13 probably get through the rest of Simon, and then
14 we can take a break.

15 MR. MESSICK: Sounds good.

16 A Simon, that's 117, okay, I found Simon.
17 And figure 4 shows a table with that post, I guess
18 it's 84. And that slides into 70. And as I
19 recall, that's what allows it to rotate.

20 It may rotate around -- if you look at
21 figure 8, it could also rotates around that.

22 Now I'll have to go back and do a little

1 digging.

2 Q I'm assuming there's some degree of
3 friction, though, where a user can rotate it to a
4 certain position and it will stay in that
5 position; is that right?

6 A I believe so. I would have to go through
7 the specification again.

8 Q Okay.

9 A But what I do know is, I mean, the whole
10 point of this example is the table rotates on one
11 axis. How it does it, I forget exactly.

12 And the arm that supports the table, that
13 L-shaped arm, rotates on another axis.

14 Q Gotcha.

15 A That's why I include this example.

16 Q I see. But you're not aware necessarily
17 in Simon whether the table rotates at the same
18 time the arm rotates about the chair, right?

19 MR. MESSICK: Object to the form.

20 A No, they can rotate independently.

21 Q Okay.

22 A I mean, you could have it so they rotate

1 together if you wanted to, or you could -- what I
2 think happens mostly in -- so much of the
3 old-school desks where you can rotate the desk
4 surface around you and, obviously, if you want the
5 table surface to be square to your body, if you
6 are rotating in and out, it has to be able to
7 rotate on a second axis so you can get it square
8 to yourself.

9 Depending on how large an individual you
10 are, you may need to rotate the -- I guess the
11 armed 54 down there, the L-shaped arm, away from
12 you, and then pivot the table, so they rotate
13 independently.

14 Q And I'll ask a similar question like I did
15 for Rosnak. So in -- Simon never uses terminology
16 stating that the table itself engages in pivotal
17 movement -- or pivots or rotates -- about the
18 first pivot axis highlighted in green, correct?

19 MR. MESSICK: Object to the form.

20 A I don't recall if he does or doesn't, but
21 I don't think he would have to. Again, because
22 it's pretty obvious that if you have two different

1 rotating axes, you know, and they are both
2 rotating, they are going to rotate about the main
3 pivot axis in this case, which is the -- I'm
4 sorry, it's going to pivot about that axis near
5 component 56 that's connected to the bottom of the
6 chair.

7 If he doesn't say that, I'm not surprised
8 that he wouldn't.

9 It's obvious from the configuration. You
10 have two rotations. It's kind of like the earth
11 and the sun kind of scenario; earth, sun and moon,
12 if you recall from the last deposition.

13 Q Right. And how folks may talk about the
14 earth rotating about the sun, and similarly folks
15 may talk about the moon rotating about the earth,
16 but no one ever says the moon rotates about the
17 sun, right?

18 MR. MESSICK: Object to the form.

19 A Well, no one would say -- if the way I
20 stated is, if you know the earth is rotating
21 around the sun, and you know the moon is rotating
22 around the earth, no one would say the moon is

1 doesn't rotate around the sun too, because it's
2 connected to the earth; but I understand what you
3 are saying.

4 MR. MUDD: Okay, this is a good time to
5 take a break.

6 (Off the record.)

7 BY MR. MUDD:

8 Q Could you please turn to paragraph 11 of
9 your second declaration where you discuss the
10 Francart reference.

11 A I am there.

12 Q And Francart reference is Exhibit 1018,
13 correct?

14 A Correct.

15 Q Sharing it in the chat just in case.

16 (Previously marked for identification
17 Exhibit 1018.)

18 Q Francart describes a first solid metal
19 link 32, that you have colored blue, correct?

20 A That is correct.

21 Q And Francart describes a second solid
22 metal link 34 that you've colored red, correct?

1 A Correct.

2 Q And the first link 32 in blue is pivotally
3 coupled at one end to a fixed support via a first
4 pin 42, that you have highlighted in green,
5 correct?

6 A That's right.

7 Q And the first link 32 pivots about that
8 first pin 42, correct?

9 A Right.

10 Q And Francart calls that first pin 42 the
11 second pivot axis, correct?

12 A Yes, I believe that is so.

13 Q And then the first link 32 is pivotally
14 coupled at its other end to the second link 34,
15 via a second pin 46, correct?

16 A Right.

17 Q And Francart calls that second pin 46 the
18 first pivot axis, correct?

19 A I believe... take a quick check.

20 Q I think in the text you call it a first
21 first axis.

22 A That's right, that's right.

1 Q So let me ask that again. First pin 42 --
2 strike that.

3 The second pin 46 defines what it calls a
4 first pivot axis -- I'm sorry, I did it again.

5 A Long day, long day.

6 Q Yeah, exactly. The second pin 46 defines
7 what Francart calls the first axis, correct?

8 A Okay, yep.

9 Q So we have a first pin 42 that defines
10 second pivot axis, and we have a second pin 46
11 that defines the first axis, correct?

12 A That is correct.

13 Q And the first pin 42, which is on the
14 left, is coupled to what Francart calls a fixed
15 support, right?

16 A Right.

17 Q And then we have a linkage in the middle,
18 that is defined by the second pin 46, which
19 defines the first axis, correct?

20 A Yeah, second opinion, first axis, correct.

21 Q The terminology is confusing because
22 it's --

1 A It's not consistent, I understand.

2 Q And then the other end of the second link
3 34, on the right, is connected via a linkage 48 to
4 a member 88, as shown in figure 4; is that
5 correct?

6 A Correct.

7 Q I think you have Francart in front of you.
8 You might have to look at other figures, but that
9 member 88 is coupled to a float that sits on the
10 surface of water; is that correct?

11 A Yeah. That's in figure 1 of that patent.

12 Q I think it's also in figures 2 and 5.

13 A Yep, it is.

14 Q And so that flow provides some support for
15 the linkage 48 and second link 34, correct?

16 MR. MESSICK: Object to the form.

17 A I'm not sure what you mean by "support"
18 per se.

19 Q Sure. So, the right side of second link
20 34 is not allowed to rotate freely under the force
21 of gravity, correct?

22 A Let's see.... well, I see what you mean.

1 I mean, gravity is still involved. But if you
2 what mean is that there is some resistance due to
3 the flow, yes, I would agree with that, sure.

4 Q Okay. Great. Thank you.

5 If we call that second link the distal
6 component in Francart, and we call the mouthpiece
7 in Nakajima the distal component, then a
8 difference between Francart and Nakajima lies in
9 the fact that Nakajima's distal component rotates
10 freely under the action of gravity, whereas
11 Francart's distal component has some resistance
12 such that it's not rotating freely under the force
13 of gravity, correct?

14 A Well, you got to be careful. If you have
15 Nakajima upside down, you could actually have some
16 force of gravity.

17 Also there is that flex tube in Nakajima
18 that offers some resistance depending on the
19 direction you rotate, so, I mean, I don't think
20 the resistance of the -- I mean, there is
21 resistance in both, I guess is what I'm saying,
22 depending on the direction you want to rotate the

1 neck of --

2 Q Well, let's take what the figures show in
3 Nakajima, that it's right side up. And let's talk
4 about going from the closed position to the open
5 position where there is no -- you know, force of
6 the tube is not resisting it from opening.

7 In that scenario, as Nakajima says, the
8 mouthpiece is allowed to rotate freely due to the
9 gravity. And that differs from Frankart's distal
10 component that has resistance from the flow,
11 correct?

12 MR. MESSICK: Object to form.

13 A Excuse me, I see what you mean, yeah.
14 This example is in here because it's simply
15 another example of how you can have multiple
16 component linkage where two individual pieces
17 rotate, but the -- oh, let's say 1048, for
18 example, when this whole thing moves, right,
19 doesn't necessarily rotate with a fixed radius and
20 pure rotation about, let's say, 42. Right?

21 I didn't consider forces, and things like
22 that. I considered pure kinematic motion. And by

1 definition, kinematic motion doesn't consider the
2 forces involved.

3 It was simply just show this multipiece
4 link in Choi. You know, it's not a pure rotation
5 about a pivotal axis. That's all.

6 Q Okay. Understood.

7 And Francart never uses terminology to
8 state that the second link pivots or rotates or
9 engages in pivotal movement about the first pin
10 42, highlighted in green, correct?

11 MR. MESSICK: Object to the form.

12 A I mean, I would have to look through the
13 specification again. But I don't recall he uses
14 that exact -- that exact language, but he does
15 discuss the motion, which is clearly, you know,
16 not a fixed rotation when you look at all the
17 different components.

18 Q Yeah, Frankart does say that the first
19 link pivots about the first pin and the second
20 link pivots about the second pin --

21 A Right.

22 Q -- right?

1 A Correct, yeah, that's what I mean.

2 Q And those are instances of pure rotational
3 motion, right?

4 MR. MESSICK: Object to the form.

5 A Well, with respect to each of those
6 respective pins, but the rotation of link 34 about
7 what I'll call the base link 42, is not pure
8 rotation. And that's why I put it in there.

9 Q Understood. And Francart never refers to
10 the second link 34 as pivoting or rotating or
11 engaging in pivotal movement about that first pin
12 42, correct?

13 MR. MESSICK: Object to the form.

14 A Again, I don't believe so, but, I mean,
15 he -- because it's fixed there, I believe that's
16 the point where it's fixed to that frame.

17 Just look at the linkage and you know
18 that's where the anchor point would be.

19 Q Can you turn, please, to paragraph 19,
20 specifically the portion on page 18 of your second
21 declaration.

22 A So I can move the heavy binder?

1 Q Yes.

2 A All right. Page 19, I believe you said.
3 Whereabouts on 19, paragraph 20?

4 Q I'm sorry, page 18, paragraph 19.

5 A Oh, got it.

6 Q And I want to go to the last sentence on
7 page 18 where you say -- and you're talking about
8 Nakajima: From the perspective of a POSITA, the
9 overall motion of that mouthpiece relative to the
10 cap assembly base is a pivoting movement produced
11 by the rotation lid 4 by hinge shaft 19,
12 regardless of whether additional joints in the
13 linkage -- e.g., rotation at arms 23 -- produce
14 local rotation or flexing of the mouthpiece
15 assembly itself.

16 Do you see that?

17 A I do.

18 Q And I believe you have referred to these
19 mechanisms as compound linkage mechanisms?

20 A That's correct.

21 Q And compound linkage mechanisms have more
22 than one axis of rotation, correct?

1 A In most cases, they do.

2 Q And in your opinion, Nakajima has a
3 compound linkage mechanism with two axes of
4 rotation, right?

5 A Right. Just to clarify, there are some
6 compound linkages, like the piston in your car
7 engine, and may have a part of that link that
8 isn't pure translation up and down the cylinder.

9 But for this discussion, yes, I'm talking
10 about the kinds of linkages that have at least two
11 axes of rotation.

12 Q Understood. One of those axes of rotation
13 in Nakajima is an axis of rotation defined by the
14 hinge shafts 19, correct?

15 A Correct.

16 Q And there's a second axis of rotation in
17 Nakajima defined by the protrusions 24 of the arm
18 23, correct?

19 A Correct.

20 Q So is it your opinion that the green
21 mouthpiece in Nakajima itself has two separate
22 axes of rotation?

1 A Well, the mouthpiece pivots about the
2 hinge shafts 19, and so, fundamentally, that's the
3 main rotation.

4 Then it has a secondary rotation about
5 pins 24; therefore, although it rotates about the
6 hinge shaft 19, it has an additional degree of
7 freedom that allows it to rotate across the other
8 ones, the 24 pins.

9 Q So, in your view, the green mouthpiece is
10 pivoting about two axes, both the hinge shaft 19
11 and protrusions 24; is that correct?

12 A I think it's probably more accurate to say
13 it with respect to pivotal motion. We'll stick
14 with the pivot axis I have in the figure, is the
15 main axis of rotation, the pivoting axis. And it
16 rotates with respect to the pivot axis, and then
17 has a secondary rotation with respect to the
18 arms -- the pins 24.

19 Q So the mouthpiece, in your opinion, has a
20 primary rotation about a primary axis, and a
21 secondary rotation about a secondary axis; is that
22 fair?

1 A Well, it has a -- again, I want to -- it's
2 pivotal about the -- what I call the primary axis
3 the pivot axis, and rotates about a secondary
4 axis.

5 In the end, what I'm trying to say, is
6 that mouthpiece pivots about the axis. It just
7 doesn't do it as a single pure rotation. It has
8 another degree of freedom that allows more
9 flexibility.

10 Q So to make sure I understood your answer
11 correctly, is your testimony that the green
12 mouthpiece pivots about the hinge shafts 19 --
13 sorry, strike that.

14 Is your testimony the green mouthpiece in
15 Nakajima pivots about the pivot axis defined by
16 hinge shafts 19, and also has a secondary rotation
17 about the protrusions 24; is that correct?

18 A Yeah.

19 MR. MESSICK: Object to the form. Go
20 ahead.

21 Q So, is it fair to say, in your opinion,
22 that the green mouthpiece pivots about the hinge

1 shaft 19, but does not rotate about the hinge
2 shaft 19?

3 A No. I think what I'm trying to -- let me
4 clarify because I don't think my explanation was
5 that clear.

6 You have two rotations. You have two
7 different links. And the discussion of pivotal
8 movement, the mouthpiece through those two
9 rotations pivots about the pivot axis that I have
10 in the figure.

11 Q I want to make sure I identify those two
12 rotations that lead to the pivoting. So would the
13 first rotation be the rotation of the lid 4, about
14 the hinge shafts 19, in the second rotation be the
15 rotation of the mouthpiece about the protrusions
16 24; is that correct?

17 A Yes.

18 Q If I'm understanding you correctly, it's
19 your opinion that it's the rotation of the lid
20 about the hinge shafts 19, and the secondary
21 rotation of the mouthpiece about the protrusions
22 24, that combine to create pivotal movement of the

1 mouthpiece about the pivot axis defined by hinge
2 shafts 19?

3 MR. MESSICK: Object to the form.

4 A Well, I'm --

5 Q I promise I tried to scrupulously state
6 what you just said.

7 A Right. Yeah. Yeah, I think that's
8 correct, because what you're saying is your
9 interpretation of what I said that is, the overall
10 motion of the mouthpiece with respect to 19, those
11 pins 19, is pivotal, and the definition of how
12 that moves is the sum of a rotation about 19 of
13 the cover, and a rotation of the mouthpiece in
14 that little bracket through 24. I think we are on
15 the same page.

16 Q Is there a particular reasoning behind why
17 you call one a primary axis and one a secondary
18 axis?

19 A Well, in Nakajima, the bases -- I forget
20 what he calls that part, it's the yellow one in
21 the figure. That's the base.

22 So that would be what is connected to

1 bottle that the user hoses -- holds.

2 So it's natural to -- for me to call that
3 the primary because that's the reference point.
4 That's what the user holds, so that would be the
5 primary axis.

6 Then when he opens it up and the mount
7 comes into the open position, that's when the user
8 can take a drink,

9 Q And so the primary, secondary label
10 doesn't have anything to do with the amount of
11 rotation that occurs about those two respective
12 axes during opening and closing, right?

13 A Correct, if you look at the claim, I was
14 referring us back to the claim, claim 1, we're in
15 column 19, around line 32, mouthpiece and pivotal
16 mount are configured to be selectively pivoted, et
17 cetera, et cetera.

18 And line 21, the pivotal mount coupled to
19 the cap assembly, so that pivotal mount is what's
20 the primary mount. As I described it. That's
21 what's connected to the cap assembly.

22 So, in Nakajima, that would be, you know,

1 hinge shafts 19 define that -- that axis, the
2 pivotal axis.

3 Q If you could go to page 21, the end of
4 paragraph 21.

5 A I am there.

6 Q And in the last sentence of paragraph
7 21 -- first, in the first full sentence on page 21
8 you describe two components of movement, number 1,
9 rotation about the primary pivotal axis of the
10 lid; and number 2, rotation of the mouthpiece
11 about the secondary pivotal axis; is that right?

12 A That's right.

13 Q And the next sentence, you say: Showing
14 these components sequentially provides a depiction
15 of how the combined rotations about both the
16 primary and secondary pivotal axes together govern
17 the mouthpiece's full pivotal movement.

18 Do you see that?

19 A I do.

20 Q So you do -- you use some software
21 to -- and the following pages -- to provide some
22 simulations of the rotation about the primary

1 axis, and then later the rotation about the
2 secondary axis, correct?

3 A Yeah, I have these images that, kind of,
4 described the kinematics of what the rotation.
5 One axis is then what it is on the second axis.

6 Q Right. And it's hypothetical because, in
7 Nakajima, you're not having rotation about the
8 primary axis by itself and independent of rotation
9 about the secondary axis, correct?

10 MR. MESSICK: Object to the form.

11 A Yeah, what I'm -- what I was trying to
12 depict was how the sum of a group of axes around
13 one primary axis, plus the sum of motions about a
14 secondary, lead you from the beginning, where
15 Nakajima has got the cap closed, the lid closed to
16 the end.

17 So you are correct, I didn't do them
18 simultaneously because that would really convolute
19 how much is each one moving. You really couldn't
20 look and see here's the action about one axis and
21 then here is what happens at the other.

22 So you are correct, they are not in

1 realtime. They are not simultaneously. I pulled
2 them apart.

3 But in the end, you get from the
4 beginning, and you get to the end in the same
5 position.

6 Q And you used image editor software, GNU
7 Image Manipulation Program, GIMP, to do this; is
8 that correct?

9 A Right, GNU Image.

10 Q Oh, it's called GNU Image?

11 A That's what I call it.

12 Q Understood. And you used GNU Image to
13 manipulate figure 2 of Nakajima; is that correct?

14 A I think it was 2. I start in the closed
15 position, figure 2, yeah.

16 Q Okay. So just to be clear, these images
17 that you generate are alterations of the original
18 images of Nakajima and they don't appear in
19 Nakajima itself, correct?

20 MR. MESSICK: Objection, form.

21 A My figures that are a result of the
22 kinematic images are not taken directly from

1 Nakajima.

2 I took portions of Nakajima figure 2 and
3 rotated those portions. So you will not see in my
4 report all of those exact images.

5 Q And I believe you show images where --
6 what you call freeform-selected structure,
7 including Nakajima's lid, pivotal mount and
8 mouthpiece, are rotated one degree clockwise about
9 the primary axis.

10 That's the first thing you show, correct?

11 A Yeah, that should be the first one, 1
12 degree.

13 Q And that's in paragraph 23.

14 A Got it.

15 Q Then in paragraph 24 you continue in the
16 clockwise direction and show rotation by 3 degrees
17 of those same components, correct?

18 A Correct.

19 Q And then in paragraph 25, you show
20 rotation by 5 degrees clockwise of those same
21 components, right?

22 A That's correct.

1 Q And then the first sentence on page 25 of
2 your declaration, within paragraph 25, you state:
3 These preceding three figures illustrate that
4 during the initial opening of Nakajima's lid 4,
5 the movement of the mouthpiece is governed
6 predominately by rotation about the primary
7 pivotal axis.

8 Do you see that?

9 A I do.

10 Q I notice you use the word "predominately,"
11 so that means it's not not governed exclusively by
12 rotation about the primary pivotal axis, correct?

13 MR. MESSICK: Object to form.

14 A What it means is it's almost entirely a
15 rotation of everything I've shown just about that
16 axis.

17 Q So almost entirely but not entirely,
18 correct?

19 A Very nearly, I think --

20 (The court reporter asked for clarification.)

21 THE REPORTER: Was there an objection in
22 there?

1 MR. MESSICK: Yes, ma'am. Go ahead.

2 A I spoke over you, so... sorry, Jason, go
3 ahead.

4 Q You say in the next sentence: This early
5 stage the mouthpiece remains closely constrained
6 within the storage recess 11, and moves as a near
7 rigid extension of the lid 4, having little
8 opportunity to rotate independently about the
9 secondary pivotal axis.

10 Do you see that?

11 A I do.

12 Q So, again, you say that the mouthpiece is
13 a near rigid extension, not rigid extension of the
14 lid in this early stage, correct?

15 A Yeah. I say it's nearly like that,
16 because the motion is so small. And almost -- end
17 of the mouthpiece almost moves as one arc with
18 respect to the pivot axis 19.

19 Q How did you define this early stage or
20 initial opening of Nakajima?

21 A Just, you know, I use the small -- the
22 smallest rotation at the very beginning. It's

1 pretty much, you know, a rotation at a constant
2 radius.

3 And I picked a degree because you
4 couldn't -- if I did a half degree, you couldn't
5 see it in the figure. I chose one degree to start
6 as the first increment, just you see on the
7 figure, I guess it's page 24.

8 Q I believe you defined this early stage as
9 being from zero to 5 degrees, correct?

10 MR. MESSICK: Object to the form.

11 A Yeah, but maybe I'll misunderstood your
12 question.

13 I thought you were asking how basically I
14 picked those angles to begin with.

15 What I wanted to show was the smallest
16 angle where you could see something different in
17 the figure, to about 5 degrees. That's a
18 approximation with the early stages. I think the
19 whole things goes up to 90, something like, that
20 70, 90. It's here in the report.

21 Q Right. You say in this section in
22 paragraph 25 that these three figures, which are

1 the figures showing 1, 3 and 5 degrees, you say
2 they are the, quote, initial opening or, quote,
3 early stage in Nakajima, correct?

4 A Correct.

5 Q So, in your opinion, from zero to 5
6 degrees is what you define as the initial opening
7 or early stage of opening in Nakajima, correct?

8 MR. MESSICK: Object to form.

9 A Could be a little more. It's just the
10 very beginning where there is very little
11 rotation, if any, of the mouthpiece about the pins
12 24.

13 Q And so how did you select 5 degrees?

14 A I used my judgment and looked at the
15 figures. Again, I could have probably picked, oh,
16 I don't know, 6, 7, but if you look at the next
17 figure after 5, I think we go to... 15. That's
18 significantly bigger.

19 Q I hope that was an intentional reference
20 to 6, 7, just --

21 A You lost me there.

22 Q Sorry. Sorry. Never mind.

1 A Do you understand my answer, though?

2 Q Yeah, I did. Okay.

3 So, just to be clear, Nakajima never
4 refers to an initial opening or early stage of
5 opening, correct?

6 A No --

7 MR. MESSICK: Object to the form.

8 A -- Nakajima does not.

9 Q And since it doesn't refer to an initial
10 opening, or an early stage of opening, Nakajima
11 doesn't obviously define that as from zero to 5
12 degrees, correct?

13 A No. Nakajima wasn't concerned with the
14 position of the mouthpiece, per se, with respect
15 to the pivot axis.

16 Since I was, I had to make a judgment:
17 How do we demonstrate this? There's very little
18 rotation of -- about the link 20 -- the pin 24
19 when you first open it. That's what my intent
20 was. So Nakajima didn't -- wasn't concerned with
21 that.

22 Q And so in figure 2 of Nakajima, the

1 mouthpiece is only shown resting against the
2 recess wall 11, correct?

3 A Correct.

4 Q And so your figures showing the mouthpiece
5 with a space between it, and the recess wall 11,
6 are alterations of Nakajima's figures, correct?

7 MR. MESSICK: Object to the form.

8 A They are -- they are not Nakajima's
9 figures. They are portions of his figures that I
10 rotated, as I describe in my declaration, to
11 demonstrate other two motions that combined to
12 create the end position of the mouthpiece.

13 Q Now, Nakajima doesn't provide the
14 dimensions or measurements that would allow you to
15 determine, you know, what distance the -- exists
16 along that recess wall 11 from the point of
17 contact of the mouthpiece -- strike that.

18 For your opinion of -- that there is
19 little rotation about the secondary axis, is it
20 your opinion that is somehow caused by the size of
21 the lip at the top of the recess wall 11?

22 MR. MESSICK: Object to the form.

1 A Well, there are no dimensions here. I
2 look at the figure, and I look at, you know, that
3 surface where the mouthpiece -- again, I'm in
4 figure 2. Let's make sure we are on the same
5 figure.

6 I take a look at those surfaces, and based
7 on the very steep angle of -- oh, I think he calls
8 to some compartment that holds the mouthpiece,
9 where that interior wall is that contacts the tip
10 of the mouthpiece there; do you understand where
11 I'm talking about?

12 Q Uh-huh.

13 A Based on that surface, he doesn't give
14 dimensions. So it could be -- in fact, it's very
15 nearly vertical --

16 Q Sorry.

17 A So, to answer your question, he doesn't
18 give dimensions.

19 But, you know, he shows me, you know, how
20 the surface is basically configured, so I can make
21 the statement I could see in someone designing his
22 products so that initially there is no rotation at

1 all of the mouthpiece, but he doesn't give us
2 those dimensions.

3 Q On page 19 of your declaration, you have a
4 red-dashed arc that I believe traces the path of
5 the linkage, the protrusion is 24 during opening;
6 is that correct?

7 MR. MESSICK: Object to the form.

8 A Oh, yeah. That -- let's see, that is just
9 showing what a constant radius arc would look
10 like. I don't -- let me double check. I don't
11 think that arc length is what is meaningful here.
12 Let's see. Bear with me one second, please.

13 Yeah, I was just indicating a randomly
14 size arc that touches the end of the arms.

15 Q It would be the linkage, right?

16 A Yeah, right.

17 Q So, that red-dashed line is an arc showing
18 the curved path that the linkage takes during
19 opening, right?

20 MR. MESSICK: Object to the form.

21 A That's the path, the way I drew it, that
22 the ends of the arms -- let's see, it's the path

1 where a point on the end of the arm with the end
2 of the upper red solid line in the dispensing
3 position.

4 Q And I notice that -- sorry.

5 A No, I'm done. That's basically it. A
6 point on the arm, so the lid that move (as said).

7 Q Okay. I notice that the curvature of that
8 path does not align and is not the same as the
9 curvature in the recess wall 11, right?

10 MR. MESSICK: Object to the form.

11 A The curvature of the recess wall is
12 approximately that in certain spots, I think.

13 It's not a continuous arc. It's not a
14 continuous curvature in that wall you're talking
15 about.

16 Q Yes. The recess wall 11 -- it's curvature
17 does not -- it's not the same at all points along
18 that red-dashed arc, correct?

19 MR. MESSICK: Object to the form.

20 A Not in all -- all points, no.

21 Q And to have no rotation about that
22 secondary axis during the initial opening, the

1 curvature of the recessed wall 11 would have to be
2 the same as the curvature of that red-dashed arc,
3 correct?

4 A Have zero motion of the tip of the
5 mouthpiece, that's correct, at the point of
6 contact.

7 Q And so --

8 A I'm sorry, can I just clear -- I'm sorry,
9 my fault, can I clear it up? That arc I drew is
10 fairly random. You'd have to take an arc that
11 goes from the pivot point to the tip of the
12 mouthpiece in the closed position.

13 I mean, that -- on that dispensing
14 position that arc, again, that's just a random
15 length that happens to align on the point of the
16 arm of the lid.

17 Q Understood. But you agree with me that
18 the recess wall 11 doesn't have a circular
19 curvature, correct?

20 A Only in some spots, it does. It appears
21 to. I mean, really a curve is the sum of a group
22 of circular arcs, when you think about it.

1 Q Right. That's the point. It's not one
2 circle, right?

3 MR. MESSICK: Object to the form.

4 A There are many -- I mean, the curvature
5 isn't constant on that inner wall.

6 Q So, even during this initial opening, or
7 early stage opening, there is some rotation about
8 the secondary axis, correct?

9 MR. MESSICK: Object to the form.

10 A And in my 1 degree figure, I indicate
11 that. However, if the arc of the curvature of
12 that wall right at the point of contact were equal
13 to the distance between the tip of the mouthpiece
14 where it contacts it in the pivot point 19, there
15 is nothing in the specification that says it can't
16 be. Then it would be pure rotation at that point.

17 Q There is nothing in the specification of
18 Nakajima that says it is equal, correct?

19 A Correct. And there is nothing that
20 indicates it couldn't be.

21 Q Then if we continue on in your simulation
22 for the primary axis, I believe you also show 15

1 degrees, 30 degrees, 45 degrees, 60 degrees and 70
2 degrees; is that correct?

3 A Yeah. And probably as I think calling a
4 simulation probably isn't the accurate word,
5 because we already discussed that is not realtime.
6 This isn't how with every degree of rotation it
7 would act, because I'm isolating one motion.

8 It's probably more of a demonstration, but
9 that's -- I don't get into the weeds on that.

10 But, yeah, it goes up to 70 degrees with
11 the first, just rotating about the pivot point.
12 Right. That's on paragraph 30.

13 Q Yep. Let's go to paragraph 30, where you
14 show -- in paragraph 30, you have the 70 degree
15 clockwise rotation about the primary pivotal axis
16 illustrated, or demonstrated, and you said that
17 this is comparable to the fully open position
18 shown in figure 3 of Nakajima; is that right?

19 A Correct, that would be the fully -- right,
20 that is correct, because I think some of the top
21 of the -- when I did the rotation, if you look at
22 the top of figure 30, that wall near the number 13

1 actually goes all the way up and hits it, I think,
2 but you can't see it.

3 Q Yeah. On page 30 of the your declaration,
4 I noticed that one of the shortcomings of your
5 demonstration is that it shows that there is a
6 crimp in the tube still that probably shouldn't be
7 there, right?

8 MR. MESSICK: Object to the form.

9 Q Specifically -- let me be more specific.

10 Right at the portion of the tube labeled
11 with reference numeral 3, just to the right of it,
12 it shows as a crimp still there, but there is an
13 open space beneath it suggesting that that crimp
14 wouldn't be there, right?

15 MR. MESSICK: Object to form.

16 A Yeah, because the tube isn't really part
17 of the simulation because I took an image and I
18 rotated it.

19 What it is important is the lid portion,
20 and then as we will see the motion of the
21 mouthpiece portion.

22 Q And again, just just to confirm from

1 earlier, when you're showing the mouthpiece in
2 this position on page 30, you're not suggesting
3 that that ever happens with Nakajima's bottle,
4 right?

5 A Correct. It's not what I call realtime.

6 Q Right. Meaning the mouthpiece is never
7 held in that fixed position relative to the lid
8 shown on page 30, correct?

9 A Yeah, unless --

10 MR. MESSNICK: Object to form.

11 A Unless there was some gunk, or something.
12 Yeah, my intent was to just take a look at
13 rotation in 19, then we'll take a look at rotation
14 about 24, so in the end we can show how we get to
15 the final position.

16 Q Now, for your demonstration of secondary
17 axis rotation, I noticed that you started from
18 where you ended the prior demonstration at the 70
19 degree spot, right?

20 A Correct.

21 Q Why did you not start like you did for the
22 first demonstration at figure 2?

1 A Well, because, again, I'm trying to show
2 how the combination of the two independent
3 rotations gives you the final positioning.

4 So, if I started with figure 2, and then
5 just rotated the mouthpiece about 24, then I would
6 have to rotate the lid separately. I could have.

7 But I think it's more clearer for
8 demonstration purposes to start with a larger
9 component rotating about the pivotal axis, the
10 primary pivotal axis. Then while the mouthpiece
11 is away from the rest of the assembly, then show
12 it rotating. That's why I did that.

13 Q Gotcha. I believe you then show
14 counterclockwise rotations of the mouthpiece about
15 the secondary axis at 5 degrees, 15 degrees, 30
16 degrees, 45 degrees, 60 degrees, 75 degrees and 90
17 degrees; is that correct?

18 A That is 60, 75 and 90, correct. That gets
19 us to the fully open position.

20 Q Yes. And that is on page 39 of your
21 second declaration.

22 And you say: This demonstration

1 represents a mouthpiece orientation comparable to
2 that shown in figure 3 from Nakajima, in which the
3 lid 4 is fully open and the mouthpiece is directed
4 away from lid 4 to a similar extent.

5 (The court reporter asked for clarification.)

6 MR. MUDD: Directed away from the lid 4 to
7 a similar extent.

8 Q And so, you have your demonstration image
9 at 90 degrees shown on page 39, and then you have
10 figure 3 of Nakajima shown on page 40.

11 Do you see that?

12 A Correct.

13 Q Now, I noticed in -- there are some
14 differences between your demonstration image on 39
15 and figure 3, correct?

16 A That is --

17 MR. MESSICK: Objection to the form.

18 A There are differences, yes.

19 Q And one of them is, in your demonstration
20 image on page 39, it looks like the mouthpiece and
21 arms are overlapping part of the recess wall 11 in
22 the top of the cap; is that right?

1 A Yeah. And that's because, you know, it
2 was -- I have to overlay these images, and to get
3 clarity with the mouthpiece portion, you have to
4 have a little white space below it. It's just an
5 optical effect.

6 Again, the point of that figure was to
7 say, hey, if you look at the open position here,
8 the mouthpiece is -- you know, just about what
9 position where it is in Nakajima's figure 3.

10 It's not meant to be, you know, an exact
11 duplicate. It's not supposed to show that it's
12 exactly the same. Because I cut and pasted an
13 image and I rotated.

14 But it just demonstrates, you know, that
15 using these rotations you get to just about were
16 you are in figure 3 when the lid is open.

17 Q So, is it possible then that 90 degrees is
18 a little bit overstated, given that, you know, in
19 that 90 degree position, it's laying on top of the
20 wall?

21 MR. MESSICK: Object to the form.

22 A Well, again, this kind of analysis I don't

1 think can demonstrate a tolerance, and I was
2 picking whole angles. When you do that, you are
3 going to get a little overlap here or there.

4 I think this is a close approximation.
5 But I agree with you, there are some differences
6 in the figures because of the method I use to move
7 the images.

8 MR. MESSICK: Jason, you've been going
9 almost an hour, just so you know.

10 MR. MUDD: I'm really close, I think.

11 THE WITNESS: Don't stop now. Don't stop
12 now.

13 Q On page 40 of your declaration you explain
14 that your demonstrations of the primary rotational
15 movement of the lid, pivotal mounted mouthpiece
16 about the primary pivotal axis of approximately 70
17 degrees clockwise, and the secondary rotational
18 movement of the mouthpiece about the secondary
19 pivotal axis of approximately 90 degrees
20 counterclockwise, combined to form the compound
21 motion of the mouthpiece in Nakajima.

22 Is that fair?

1 A That's correct.

2 Q And so on the next page in paragraph 40,
3 you say: Because the challenge claims of the '250
4 patent do not preclude more complex movement,
5 including motion that results from combined
6 rotation about a primary pivotal axis, and a
7 secondary pivotal axis, Nakajima's mouthpiece
8 satisfies the claim requirement of pivotal
9 movement with the claimed pivotal mount about the
10 claimed pivotal axis as in my first declaration.

11 Do you see that?

12 A I do.

13 Q And you stand by that opinion?

14 A Yes.

15 Q And the opinion is based on your claim
16 construction that pivotal movement does not
17 require pure rotational motion about the claim
18 pivot axis, correct?

19 A Correct. It -- it -- for a compound
20 linkage that's not required. Pivotal motion can
21 be, as I demonstrated, the combination of two
22 additive rotations.

1 (Indiscernible crosstalk.)

2 Q And then in the last sentence in paragraph
3 40, you say: As shown in my preceding analysis,
4 Nakajima's mouthpiece rotates approximately 70
5 degrees clockwise, together with the pivotal mount
6 about the primary pivotal axis between the
7 positions shown in figures 2 and 3, thereby
8 meeting the claim...

9 Do you see that?

10 A I do.

11 Q Is there a typo in that sentence?

12 A Nakajima's mouthpiece rotates 70
13 degrees... just double check.

14 So the mouthpiece rotates 70 degrees
15 clockwise, which is the figure I have at the top
16 of page 30. That's the 70 degrees.

17 Together with the pivotal mount about the
18 primary pivotal axis.

19 So I'm saying it rotates clockwise with
20 the mount, in the positions between 2 and 3.

21 So, with the mount, it rotates clockwise.
22 I guess what's confusing -- then I say down below,

1 the additional rotation...

2 What I'm trying to say here is it rotates
3 70 degrees clockwise with the mount. And then on
4 its own, about pin 24 rotates counterclockwise.
5 Maybe that wasn't the best phrasing.

6 Q Yeah. I guess my question was: Did you
7 mean to say that Nakajima's mouthpiece pivots or
8 engages in pivotal movement, you know,
9 approximately 70 degrees clockwise together with
10 the pivotal mount?

11 MR. MESSICK: Object to the form.

12 A Well, I think I'm talking about -- I
13 probably didn't word it that well.

14 I'm saying that, you know, in the end it
15 rotates with respect to the pivotal axis between
16 figures 2 and 3, is what I think I'm really trying
17 to say.

18 Q You're right. In the next paragraph 41,
19 you state: The rotation of the mouthpiece about
20 the secondary pivotal axis does not negate, alter,
21 or diminish the fact the mouthpiece undergoes the
22 claimed pivotal movement about the primary pivotal

1 axis.

2 And so my understanding of your opinion
3 was that pivotal movement didn't require rotation
4 necessarily in that your opinion was that
5 Nakajima's mouthpiece pivots, or engages in
6 pivotal movement, in this 70 degrees clockwise
7 direction about the hinge shafts; is that correct?

8 MR. MESSICK: Object to the form.

9 A Yeah. I think maybe a better way to say
10 it is, what I'm saying is because it's connected
11 to the lid, right, but it has an additional
12 rotation. That doesn't mean it doesn't pivot
13 about the -- the primary pivotal axis that the lid
14 rotates about.

15 I think that's what I'm really trying to
16 say. I could have phrased it a little bit
17 differently but --

18 Q Okay.

19 A -- to prove that the mouthpiece does have
20 pivotal motion about the primary axis.

21 Q And you're not trying to contend in that
22 sentence that the mouthpiece engages in pure

1 rotation about the primary pivotal axis, correct?

2 A Not there.

3 Before I said it's nearly that at the very
4 small angles, is what I said earlier, but that's
5 not what that -- that's what I meant by that
6 paragraph.

7 MR. MUDD: Can we take like a five-minute
8 break. I think I'm very close to being done.

9 THE WITNESS: You bet.

10 (Off the record.)

11 MR. MUDD: Dr. Vallee, thank you for your
12 time today. I have no further questions and I'll
13 pass the witness.

14 THE WITNESS: Thank you.

15 MR. MESSICK: No questions from me.

16

17 (Deposition concluded at 3:52 p.m. EST.)

18

19

20

21

22

CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC

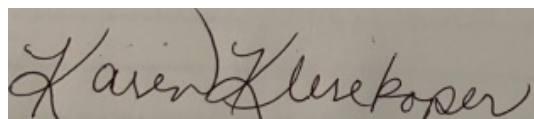
I, Karen Klerekoper, Certified Reporter and Notary Public within and for the State of Michigan, do hereby certify that DR. GLENN VALLE, the witness whose deposition is hereinbefore set forth, was duly sworn by me before the commencement of such deposition and that such deposition was taken before me and is a true record of the testimony given by such witness.

I further certify that the adverse party CamelBak Products was represented by counsel at the deposition.

I further certify that the deposition of DR. GLENN VALLE, occurred VIRTUALLY on Friday, January 16, 2026, commencing at 11:06 a.m. to 3:52 p.m.

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

IN WITNESS WHEREOF, I have hereunto set my hand this 18th day of January, 2026.



My commission expires:
10/7/30
County of Oakland
Notary public in and for the State of
Michigan

A			
able 24:22, 27:13, 28:4, 29:2, 31:6, 60:8, 68:8, 70:9, 72:21, 98:18, 108:16, 108:21, 127:6 above 59:21 absorbing 99:9 accept 57:5 according 83:8 accurate 139:12, 159:4 across 139:7 act 32:11, 159:7 action 133:10, 145:20, 171:20, 171:22 activate 54:10, 55:5 activated 53:21, 54:6, 54:17, 56:1, 62:21, 64:18 acts 116:4 actual 97:4 actually 26:13, 51:4, 57:3, 60:8, 60:13, 70:7, 82:17, 83:18, 90:13, 91:7, 91:10, 94:12, 100:11, 100:18, 102:13, 102:15, 106:12, 120:20, 133:15, 160:1	actuate 84:14 actuated 53:15, 56:4, 64:4, 64:6, 64:8, 66:4, 67:4, 67:5, 80:11, 82:19, 83:21, 83:22, 84:1, 84:16 adapter 113:6, 113:9, 113:22, 114:4, 114:5, 115:14, 115:20, 117:8, 117:20, 119:18, 119:22, 120:13 addition 68:21 additional 83:4, 137:12, 139:6, 168:1, 169:11 additive 166:22 adequate 100:22 adequately 74:1, 90:8 adopted 97:2 adverse 171:12 affirmative 96:8 affirmatively 96:10 after 103:10, 119:4, 151:17 again 5:12, 5:21, 10:4, 11:22, 12:1, 14:14, 15:9, 15:12, 17:6, 25:15, 29:5, 29:22, 31:8, 32:20,	34:2, 34:18, 35:8, 40:11, 47:18, 59:13, 60:3, 62:13, 62:16, 64:5, 66:19, 66:21, 69:9, 81:21, 83:22, 87:4, 90:3, 92:22, 98:15, 101:3, 103:6, 103:11, 106:1, 106:6, 106:18, 118:16, 118:17, 126:7, 127:21, 131:1, 131:4, 135:13, 136:14, 140:1, 149:12, 151:15, 154:3, 157:14, 160:22, 162:1, 164:6, 164:22 against 38:20, 47:7, 48:10, 77:11, 94:11, 98:21, 102:7, 153:1 ago 16:12, 49:21 agree 9:8, 27:21, 34:21, 58:4, 90:4, 99:14, 100:9, 100:15, 133:3, 157:17, 165:5 agreed 5:2 agreeing 21:17 ahead 23:21, 49:15, 94:6, 122:14, 140:20, 149:1, 149:3 aim 60:8, 60:9, 60:10 aimed 107:4	air 12:9, 13:8 align 156:8, 157:15 all 11:2, 15:9, 15:21, 17:14, 34:14, 35:15, 42:6, 51:2, 56:13, 56:18, 57:9, 57:11, 57:19, 59:17, 60:3, 61:15, 65:6, 66:9, 68:7, 68:19, 68:20, 69:1, 69:15, 83:12, 95:6, 95:16, 103:3, 105:15, 109:2, 119:7, 135:5, 135:16, 137:2, 147:4, 155:1, 156:17, 156:20, 160:1 alleged 89:11, 89:17, 93:20, 93:21, 101:17, 102:4 allow 33:3, 38:12, 52:22, 55:1, 79:4, 79:17, 100:10, 100:16, 153:14 allowed 132:20, 134:8 allowing 100:11 allows 49:7, 96:3, 125:19, 139:7, 140:8 almost 48:21, 148:14, 148:17, 149:16, 149:17, 165:9 along 21:2, 153:16,

156:17 already 56:12, 56:21, 82:13, 159:5 also 8:17, 20:10, 20:19, 32:7, 43:9, 51:10, 56:7, 56:18, 60:22, 65:3, 80:2, 80:11, 82:8, 84:1, 89:7, 101:14, 101:21, 102:1, 102:3, 122:9, 124:7, 125:21, 132:12, 133:17, 140:16, 158:22 alter 168:20 alterations 146:17, 153:6 although 85:5, 111:16, 139:5 always 26:5, 53:5, 89:6 ambiguous 31:21 amount 31:10, 143:10 analogous 86:14, 86:21, 87:10, 87:13 analysis 164:22, 167:3 anatomy 104:5 anchor 136:18 angle 150:16, 154:7 angles 150:14, 165:2, 170:4 angular 112:19, 112:21	another 8:22, 14:19, 16:14, 20:20, 21:3, 91:12, 107:15, 120:6, 120:7, 126:13, 134:15, 140:8 answer 21:16, 37:8, 69:8, 92:12, 92:13, 109:1, 140:10, 152:1, 154:17 anticipated 98:9 anton 3:6 any 22:13, 27:8, 28:2, 32:9, 34:21, 35:17, 38:2, 46:16, 54:11, 57:19, 77:16, 84:4, 98:8, 106:13, 109:4, 121:9, 151:11, 171:20, 171:22 anyone 63:8, 91:1 anything 29:11, 31:15, 103:19, 104:2, 105:1, 143:10 anyway 13:4, 80:10, 84:15, 104:11 apart 146:2 apologize 84:6, 84:19, 103:10 appeal 1:3 appear 146:18 appears 12:19, 157:20	apples 38:10 appliances 104:11 application 59:18, 64:1 applications 13:17 applicator 112:15, 112:17, 116:3 applied 72:12, 73:3, 73:21 apply 108:18 applying 5:16 approach 37:2, 47:5, 109:3 approached 27:7, 27:18, 27:22, 32:8, 32:10, 32:11, 32:14, 32:21, 33:1, 33:8 approaches 35:2 appropriate 66:5 approximately 156:12, 165:16, 165:19, 167:4, 168:9 approximation 150:18, 165:4 arc 149:17, 155:4, 155:9, 155:11, 155:14, 155:17, 156:13, 156:18, 157:2, 157:9, 157:10, 157:14, 158:11 arcs 157:22 area 104:4	arm 45:22, 80:13, 81:15, 126:12, 126:13, 126:18, 127:11, 138:17, 156:1, 156:6, 157:16 arm's 29:10, 45:4, 45:7, 45:11, 46:2, 59:15 armed 127:11 arms 137:13, 139:18, 155:14, 155:22, 163:21 around 18:3, 97:5, 115:10, 124:6, 125:20, 125:21, 127:4, 128:21, 128:22, 129:1, 143:15, 145:12 arrived 15:22 arriving 16:20 art 28:6, 29:7, 29:18, 30:7, 30:19, 31:2, 31:4, 34:6, 47:10, 59:9, 104:10, 111:20, 122:7 aside 109:6 asked 19:19, 34:5, 91:1, 92:4, 96:7, 109:18, 148:20, 163:5 asking 150:13 assemblies 18:7, 22:14, 117:2
---	--	---	---

assembly 19:1, 22:6, 23:7, 39:15, 44:5, 46:20, 86:6, 112:3, 122:22, 137:10, 137:15, 143:19, 143:21, 162:11	145:12 B	beauty 63:10	59:6, 105:4, 119:4, 170:3, 171:8, 171:9
assessment 16:18	back 11:13, 16:11, 25:1, 25:6, 25:7, 25:16, 32:19, 49:18, 69:20, 78:17, 79:16, 80:4, 80:7, 80:9, 80:21, 84:15, 85:12, 91:16, 95:17, 98:1, 103:7, 107:14, 109:7, 125:22, 143:14	because 13:6, 15:16, 21:21, 36:11, 37:2, 37:15, 41:20, 42:2, 42:5, 46:1, 46:3, 46:10, 46:12, 52:5, 53:14, 54:3, 55:16, 62:4, 62:17, 65:20, 69:9, 71:10, 71:21, 75:5, 88:10, 89:11, 89:19, 92:14, 93:4, 103:14, 106:19, 108:6, 114:12, 115:18, 116:2, 116:10, 118:7, 118:12, 120:21, 121:2, 121:5, 121:15, 127:21, 129:1, 131:21, 134:14, 136:15, 141:4, 142:8, 143:3, 145:6, 145:18, 149:16, 150:3, 159:5, 159:7, 159:20, 160:16, 160:17, 162:1, 164:1, 164:12, 165:6, 166:3, 169:10	begin 150:14 beginning 27:2, 103:22, 145:14, 146:4, 149:22, 151:10 behalf 3:3, 3:10 behind 142:16 being 32:7, 32:10, 33:1, 33:12, 71:18, 76:2, 105:20, 108:16, 108:21, 113:1, 113:14, 113:21, 114:1, 116:8, 150:9, 170:8
assistants 66:10	bacon 3:12	been 5:4, 6:20, 10:14, 11:9, 14:4, 16:11, 48:17, 51:9, 75:3, 79:22, 89:18, 125:10, 165:8	believe 8:14, 10:9, 33:13, 34:8, 55:20, 56:12, 57:14, 68:13, 78:11, 80:2, 85:13, 85:22, 87:2, 88:4, 90:11, 102:1, 102:12, 125:4, 126:6, 130:12, 130:19, 136:14, 136:15, 137:2, 137:18, 147:5, 150:8, 155:4, 158:22, 162:13
assume 98:20, 102:22, 122:13	bag-like 78:16	beer 36:22, 37:1, 37:14, 38:9	below 40:10, 164:4, 167:22
assumed 98:5	bar 36:22, 37:5, 37:12	before 1:3, 2:9, 37:8,	beneath 160:13
assuming 126:2	base 119:18, 120:1, 120:5, 120:8, 120:19, 120:20, 121:2, 121:3, 136:7, 137:10, 142:21		best 42:18, 43:4, 103:9, 168:5
attorney 171:21	based 42:14, 73:19, 107:6, 154:6, 154:13, 166:15		bet 170:9
author 82:16	bases 142:19		
authored 17:10	basic 54:7		
automatically 84:1	basically 20:11, 116:11, 118:2, 150:13, 154:20, 156:5		
aware 8:18, 11:4, 126:16	bear 10:21, 11:22, 69:21, 73:11, 79:21, 80:5, 107:19, 155:12		
away 22:9, 23:4, 46:5, 46:19, 47:15, 93:9, 117:12, 127:11, 162:11, 163:4, 163:6			
awful 103:17			
axes 21:15, 112:2, 114:6, 114:16, 118:22, 119:6, 119:9, 122:21, 128:1, 138:3, 138:11, 138:12, 138:22, 139:10, 143:12, 144:16,			

better 117:17, 169:9 between 5:13, 8:22, 9:9, 11:19, 12:3, 12:14, 13:1, 13:22, 14:11, 16:13, 32:9, 50:17, 86:8, 93:5, 100:20, 112:18, 113:10, 133:8, 153:5, 158:13, 163:14, 167:6, 167:20, 168:15 beyond 102:18 big 17:22, 112:7, 112:10, 125:8 bigger 106:21, 151:18 binder 108:4, 108:7, 112:7, 112:10, 125:7, 125:8, 136:22 binders 17:22, 73:12 bit 26:2, 49:21, 98:17, 101:2, 164:18, 169:16 bite 52:5, 52:13, 53:15, 53:22, 60:16, 60:22, 61:6, 61:11, 61:16, 61:19, 62:4, 62:7, 63:2, 63:9, 63:15, 64:4, 64:9, 65:3, 65:15, 66:4, 67:4, 78:8, 78:9, 80:11, 83:21, 83:22, 84:14, 84:16,	84:18 bite-actuated 51:9, 51:18, 52:1, 52:4, 52:12, 52:15, 53:4, 53:8, 54:3, 56:14, 56:18, 57:4, 57:6, 57:12, 62:10, 62:17, 63:14, 63:20, 64:21, 65:10, 66:14, 66:22, 71:4, 83:5, 83:15, 83:18, 84:3 bites 84:21 biting 60:16, 61:9, 62:18, 63:16, 63:20, 65:8 bitten 62:12 bladder 80:6, 80:12, 80:20, 81:15, 82:12, 84:8, 84:13 blood 171:20 blue 123:14, 123:17, 124:18, 129:19, 130:2 board 1:3, 73:1, 74:8, 74:14, 74:19, 74:20, 89:16 board's 72:2, 72:3, 72:20, 73:8 bockius 3:5 body 18:12, 19:13, 20:12, 21:22,	22:5, 109:15, 109:22, 119:10, 127:5 both 10:3, 11:5, 11:15, 14:15, 17:10, 41:18, 55:5, 61:4, 63:4, 64:2, 102:3, 114:11, 114:13, 114:22, 115:2, 116:3, 116:6, 128:1, 133:21, 139:10, 144:15 bottle 28:19, 29:4, 31:14, 31:15, 33:14, 34:9, 34:10, 34:14, 34:16, 35:3, 35:5, 36:17, 37:9, 38:8, 38:11, 45:7, 45:11, 45:13, 47:13, 47:15, 49:3, 52:21, 53:1, 53:3, 53:6, 55:1, 55:3, 55:20, 57:18, 57:19, 59:21, 60:1, 60:3, 60:4, 61:8, 63:9, 64:13, 64:22, 65:11, 66:1, 66:13, 66:15, 67:1, 67:8, 67:10, 67:12, 82:10, 91:22, 97:10, 100:11, 108:22, 143:1, 161:3 bottles 60:6, 63:18, 63:19, 66:11 bottom 51:3, 56:10,	61:21, 64:22, 116:14, 128:5 boulevard 3:6, 3:13 bracket 142:14 brands 1:5 break 49:15, 91:8, 91:11, 125:14, 129:5, 170:8 brief 8:6 briefly 17:19 bring 10:6, 36:11, 46:4, 118:7 broad 110:13 broader 19:6, 23:12, 24:4, 37:19 broadly 18:10, 109:12, 109:19 brought 102:12 bump 65:20 button 36:5, 36:15 buy 53:3 C california 3:7 call 6:4, 7:20, 8:6, 20:21, 41:1, 49:7, 52:8, 52:12, 54:17, 58:2, 58:7, 58:18, 62:17, 64:3, 64:4, 67:7, 71:15,
---	--	---	--

85:22, 114:10, 115:4, 115:11, 118:3, 118:10, 120:20, 123:9, 130:20, 133:5, 133:6, 136:7, 140:2, 142:17, 143:2, 146:11, 147:6, 161:5 called 44:16, 53:20, 54:2, 54:5, 64:5, 122:6, 123:5, 146:10 calling 52:9, 58:6, 84:16, 87:19, 159:3 calls 39:7, 40:18, 42:2, 57:12, 80:11, 83:18, 115:6, 115:15, 124:4, 130:10, 130:17, 131:3, 131:7, 131:14, 142:20, 154:7 came 98:2 camelbak 1:8, 5:14, 9:1, 69:14, 70:8, 70:16, 71:7, 171:13 camelbak's 96:21 camping 81:18 can't 22:4, 23:6, 36:13, 45:21, 47:22, 89:9, 93:17, 98:15, 100:3, 158:15, 160:2 cannot 67:10, 96:1 cap 18:7, 39:15,	44:4, 46:20, 86:6, 137:10, 143:19, 143:21, 145:15, 163:22 car 66:4, 138:6 care 107:8 cared 107:11 careful 133:14 carried 78:17, 79:5, 79:10, 79:14, 81:9, 82:4, 84:4, 85:1, 85:4 carry 80:13 carrying 80:9, 81:15 case 5:20, 6:13, 24:17, 30:10, 30:11, 38:8, 85:11, 94:14, 112:6, 118:16, 122:14, 128:3, 129:15 cases 138:1 cat 90:18, 90:21, 91:3 caused 153:20 causing 50:5, 87:18 cavity 103:1, 104:8 celebrating 59:20 centimeter 46:5 certain 42:2, 58:19, 126:4, 156:12 certainly 22:4, 62:3,	64:18, 65:2, 100:22, 111:16, 115:17 certificate 171:1 certified 171:3 certify 171:5, 171:12, 171:15, 171:19 cetera 33:12, 35:13, 143:17 chair 123:3, 123:5, 123:6, 123:13, 126:18, 128:6 challenge 166:3 chamber 68:2 champagne 59:21, 60:4, 60:9, 60:10, 66:1, 122:4 champions 65:22 championship 59:20 change 63:3, 74:8 changing 23:15 chat 6:19, 7:11, 7:17, 10:7, 10:12, 73:9, 75:22, 107:21, 112:6, 122:14, 129:15 check 12:1, 13:8, 55:21, 68:18, 78:11, 92:2, 102:14, 130:19, 155:10, 167:13 cheek 91:19, 91:20,	92:1, 92:8, 95:7, 95:19 choi 135:4 choose 100:18 chose 150:5 circle 18:14, 109:16, 110:2, 158:2 circular 157:18, 157:22 circumstances 58:19, 58:22 citation 56:6 cite 50:21, 56:7, 69:22, 76:1 cited 56:5, 56:10, 111:6 city 3:14 claim 9:9, 9:20, 10:1, 39:4, 39:7, 41:8, 41:10, 41:16, 41:19, 43:9, 44:16, 44:20, 45:1, 73:19, 143:13, 143:14, 166:8, 166:15, 166:17, 167:8 claim-by-claim 15:14 claim-wise 15:15 claimed 15:18, 29:16, 30:2, 30:18, 85:19, 100:10, 166:9, 166:10, 168:22 claims 8:16, 9:6,
--	---	--	---

9:14, 9:16, 11:12, 14:15, 14:19, 14:20, 15:10, 15:18, 16:9, 25:18, 29:14, 30:13, 40:17, 42:4, 46:14, 46:21, 48:13, 49:2, 111:16, 166:3 clarification 19:19, 25:9, 90:6, 92:4, 109:18, 148:20, 163:5 clarifies 40:10 clarify 74:12, 74:16, 82:9, 138:5, 141:4 clarity 74:19, 164:3 clear 33:2, 67:21, 141:5, 146:16, 152:3, 157:8, 157:9 clearer 162:7 clearest 101:4 clearing 14:2 clearly 119:3, 135:15 clockwise 147:8, 147:16, 147:20, 159:15, 165:17, 167:5, 167:15, 167:19, 167:21, 168:3, 168:9, 169:6 close 26:7, 31:5, 42:11, 48:20, 58:9, 59:2, 60:2, 73:6,	91:9, 93:17, 103:3, 106:6, 165:4, 165:10, 170:8 closed 97:21, 97:22, 99:15, 100:4, 101:5, 134:4, 145:15, 146:14, 157:12 closed-lip 100:2 closely 149:5 closes 103:14, 107:13 closing 86:7, 143:12 collapsed 51:13 colored 129:19, 129:22 column 12:7, 12:9, 12:11, 12:13, 12:20, 13:11, 13:13, 13:17, 39:5, 39:10, 50:21, 50:22, 51:2, 51:7, 56:10, 60:18, 61:21, 78:13, 78:20, 78:21, 79:3, 80:15, 82:22, 119:14, 143:15 combination 119:10, 162:2, 166:21 combine 141:22 combined 144:15, 153:11, 165:20, 166:5 come 27:18, 43:18, 61:10, 69:17, 72:21, 77:4,	77:9, 77:14, 99:1, 121:22 comes 37:6, 143:7 comfortable 15:14, 104:5 commencement 171:8 commencing 171:17 commission 171:30 common 9:8, 12:4, 14:10 commonsense 48:5 comparable 159:17, 163:1 compare 14:15, 34:16, 36:19 comparison 13:1, 15:10, 15:15, 16:13 comparisons 38:2 compartment 154:8 complete 83:10 completely 38:1 complex 166:4 complicated 22:15 component 20:14, 20:16, 27:4, 33:5, 36:19, 48:4, 52:10, 52:21, 55:1, 55:4, 68:7, 69:16, 72:17, 79:10, 87:16, 114:22, 115:9, 116:18, 117:5, 117:8,	117:20, 120:6, 120:7, 120:12, 124:6, 125:2, 125:3, 128:5, 133:6, 133:7, 133:9, 133:11, 134:10, 134:16, 162:9 components 22:3, 22:17, 68:1, 116:19, 135:17, 144:8, 144:14, 147:17, 147:21 compound 117:2, 137:19, 137:21, 138:3, 138:6, 165:20, 166:19 compressible 55:22 compressing 63:21 concerned 108:15, 108:20, 109:2, 118:3, 118:5, 118:14, 152:13, 152:20 conclude 97:2 concluded 170:17 conducted 1:15, 2:1 conduit 39:8, 39:11, 39:13, 39:14, 39:19, 40:13, 41:2, 41:6, 41:9, 41:12, 41:16, 41:18, 42:1, 42:7, 42:10, 42:17, 42:21, 43:1, 43:5, 43:10, 43:13, 43:21, 44:3, 44:7, 44:11, 44:17,
--	--	--	---

45:2, 45:8, 51:17, 55:8, 55:12, 58:2, 58:8, 58:19, 59:1, 59:2, 62:2, 86:6, 86:8 configuration 86:11, 116:17, 128:9 configured 27:5, 33:5, 43:7, 143:16, 154:20 configures 51:12 confirm 7:1, 7:6, 10:17, 56:13, 160:22 confuse 52:9 confusing 26:8, 131:21, 167:22 connected 21:3, 21:4, 21:10, 42:6, 81:3, 111:12, 116:20, 117:9, 123:5, 123:7, 128:5, 129:2, 132:3, 142:22, 143:21, 169:10 connection 6:1 connects 123:13 consensus 34:15 consider 30:12, 31:17, 31:22, 32:5, 47:2, 47:19, 59:16, 59:22, 103:20, 104:10, 134:21, 135:1 consideration 16:2, 16:21,	35:18, 38:5, 38:13 considered 27:14, 28:5, 29:20, 31:7, 35:11, 36:10, 37:15, 42:1, 69:18, 70:10, 75:1, 102:19, 105:4, 134:22 consistency 16:14 consistent 9:20, 16:22, 17:5, 35:14, 72:8, 132:1 consistently 9:11, 11:19, 14:11, 15:11, 16:4 constant 18:14, 109:16, 110:2, 150:1, 155:9, 158:5 constitute 34:8 constitutes 22:21, 85:19, 111:4 constrained 149:5 construction 69:15, 70:17, 71:8, 72:3, 72:9, 72:20, 73:19, 74:9, 166:16 constructions 83:6 construed 9:10, 14:11, 28:16 construing 16:2 consumer 30:10, 36:16 consuming 26:19	contact 27:13, 27:16, 37:17, 44:12, 48:12, 49:9, 64:12, 64:16, 65:14, 66:6, 68:1, 68:8, 68:22, 69:5, 69:12, 69:17, 70:9, 70:14, 70:18, 70:20, 72:16, 72:22, 73:5, 73:7, 74:4, 74:9, 74:18, 74:22, 75:7, 77:4, 77:10, 77:14, 78:4, 85:2, 87:16, 87:19, 88:6, 88:21, 89:15, 90:10, 90:12, 90:14, 92:18, 94:14, 94:16, 95:1, 95:7, 95:14, 95:22, 96:3, 96:4, 96:16, 97:1, 99:19, 101:7, 101:13, 102:5, 107:17, 153:17, 157:6, 158:12 contacted 67:22, 68:12 contacting 38:19, 71:1, 71:11, 77:17, 88:16, 92:14, 92:19, 92:22, 93:1, 93:3, 96:10, 101:10, 101:18, 105:7, 106:13 contacts 88:1, 88:8, 89:19, 92:2, 93:19, 94:2, 94:7, 94:9,	107:9, 154:9, 158:14 container 12:12, 39:12, 50:5, 51:11, 51:13, 51:14, 51:16, 56:20 containers 38:9, 106:7 contend 14:21, 15:4, 85:18, 87:8, 87:10, 90:13, 169:21 contending 86:19 context 18:7, 74:7 continuation 8:13 continuations 13:6 continue 53:16, 54:6, 64:6, 147:15, 158:21 continued 63:2 continuous 156:13, 156:14 controls 86:7 converse 57:14 convolute 145:18 copies 7:10, 7:19 copy 7:3, 10:10, 76:9 correctly 21:16, 140:11, 141:18 corresponds 87:6 costa 3:7
--	--	---	---

could 10:16, 15:19, 17:20, 19:2, 20:13, 20:19, 21:3, 26:10, 31:3, 31:12, 31:15, 31:20, 33:14, 33:15, 34:6, 34:9, 34:17, 35:3, 35:5, 35:9, 35:16, 36:11, 37:1, 38:18, 38:19, 38:20, 39:3, 42:1, 44:17, 44:19, 50:1, 50:20, 53:2, 53:20, 53:22, 54:5, 58:1, 58:7, 58:18, 59:1, 59:15, 59:22, 60:21, 61:14, 61:15, 62:9, 62:20, 64:5, 65:3, 67:6, 67:9, 67:13, 77:12, 81:14, 81:16, 82:14, 84:14, 88:15, 88:18, 89:6, 89:21, 95:18, 95:20, 99:21, 101:9, 101:15, 102:3, 105:14, 106:1, 106:17, 107:14, 112:5, 119:12, 125:21, 126:22, 127:1, 129:8, 133:15, 144:3, 150:16, 151:9, 151:15, 154:14, 154:21, 162:6, 169:16 couldn't 84:10, 99:14, 145:19, 150:4, 158:20	counsel 5:3, 171:13 count 5:14 counterclockwise 162:14, 165:20, 168:4 county 171:32 coupled 40:22, 130:3, 130:14, 131:14, 132:9, 143:18 course 94:7, 103:14 court 19:19, 58:11, 90:19, 92:4, 109:18, 148:20, 163:5 court's 72:9 cover 8:20, 142:13 covered 66:1, 77:15 cracked 98:17 create 141:22, 153:12 crimp 86:9, 160:6, 160:12, 160:13 critical 120:21 crosstalk 13:10, 23:18, 30:15, 34:1, 37:18, 40:9, 45:20, 59:12, 75:13, 81:20, 94:3, 167:1 csr 1:22 cup 36:5, 36:9, 37:21 currently 105:18	curvature 156:7, 156:9, 156:11, 156:14, 156:16, 157:1, 157:2, 157:19, 158:4, 158:11 curve 157:21 curved 155:18 cut 84:10, 110:20, 164:12 cylinder 138:8	162:21, 165:13, 166:10 declarations 17:15 define 43:22, 47:4, 47:11, 56:9, 144:1, 149:19, 151:6, 152:11 defined 19:17, 20:4, 21:20, 22:3, 41:2, 42:15, 43:7, 52:4, 116:19, 131:18, 138:13, 138:17, 140:15, 142:1, 150:8 defines 44:3, 76:17, 86:5, 131:3, 131:6, 131:9, 131:11, 131:19 definitely 95:8 definition 20:9, 20:18, 21:14, 35:1, 36:10, 37:2, 44:18, 45:12, 47:14, 47:19, 48:5, 48:16, 59:8, 106:2, 106:4, 106:5, 106:8, 110:10, 110:14, 135:1, 142:11 definitions 38:22, 105:19, 106:9, 118:18 degree 126:2, 139:6, 140:8, 147:8, 147:12, 150:3, 150:4, 150:5, 158:10, 159:6, 159:14, 161:19, 164:19
D			
daughter's 90:21 day 95:5, 131:5, 171:27 decision 72:3, 72:10, 73:9, 73:17, 90:2 declaration 6:12, 6:16, 7:20, 7:21, 8:5, 8:7, 17:10, 17:11, 17:21, 19:12, 24:14, 25:7, 25:10, 25:11, 25:16, 26:11, 38:17, 47:3, 47:12, 47:19, 50:2, 67:14, 74:12, 75:12, 85:13, 85:14, 90:5, 96:19, 97:17, 102:2, 108:5, 109:8, 112:11, 119:13, 124:13, 124:17, 124:21, 129:9, 136:21, 148:2, 153:10, 155:3, 160:3,			

degrees 116:5, 120:9, 147:16, 147:20, 150:9, 150:17, 151:1, 151:6, 151:13, 152:12, 159:1, 159:2, 159:10, 162:15, 162:16, 162:17, 163:9, 164:17, 165:17, 165:19, 167:5, 167:13, 167:14, 167:16, 168:3, 168:9, 169:6 deliver 81:5 delivery 27:5, 33:6, 76:20 demonstrate 119:8, 152:17, 153:11, 165:1 demonstrated 159:16, 166:21 demonstrates 116:18, 121:10, 164:14 demonstration 159:8, 160:5, 161:16, 161:18, 161:22, 162:8, 162:22, 163:8, 163:14, 163:19 demonstrations 165:14 demonstrative 97:16 dependent 29:2, 47:15, 59:1 depending 15:18, 21:8, 34:17, 35:16, 58:3, 58:8, 60:1, 127:9, 133:18, 133:22 depends 9:14, 42:11,	59:5, 59:17, 66:3, 95:3 depict 106:12, 111:11, 145:12 depiction 144:14 deposed 6:11, 90:22 deposition 1:14, 2:1, 5:13, 6:8, 6:15, 70:2, 70:7, 128:12, 170:17, 171:6, 171:8, 171:9, 171:14, 171:15 depositions 5:18 describe 30:13, 106:12, 106:19, 144:8, 153:10 described 36:20, 38:17, 51:9, 53:7, 55:6, 86:15, 143:20, 145:4 describes 41:17, 55:11, 57:17, 61:17, 71:17, 78:16, 79:9, 81:8, 129:18, 129:21 describing 117:10, 123:3, 123:6 description 9:5, 11:17, 14:8, 30:22, 42:17, 54:13, 60:13 design 34:13, 34:17, 34:21, 47:1, 47:2, 61:3, 64:3, 79:17, 80:10	designed 37:16, 37:20, 38:3, 38:12, 48:6, 52:16, 52:18, 52:22, 55:1, 55:5, 59:7, 60:4, 60:22, 61:13, 81:9, 84:3, 85:4, 95:21, 96:1, 96:2, 96:3, 96:9, 96:15 designing 154:21 designs 34:19, 35:10 desire 60:10 desk 127:3 desks 127:3 detail 40:17, 41:6, 41:21, 42:5, 44:1, 44:22, 55:14, 56:10, 108:18 details 109:3 determination 48:3 determine 74:1, 90:4, 90:7, 153:15 determined 74:20, 89:16 device 37:9, 121:20 devise 32:17 dexterity 59:15 dictionary 105:19, 106:2, 110:9 differ 31:5, 116:22	difference 12:3, 31:12, 32:9, 34:6, 133:8 differences 15:19, 163:14, 163:18, 165:5 different 9:6, 9:15, 9:16, 12:17, 13:15, 14:22, 15:5, 21:5, 21:15, 22:7, 22:16, 22:17, 23:2, 23:8, 23:10, 24:18, 25:11, 25:18, 28:7, 31:12, 33:18, 33:20, 34:18, 35:10, 35:16, 38:1, 38:21, 38:22, 42:3, 44:20, 52:10, 52:11, 54:8, 64:1, 66:13, 114:6, 115:18, 116:5, 118:9, 119:9, 120:18, 127:22, 135:17, 141:7, 150:16 differential 13:22 differently 24:10, 169:17 differs 89:2, 134:9 digging 126:1 dimensions 153:14, 154:1, 154:14, 154:18, 155:2 diminish 168:21 direct 72:16, 73:4 directed 112:14, 163:3,
---	--	--	---

163:6 direction 115:12, 116:22, 133:19, 133:22, 147:16, 169:7 directions 115:18, 120:18 directly 146:22 dirty 63:13 disagree 105:20 disclosed 83:9 discloses 50:4, 68:1, 112:1, 122:20 disclosure 75:18, 83:9 disclosures 83:11 discuss 40:1, 40:2, 56:9, 69:20, 71:14, 72:2, 119:6, 120:18, 129:9, 135:15 discussed 5:17, 22:8, 25:8, 42:16, 43:8, 47:3, 51:10, 53:14, 59:6, 75:20, 95:5, 95:18, 159:5 discusses 45:1, 70:6 discussing 10:4, 63:1, 106:22 discussion 25:17, 42:15, 51:8, 54:4, 54:6, 54:16, 58:11, 64:6, 82:3, 82:17, 83:19, 105:6,	138:9, 141:7 dispense 28:10, 28:21, 29:9, 37:21, 38:21, 50:6, 53:4, 60:19, 80:3 dispensed 39:15, 41:4, 43:3, 43:22, 44:8, 60:15, 66:7, 100:14 dispenser 37:14 dispensers 38:10 dispenses 36:1, 41:13, 54:21 dispensing 26:16, 28:10, 29:16, 35:13, 36:8, 36:18, 36:19, 37:1, 39:13, 39:19, 40:13, 43:9, 43:13, 43:16, 43:19, 44:10, 45:9, 46:19, 47:6, 50:15, 55:8, 71:2, 71:9, 71:12, 76:5, 76:17, 76:19, 77:4, 77:6, 77:9, 77:15, 77:20, 78:9, 86:13, 86:14, 86:21, 87:7, 87:9, 87:10, 87:12, 87:15, 97:7, 97:9, 156:2, 157:13 displacement 116:21 distal 86:1, 87:3, 87:6, 89:7,	89:15, 93:20, 116:19, 117:8, 117:11, 117:19, 120:12, 133:5, 133:7, 133:9, 133:11, 134:9 distance 28:16, 29:6, 29:8, 29:12, 29:22, 30:4, 30:9, 31:9, 31:18, 31:19, 32:14, 32:18, 45:15, 46:7, 47:21, 49:5, 88:13, 88:18, 153:15, 158:13 distances 46:16 distinguish 44:9 document 11:10, 11:14, 12:2, 53:13, 55:18, 108:12 doing 5:10, 15:14, 65:6, 125:9 done 34:3, 37:13, 40:12, 45:22, 85:8, 156:5, 170:8 door 93:12, 93:15, 93:16 doorway 93:10 double 68:18, 155:10, 167:13 down 40:2, 40:10, 40:19, 51:3, 78:8, 90:21, 108:22, 127:11, 133:15, 138:8, 167:22	download 10:16 downloaded 10:22 downstream 13:18 dozens 106:8 dr 4:5, 5:8, 10:9, 17:9, 25:22, 49:18, 56:21, 58:16, 91:16, 98:10, 109:5, 110:3, 170:11, 171:5, 171:16 draft 37:1 draw 65:4, 79:6, 101:5 drawback 17:22 drawings 125:1, 125:2 drew 155:21, 157:9 drink 12:12, 28:18, 31:15, 35:22, 36:8, 37:14, 37:21, 37:22, 38:9, 38:11, 39:12, 39:14, 51:17, 52:21, 53:1, 55:2, 59:22, 62:1, 79:17, 94:21, 95:12, 98:21, 99:4, 99:15, 100:4, 100:11, 101:9, 101:10, 101:15, 101:17, 103:17, 107:16, 143:8 drinking 26:18, 69:18, 71:10, 77:20,
---	--	--	--

86:7, 86:13, 89:12, 104:11, 106:7 drinks 36:1 driving 65:19 drop 75:22, 112:6 due 23:8, 133:2, 134:8 duly 5:4, 171:7 duplicate 164:11 during 27:7, 28:1, 32:21, 33:8, 97:1, 143:12, 148:4, 155:5, 155:18, 156:22, 158:6	128:14, 128:15, 128:20, 128:22, 129:2 easily 54:5 easy 26:9 editor 146:6 effect 164:5 eight 13:21 either 33:11, 52:5, 61:5, 61:13, 61:16, 65:7, 84:12, 98:7, 100:6, 119:3 electronic 10:11 element 86:1, 86:5, 86:12 else 37:21, 91:2 embodiment 28:8, 33:15, 33:16, 33:21, 35:17, 49:6, 49:7, 49:12, 52:14, 52:20, 53:7, 53:18, 53:20, 55:6, 57:17, 57:21, 59:6, 60:5, 70:21, 71:16, 102:13, 111:15 embodiments 33:18, 35:19, 49:20, 50:4, 50:11, 50:14, 51:10, 52:1, 54:22, 55:17, 56:8, 56:14, 57:9, 57:11, 58:5, 58:17, 60:12, 60:14,	62:11, 68:19, 88:10, 95:6, 111:11 employed 171:21 enable 79:5 encase 27:9 encases 28:2 encompasses 76:16 end 22:7, 22:8, 26:17, 33:6, 33:10, 43:2, 43:6, 45:2, 48:20, 55:11, 55:12, 58:2, 58:7, 58:18, 58:22, 59:2, 74:2, 75:6, 81:3, 86:1, 86:11, 90:9, 99:18, 119:11, 130:3, 130:14, 132:2, 140:5, 144:3, 145:16, 146:3, 146:4, 149:16, 153:12, 155:14, 156:1, 161:14, 168:14 ended 161:18 ends 43:3, 43:21, 155:22 engage 114:14 engages 112:18, 113:9, 127:16, 135:9, 168:8, 169:5, 169:22 engaging 115:22, 120:13, 136:11	engine 138:7 engineering 32:16 enough 28:20, 29:12, 30:1, 30:17, 59:16, 76:11, 79:4 enter 39:13, 92:3, 92:5, 93:22, 94:12, 94:18 entering 94:17, 104:4 enters 91:20 entire 106:20 entirely 97:5, 148:14, 148:17 entirety 9:17, 14:15, 68:7, 69:16 entryway 93:11 equal 158:12, 158:18 equally 62:6 equivalent 99:22 esophagus 103:22, 104:3 esquire 3:4, 3:11 est 1:17, 170:17 established 56:22 et 33:12, 35:13, 143:16, 143:17 even 22:10, 22:17, 22:22, 37:19, 40:1, 52:20,
E			
each 15:10, 16:15, 16:17, 17:7, 21:8, 21:13, 23:6, 136:5, 145:19 earlier 8:15, 23:11, 24:1, 33:13, 42:15, 45:3, 75:21, 91:1, 95:18, 102:12, 109:10, 161:1, 170:4 early 95:5, 149:4, 149:14, 149:19, 150:8, 150:18, 151:3, 151:7, 152:4, 152:10, 158:7 earth 128:10, 128:11,			

60:8, 77:19, 84:14, 84:17, 91:4, 96:21, 105:11, 106:2, 110:17, 111:5, 115:19, 116:21, 158:6 ever 71:20, 106:11, 128:16, 161:3 every 18:14, 20:15, 68:11, 102:18, 109:16, 110:1, 159:6 everything 17:5, 121:4, 121:17, 148:15 evidently 59:13, 88:19 exact 28:12, 42:4, 135:14, 147:4, 164:10 exactly 12:14, 24:3, 24:16, 25:19, 54:18, 98:2, 104:3, 107:11, 108:18, 118:5, 126:11, 131:6, 164:12 examination 4:6, 5:6 example 9:22, 12:6, 12:7, 12:10, 13:7, 20:13, 20:22, 21:1, 22:16, 23:3, 23:9, 24:14, 28:8, 45:3, 45:16, 46:8, 46:10, 50:3, 60:5, 64:17, 65:15, 65:19, 71:3, 77:11, 78:4, 80:12,	88:12, 95:19, 97:11, 101:4, 111:7, 116:8, 118:7, 118:8, 118:22, 119:7, 126:10, 126:15, 134:14, 134:15, 134:18 examples 35:8, 35:20, 83:5, 119:7 exclude 48:13, 49:3 excludes 48:10, 70:5 exclusively 148:11 excuse 87:18, 114:18, 134:13 exercise 108:9 exhibit 4:9, 4:12, 4:13, 4:14, 4:15, 4:16, 4:17, 4:18, 4:19, 4:20, 6:13, 6:16, 6:20, 6:22, 7:7, 7:13, 7:18, 7:19, 8:3, 8:4, 8:11, 10:15, 10:20, 56:7, 73:14, 75:22, 76:4, 105:17, 107:21, 108:2, 108:14, 109:8, 111:21, 112:5, 122:10, 122:17, 122:19, 129:12, 129:17 exhibits 4:11 exists 153:15 exits 76:18, 97:9	expel 51:18, 62:2 expelled 50:14 expires 171:30 explain 54:18, 74:2, 74:18, 75:5, 90:8, 165:13 explained 24:2 explains 86:5 explanation 141:4 explicitly 121:18 expressly 67:22, 106:12 extend 80:19 extended 45:22, 113:10, 113:13 extension 149:7, 149:13 extent 98:6, 98:22, 99:5, 99:7, 99:8, 113:17, 163:4, 163:7 external 70:15, 76:21, 77:16, 83:6 extreme 46:8, 46:10 F face 28:10, 47:6, 52:6, 52:7, 71:2, 71:3, 71:9, 71:12, 71:18, 76:5, 76:17, 76:19, 76:21, 77:4, 77:7, 77:9,	77:15, 77:20, 78:9, 86:15, 86:21, 87:5, 87:6, 87:7, 87:10, 87:13, 87:15, 89:7, 89:15, 93:20, 94:11, 97:7, 99:14, 99:17, 100:3 fact 23:8, 34:9, 43:1, 87:16, 133:9, 154:14, 168:21 fair 5:18, 6:5, 7:22, 8:1, 17:2, 76:11, 113:20, 139:22, 140:21, 165:22 fairly 114:2, 157:10 familiar 7:14, 35:21, 36:2, 71:5 far 29:3, 35:15, 45:4, 46:4, 46:14, 47:15, 48:1, 95:3, 104:11, 105:5, 117:12 farther 46:19 farthest 22:9, 23:4 fast-food 36:1 fault 30:16, 34:2, 103:6, 157:9 feature 27:3, 27:4, 28:2, 32:22, 65:16 features 21:10, 27:9,
--	--	--	---

33:4 feel 15:13, 24:3 figure 55:19, 56:2, 68:17, 87:21, 88:1, 97:12, 97:16, 97:20, 98:2, 98:12, 99:12, 100:21, 106:10, 106:12, 125:17, 125:21, 132:4, 132:11, 139:14, 141:10, 142:21, 146:13, 146:15, 147:2, 150:5, 150:7, 150:17, 151:17, 152:22, 154:2, 154:4, 154:5, 158:10, 159:18, 159:22, 161:22, 162:4, 163:2, 163:10, 163:15, 164:6, 164:9, 164:16, 167:15 figures 9:5, 11:18, 14:8, 55:16, 118:19, 125:5, 132:8, 132:12, 134:2, 146:21, 148:3, 150:22, 151:1, 151:15, 153:4, 153:6, 153:9, 165:6, 167:7, 168:16 final 161:15, 162:3 financially 171:23 find 10:13, 10:22, 106:1 fine 6:6, 7:8, 7:18 firm 97:19	first 6:12, 7:20, 7:21, 17:10, 17:15, 20:21, 50:21, 53:15, 62:17, 63:2, 67:17, 76:11, 108:3, 109:11, 112:10, 112:18, 112:21, 113:4, 114:3, 115:6, 115:8, 115:15, 115:21, 116:1, 117:21, 120:14, 121:12, 121:13, 121:15, 123:13, 123:17, 123:18, 124:5, 124:18, 124:19, 127:18, 129:18, 130:2, 130:3, 130:7, 130:8, 130:10, 130:13, 130:18, 130:20, 130:21, 131:1, 131:4, 131:7, 131:9, 131:11, 131:13, 131:19, 131:20, 135:9, 135:18, 135:19, 136:11, 141:13, 144:7, 147:10, 147:11, 148:1, 150:6, 152:19, 159:11, 161:22, 166:10 fish 106:21 fits 125:3 five-minute 170:7 fixed 18:13, 19:13, 21:2, 29:12, 31:17, 31:19, 47:21, 109:15, 110:1, 110:14, 116:12, 130:3,	131:14, 134:19, 135:16, 136:15, 136:16, 161:7 flat 121:1, 121:5 flex 133:17 flexibility 140:9 flexible 78:22, 80:6, 81:14, 82:10, 82:12, 82:14 flexing 137:14 float 132:9 floor 114:21 flow 26:17, 65:1, 99:20, 100:12, 100:13, 107:4, 132:14, 133:3, 134:10 fluid 26:17, 26:20, 27:6, 28:21, 29:9, 29:17, 33:6, 36:17, 39:8, 39:11, 39:12, 39:13, 39:14, 39:18, 40:5, 40:13, 41:2, 41:3, 41:4, 41:9, 41:11, 41:16, 42:1, 42:7, 42:10, 42:16, 42:19, 42:21, 42:22, 43:5, 43:10, 43:13, 43:18, 43:21, 44:2, 44:4, 44:7, 44:11, 44:17, 45:8, 50:5, 50:14, 51:10, 51:13,	51:14, 51:16, 51:17, 51:18, 53:5, 55:8, 55:12, 58:2, 60:14, 60:20, 61:9, 62:1, 66:6, 76:17, 78:16, 80:3, 81:5, 81:17, 84:9, 86:6, 97:9, 99:1, 99:4, 99:8, 99:20, 100:8, 100:11, 100:13, 101:2, 101:6, 108:17 flush 35:20 focus 106:7 folks 128:13, 128:14 following 27:2, 97:12, 144:21 follows 5:5 football 66:8 force 132:20, 133:12, 133:16, 134:5 forces 134:21, 135:2 forget 126:11, 142:19 form 9:12, 11:7, 11:21, 14:13, 15:2, 15:8, 16:6, 17:3, 19:20, 20:6, 21:7, 22:1, 23:20, 24:12, 27:20, 32:2, 35:7, 36:12, 38:15, 39:21, 40:15, 42:13,
--	--	---	---

43:15, 44:13, 47:17, 48:8, 52:3, 53:10, 54:15, 56:16, 57:20, 59:4, 60:17, 61:2, 61:20, 62:15, 67:3, 71:13, 79:12, 79:19, 87:1, 91:21, 92:17, 93:7, 93:14, 94:4, 94:5, 95:2, 96:13, 98:14, 102:10, 105:22, 106:16, 107:10, 107:18, 111:14, 114:7, 117:16, 118:1, 119:2, 120:3, 120:15, 121:14, 124:3, 126:19, 127:19, 128:18, 132:16, 134:12, 135:11, 136:4, 136:13, 140:19, 142:3, 145:10, 146:20, 148:13, 150:10, 151:8, 152:7, 153:7, 153:22, 155:7, 155:20, 156:10, 156:19, 158:3, 158:9, 160:8, 160:15, 161:10, 163:17, 164:21, 165:20, 168:11, 169:8 formal 17:4 formed 51:11, 124:8 forms 26:16, 76:20, 86:13 forth 171:7 found 108:11, 125:16	fountain 35:22, 36:9 fourth 5:13 frame 136:16 francart 129:10, 129:12, 129:18, 129:21, 130:10, 130:17, 131:7, 131:14, 132:7, 133:6, 133:8, 135:7, 136:9 francart's 133:11 frankart 135:18 frankart's 134:9 freedom 116:5, 120:10, 139:7, 140:8 freeform-selected 147:6 freely 124:13, 124:17, 132:20, 133:10, 133:12, 134:8 friction 126:3 friday 1:16, 171:16 front 7:3, 7:8, 122:15, 132:7 fry 106:21 full 30:22, 67:17, 76:12, 144:7, 144:17 fully 159:17, 159:19, 162:19, 163:3 function 30:2, 30:3, 46:7, 63:22,	74:17, 80:11, 81:22, 85:5, 96:9 functions 74:3, 75:6, 90:9 fundamentally 139:2 further 72:8, 82:17, 170:12, 171:12, 171:15, 171:19 G gap 100:20 gardner 71:15, 71:21, 75:17, 76:2, 76:6, 76:12, 76:15, 77:3, 78:10, 78:14, 78:16, 79:9, 80:16, 81:8, 82:3, 82:8, 82:9, 82:18, 82:21, 83:16, 83:17, 84:2, 84:7, 84:16, 84:22, 85:8, 85:10, 86:15, 86:21, 87:14, 87:15, 89:3, 89:5 gardner's 77:21, 82:3, 82:10, 84:2, 87:6, 87:10, 89:2 gears 26:2 general 18:22, 19:4, 20:9, 21:7, 23:12, 31:13, 32:5, 34:15, 37:4 generally 64:11	generate 146:17 germs 64:17, 65:15 getting 32:12, 48:20, 91:9 gimp 146:7 give 35:9, 35:20, 60:6, 90:6, 119:7, 154:13, 154:18, 155:1 given 30:22, 32:14, 34:21, 35:17, 164:18, 171:10 gives 40:17, 41:21, 162:3 glenn 1:14, 2:1, 4:5, 5:4, 171:6, 171:16 gnu 146:6, 146:9, 146:10, 146:12 go 7:11, 9:20, 11:13, 12:21, 13:12, 13:13, 13:16, 17:21, 23:20, 25:6, 25:7, 25:15, 25:16, 26:13, 35:5, 39:4, 41:17, 42:5, 42:19, 46:14, 47:22, 49:14, 54:9, 55:13, 58:5, 59:7, 65:21, 67:16, 69:20, 72:1, 75:11, 78:13, 78:20, 80:15, 82:20, 82:22, 94:6, 96:18,
--	---	--	--

106:17, 107:14, 108:17, 109:7, 113:16, 119:12, 122:5, 122:13, 125:6, 125:22, 126:6, 137:6, 140:19, 144:3, 149:1, 149:2, 151:17, 159:13 goes 40:1, 41:6, 42:7, 44:4, 44:5, 72:11, 73:2, 73:5, 73:20, 104:11, 150:19, 157:11, 159:10, 160:1 going 6:19, 7:17, 10:4, 13:18, 26:2, 28:18, 33:11, 41:3, 41:4, 48:17, 59:14, 61:9, 63:6, 63:17, 63:19, 64:3, 65:21, 84:18, 85:15, 91:11, 100:18, 103:9, 122:2, 125:10, 128:2, 128:4, 134:4, 165:3, 165:8 gone 91:4 good 5:8, 5:9, 5:10, 5:12, 7:12, 8:9, 45:18, 48:22, 49:14, 55:16, 91:4, 91:10, 103:18, 125:12, 125:15, 129:4 gotcha 126:14, 162:13 govern 144:16 governed 148:5, 148:11	grand 3:13 graphic's 97:18 gravity 65:1, 132:21, 133:1, 133:10, 133:13, 133:16, 134:9 gray 31:20 great 5:11, 11:2, 78:15, 99:2, 100:9, 118:8, 123:11, 133:4 greater 44:1 green 85:20, 86:20, 87:8, 88:20, 89:11, 89:17, 93:20, 93:21, 94:11, 94:22, 95:13, 95:21, 96:11, 99:19, 101:1, 101:11, 102:6, 106:14, 107:8, 123:19, 127:18, 130:4, 135:10, 138:20, 139:9, 140:11, 140:14, 140:22 ground 5:17 grounded 23:9 group 34:12, 34:20, 145:12, 157:21 guarantee 46:13 guess 16:12, 21:12, 37:12, 60:21, 69:22, 99:22, 102:5, 106:1, 115:8, 125:8,	125:17, 127:10, 133:21, 150:7, 167:22, 168:6 gunk 161:11 H half 42:16, 150:4 hand 73:9, 171:27 handle 112:17, 113:7, 113:20, 114:3, 114:5, 115:7, 117:6, 117:11, 119:17, 119:19 handle's 113:3 hands 79:18 handy 85:11 happen 12:6, 52:11, 76:22 happening 96:17 happens 45:1, 80:7, 127:2, 145:21, 157:15, 161:3 hard 7:3, 7:10, 7:19, 10:10, 46:11, 47:15, 76:9, 80:8, 97:22, 103:17 hardy 3:12 hazard 106:1 head 36:14, 59:21, 78:5, 78:8, 82:13, 121:1 heads 125:11	heard 110:19 heaviest 108:7 heavy 18:1, 107:20, 136:22 held 59:2, 161:7 help 66:15, 67:1 helps 15:17 here 5:22, 8:20, 10:6, 11:8, 15:13, 15:22, 22:13, 35:10, 41:20, 56:4, 68:6, 68:10, 69:3, 73:11, 75:2, 81:13, 90:21, 98:10, 101:16, 108:11, 110:8, 110:11, 120:4, 134:14, 145:21, 150:20, 154:1, 155:11, 164:7, 165:3, 168:2 here's 34:15, 145:20 hereby 83:11, 171:5 hereinbefore 171:7 hereunto 171:26 hey 164:7 highlight 76:8 highlighted 85:20, 86:20, 106:14, 123:14, 123:19, 124:9, 127:18, 130:4, 135:10
---	---	--	---

hike 81:18	I	103:14	156:22, 158:6
hinge 18:11, 22:21, 109:13, 109:20, 110:16, 111:4, 116:19, 118:10, 118:11, 137:11, 138:14, 139:2, 139:6, 139:10, 140:12, 140:16, 140:22, 141:1, 141:14, 141:20, 142:1, 144:1, 169:7	idea 82:10, 82:13, 116:4 identically 20:16 identification 6:22, 8:2, 8:10, 10:19, 73:13, 76:3, 108:1, 122:18, 129:16 identify 141:11 illustrate 148:3 illustrated 87:22, 97:12, 159:16 illustrative 83:4 image 146:6, 146:7, 146:9, 146:10, 146:12, 160:17, 163:8, 163:14, 163:20, 164:13 images 145:3, 146:16, 146:18, 146:22, 147:4, 147:5, 164:2, 165:7 imagine 36:13 imagined 106:10 implicitly 71:20 implied 60:18 important 121:2, 160:19 include 20:9, 22:15, 76:19, 106:3, 126:15 included 34:9, 103:13,	includes 39:11, 39:19, 106:6 including 83:6, 103:21, 104:9, 147:7, 166:5 incorporate 83:15 incorporated 16:16, 17:7, 71:16, 71:21, 75:17, 82:7, 83:11 incorporates 82:2 incorporation 82:21 incorrectly 15:3 increment 150:6 independent 145:8, 162:2 independently 114:8, 125:4, 126:20, 127:13, 149:8 index 4:1 indicate 158:10 indicates 158:20 indicating 155:13 individual 22:3, 127:9, 134:16 individually 16:15, 16:17, 17:8, 21:13, 23:6 initial 148:4, 149:20, 151:2, 151:6, 152:4, 152:9,	initially 6:11, 154:22 inlet 39:11 inner 158:5 insert 94:21 inserted 70:4 inside 65:9, 69:4, 77:12, 77:13, 94:8, 95:14, 95:22, 96:3, 96:4, 96:5, 96:16, 102:8, 102:19, 103:2, 104:9, 104:20, 105:1, 105:11 instance 102:6, 123:22 instances 42:2, 136:2 instead 101:18 institution 72:2, 72:10, 73:8, 73:17, 89:17, 90:1 instructed 97:18 instrument 72:10, 73:20 intake 27:6, 33:7 intend 32:8 intended 27:6, 27:22, 32:20, 33:7, 37:16, 49:3, 62:12, 85:1 intending 83:14 intends 82:5, 107:17

intent 65:13, 65:18, 82:8, 99:12, 152:19, 161:12 intentional 51:15, 61:22, 151:19 interchangeably 67:12 interested 171:23 interface 26:18, 33:11 interior 154:9 internal 12:12, 51:16, 54:20, 61:22, 68:1, 68:2, 69:3, 70:6, 70:9, 83:6 interpret 30:10, 72:15 interpretation 142:9 interpreted 16:4 interrupted 69:9 invention 30:2, 48:3, 106:20, 107:1, 107:4, 107:6, 107:7, 121:20 inventions 121:7 involve 19:11, 19:13 involved 69:2, 133:1, 135:2 involving 119:1 inwardly 51:13 ipr 1:11, 6:1, 6:9, 7:20, 8:5, 8:22,	10:15 iprs 5:13, 5:18 isolating 159:7 issue 16:10, 52:9 it'd 55:22 it'll 47:5 item 74:2, 75:6, 90:9, 114:10 itself 50:17, 55:21, 58:8, 68:11, 69:12, 93:13, 106:11, 121:11, 122:16, 124:7, 127:16, 137:15, 138:21, 145:8, 146:19 J january 1:16, 171:17, 171:27 jason 3:11, 19:21, 40:11, 48:18, 58:14, 125:10, 149:2, 165:8 job 1:20, 29:13, 29:16, 30:18 jobin 69:21, 70:8 jobin's 69:15, 70:2, 70:17, 71:8, 71:19 joint 18:11, 22:21, 109:13, 109:20, 111:4, 116:4, 118:4 joints 110:16, 137:12	judgment 47:10, 151:14, 152:16 juggle 18:3 juggling 125:7 K kansas 3:14 karen 1:22, 2:9, 171:3 keep 85:10, 100:22, 121:1 keeping 101:6 key 27:3, 33:4 kind 19:11, 59:19, 84:8, 109:4, 110:20, 118:4, 121:19, 128:10, 128:11, 145:3, 164:22 kinds 138:10 kinematic 134:22, 135:1, 146:22 kinematics 145:4 kiss 91:19, 92:7, 99:14, 99:17, 99:22, 100:3 kissing 91:22, 92:1 klerekoper 1:22, 2:9, 24:21, 171:3 knowledge 57:16 known 8:17	knows 65:20 L l-shaped 126:13, 127:11 label 143:9 labeled 160:10 lacks 53:8 language 72:16, 135:14 large 88:18, 127:9 larger 162:8 last 25:9, 32:20, 42:16, 116:15, 128:12, 137:6, 144:6, 167:2 later 145:1 laws 20:8 laying 164:19 lead 141:12, 145:14 leak 108:17 least 138:10 leave 40:7 left 131:14 length 29:10, 45:4, 45:8, 45:11, 46:3, 59:15, 80:19, 155:11, 157:15 less 63:5, 63:6 let's 9:22, 10:13,
---	--	---	--

11:8, 11:22, 18:4, 22:7, 28:21, 40:16, 41:3, 44:14, 45:3, 49:14, 51:1, 67:6, 68:18, 69:20, 82:20, 88:7, 102:21, 107:19, 107:20, 109:7, 114:18, 122:5, 125:7, 132:22, 134:2, 134:3, 134:17, 134:20, 154:4, 155:8, 155:12, 155:22, 159:13 lewis 3:5 lid 137:11, 141:13, 141:19, 144:10, 145:15, 147:7, 148:4, 149:7, 149:14, 156:6, 157:16, 160:19, 161:7, 162:6, 163:3, 163:4, 163:6, 164:16, 165:15, 169:11, 169:13 lie 108:22 lies 133:8 lifted 108:6 likely 84:13 likes 90:22 likewise 116:20 limitation 39:4, 39:18, 97:3 limitations 40:2	limited 18:11, 67:21, 68:22, 109:14, 109:21, 110:9 line 12:4, 12:7, 12:9, 12:11, 12:13, 12:14, 12:20, 13:2, 13:11, 13:13, 13:17, 13:22, 39:5, 39:10, 40:19, 40:20, 40:21, 48:21, 49:12, 50:21, 50:22, 51:7, 78:13, 78:20, 78:21, 79:3, 80:15, 82:22, 91:12, 98:9, 98:17, 143:15, 143:18, 155:17, 156:2 lines 13:13, 119:14 link 20:21, 20:22, 21:3, 21:4, 21:6, 21:9, 21:11, 21:13, 22:8, 22:9, 22:12, 23:3, 23:4, 23:9, 129:19, 129:22, 130:2, 130:7, 130:13, 130:14, 132:2, 132:15, 132:19, 133:5, 135:4, 135:8, 135:19, 135:20, 136:6, 136:7, 136:10, 138:7, 152:18 linkage 20:13, 20:17, 20:22, 22:4, 22:18, 111:7, 111:8, 111:12,	111:15, 116:11, 116:20, 117:9, 119:1, 131:17, 132:3, 132:15, 134:16, 136:17, 137:13, 137:19, 137:21, 138:3, 155:5, 155:15, 155:18, 166:20 linkages 18:8, 111:10, 138:6, 138:10 links 23:8, 141:7 lip 153:21 lips 50:17, 63:21, 64:16, 71:11, 76:22, 77:11, 77:13, 88:2, 89:3, 89:7, 89:10, 91:18, 92:15, 92:19, 93:5, 93:6, 93:8, 93:9, 93:12, 93:16, 93:18, 93:20, 94:9, 94:10, 96:5, 97:1, 97:7, 98:12, 99:7, 99:15, 99:18, 100:4, 100:6, 100:7, 100:20, 101:1, 101:4, 101:6, 101:18, 102:18, 103:3, 103:13, 103:16, 103:21, 104:9, 105:10, 106:6 liquid 65:4, 97:10, 99:9 list 13:17 little 12:16, 18:22,	19:6, 24:18, 33:19, 35:16, 49:21, 75:20, 98:17, 101:2, 125:22, 142:14, 149:7, 151:9, 151:10, 152:17, 153:19, 164:4, 164:18, 165:3, 169:16 llc 1:5, 1:8 llp 3:5, 3:12 local 116:21, 137:14 located 86:12 logical 91:10 long 35:12, 78:22, 79:4, 103:10, 131:5 longer 13:18, 35:5, 48:18, 94:22 look 7:6, 9:21, 13:7, 15:9, 16:7, 16:17, 17:7, 29:7, 30:11, 33:21, 35:18, 48:2, 55:15, 55:19, 56:17, 61:21, 71:4, 81:13, 82:20, 84:6, 100:21, 106:17, 107:15, 107:19, 118:19, 125:1, 125:20, 132:8, 135:12, 135:16, 136:17, 143:13, 145:20, 151:16, 154:2, 154:6, 155:9, 159:21, 161:12, 161:13,
--	--	--	---

164:7 looked 14:4, 16:15, 34:13, 35:9, 87:21, 107:5, 109:10, 151:14 looking 8:19, 12:6, 31:11, 31:13, 55:19, 108:13, 121:19 looks 13:21, 35:1, 59:10, 163:20 lost 151:21 lot 90:16, 90:17, 122:2	140:10, 141:11, 152:16, 154:4, 154:20 makes 13:19, 13:20, 14:1, 67:20, 89:10, 103:16 making 65:14, 68:6, 74:22 manage 112:9 manipulate 146:13 manipulation 146:7 manner 101:16 many 33:17, 33:18, 33:20, 56:3, 158:4 mapping 9:18 marked 4:11, 6:20, 6:22, 8:2, 8:10, 10:14, 10:19, 73:13, 76:3, 108:1, 122:18, 129:16 marriage 171:21 material 51:11, 77:16 matter 98:3, 171:24 maybe 24:18, 40:19, 42:18, 43:3, 85:10, 110:20, 122:7, 150:11, 168:5, 169:9 mean 7:7, 9:14, 10:12, 12:21, 19:10, 21:12, 27:15, 28:6,	28:12, 28:15, 31:8, 32:16, 33:19, 33:21, 36:15, 36:18, 37:22, 40:3, 41:2, 41:10, 41:14, 41:22, 43:16, 43:18, 45:13, 45:16, 45:17, 46:8, 46:11, 46:15, 48:12, 55:11, 58:1, 63:5, 65:2, 67:4, 82:12, 93:9, 96:2, 98:3, 98:16, 99:21, 100:21, 104:15, 104:17, 105:13, 107:1, 107:14, 111:16, 117:10, 120:16, 122:16, 124:1, 126:9, 126:22, 132:17, 132:22, 133:1, 133:2, 133:19, 133:20, 134:13, 135:12, 136:1, 136:14, 157:13, 157:21, 158:4, 168:7, 169:12 meaning 15:5, 32:9, 161:6 meaningful 155:11 means 14:22, 15:1, 25:13, 110:12, 148:11, 148:14 meant 34:12, 74:13, 164:10, 170:5 measure 47:22 measurement 28:13, 31:10 measurements 153:14	mechanical 18:8 mechanism 117:2, 138:3 mechanisms 111:20, 137:19, 137:21 meeting 167:8 meets 97:3 member 123:12, 132:4, 132:9 members 19:1 memory 81:13 merely 55:7 mesa 3:7 mess 122:1 messes 122:2 messnick 161:10 metal 129:18, 129:22 method 165:6 michigan 2:10, 171:5, 171:34 middle 131:17 might 10:10, 14:17, 15:12, 35:5, 35:22, 59:16, 60:8, 66:4, 66:14, 66:22, 71:11, 85:9, 88:13, 132:8 mind 10:5, 151:22 minute 18:1, 25:22
M			
ma'am 149:1 machine 36:3, 36:18, 36:20 machines 36:4, 36:14, 37:20 made 16:17, 55:21, 102:14 magnitude 116:22 main 115:12, 117:21, 120:14, 128:2, 139:3, 139:15 maintaining 23:22 make 15:11, 15:15, 38:2, 47:9, 48:3, 49:8, 54:11, 61:3, 64:12, 64:15, 85:12, 98:8, 114:16, 121:22,			

minutes 91:7, 91:13, 125:10 mispronouncing 24:22 missed 69:8, 100:2 missouri 3:14 mistaken 68:18 misunderstood 24:18, 150:11 moment 11:11, 88:3, 108:11, 116:15 moon 128:11, 128:15, 128:16, 128:21, 128:22 more 15:13, 18:22, 19:4, 19:13, 19:22, 22:15, 23:12, 40:17, 41:6, 41:9, 41:21, 42:5, 43:12, 44:22, 46:11, 46:22, 53:12, 55:16, 66:5, 74:19, 87:2, 107:12, 110:13, 111:1, 123:4, 137:21, 139:12, 140:8, 151:9, 159:8, 160:9, 162:7, 166:4 morgan 3:5 morning 5:8, 5:9 most 60:7, 87:3, 120:21, 138:1 mostly 108:15, 108:20, 127:2	motion 18:10, 18:19, 18:22, 19:4, 19:5, 19:9, 19:17, 20:4, 20:10, 20:12, 20:14, 21:7, 21:20, 22:7, 22:11, 22:16, 22:22, 23:1, 23:13, 24:5, 24:8, 41:22, 109:12, 109:19, 110:15, 110:18, 111:5, 114:9, 134:22, 135:1, 135:15, 136:3, 137:9, 139:13, 142:10, 149:16, 157:4, 159:7, 160:20, 165:21, 166:5, 166:17, 166:20, 169:20 motions 119:10, 145:13, 153:11 motivation 64:10 mount 97:6, 124:18, 143:6, 143:16, 143:18, 143:19, 143:20, 147:7, 166:9, 167:5, 167:17, 167:20, 167:21, 168:3, 168:10 mounted 113:7, 119:17, 119:18, 120:1, 165:15 mounting 123:13, 123:17, 124:9 mouthpiece's 144:17 mouthpieces 56:4, 56:18, 56:19, 57:6, 74:16, 82:5, 83:5, 83:15 movable 123:4 move 114:22, 115:2, 136:22, 156:6, 165:6 movement 10:3, 11:6, 11:19, 14:10, 14:22, 15:4, 15:6, 16:3, 17:19, 18:9, 18:18, 19:7, 19:15, 20:2, 21:18, 22:15, 22:20, 22:21, 23:12, 24:4, 24:8, 24:10, 25:13, 41:1, 109:12, 109:19, 110:6, 110:12, 110:13, 110:17, 111:3, 111:4, 112:2, 112:18, 113:3, 113:10, 115:22, 117:21, 119:5, 119:8, 119:17, 119:19, 120:1, 120:13, 121:10, 121:12, 122:21, 127:17, 135:9, 136:11, 137:10, 141:8, 141:22, 144:8, 144:17, 148:5, 165:15, 165:18, 166:4, 166:9, 166:16, 168:8, 168:22, 169:3, 169:6 moves 134:18, 142:12, 149:6, 149:17 moving 115:16, 118:12, 145:19 much 48:5, 48:18, 127:2, 145:19, 150:1 mudd 3:11, 4:6, 5:7, 24:21, 48:20, 49:14, 49:17, 58:15, 91:10, 91:15, 125:12, 129:4, 129:7, 163:6, 165:10, 170:7, 170:11 mudd's 102:17 multi-joint 117:1 multipiece 135:3 multiple 112:2, 119:5, 122:21, 134:15 must 16:11, 28:4 myself 26:5	N nakajima 119:6, 133:7, 133:8, 133:15, 133:17, 134:3, 134:7, 137:8, 138:2, 138:13, 138:17, 138:21, 140:15, 142:19, 143:22, 145:7, 145:15, 146:13, 146:18, 146:19, 147:1, 147:2, 149:20, 151:3, 151:7, 152:3, 152:8, 152:10, 152:13, 152:20, 152:22, 153:13, 158:18, 159:18, 163:2, 163:10,
--	---	--

165:21 nakajima's 133:9, 147:7, 148:4, 153:6, 153:8, 161:3, 164:9, 166:7, 167:4, 167:12, 168:7, 169:5 name 24:22, 53:17, 63:3 narrower 96:22 natural 143:2 near 26:19, 27:18, 28:3, 28:13, 28:15, 28:20, 29:1, 29:12, 29:19, 30:1, 30:5, 30:7, 30:17, 31:17, 31:19, 31:21, 32:6, 32:10, 32:12, 32:13, 33:12, 34:3, 34:7, 34:15, 35:2, 36:11, 37:3, 38:20, 46:4, 47:5, 47:6, 59:7, 59:9, 59:11, 59:16, 117:7, 128:4, 149:6, 149:13, 159:22 nearly 148:19, 149:15, 154:15, 170:3 necessarily 18:19, 19:9, 19:16, 20:3, 21:19, 40:14, 49:8, 126:16, 134:19, 169:4 neck 33:19, 134:1 need 27:13, 27:17,	65:15, 68:7, 78:2, 97:4, 127:10 needs 70:18 negate 168:20 negative 84:12, 96:7 never 12:22, 37:13, 45:22, 53:4, 57:16, 61:17, 63:7, 63:18, 98:18, 105:4, 117:13, 117:19, 119:22, 127:15, 135:7, 136:9, 151:22, 152:3, 161:6 new 49:12 next 27:1, 81:2, 81:17, 86:10, 91:7, 144:13, 149:4, 151:16, 166:2, 168:18 nice 60:7 nondispensing 76:21 none 111:10 nonetheless 84:22 nope 114:10 normal 30:12 normally 92:6 notary 2:10, 171:1, 171:4, 171:33 nothing 96:17, 108:7, 158:15, 158:17,	158:19 notice 2:9, 123:21, 124:12, 124:16, 148:10, 156:4, 156:7 noticed 160:4, 161:17, 163:13 notion 18:12, 109:14, 109:21 nozzle 36:8 number 6:1, 6:2, 144:8, 144:10, 159:22 numbers 12:5, 12:13, 12:20, 26:7, 83:10 numeral 160:11 O oakland 171:32 oath 5:2 object 9:12, 11:7, 11:21, 14:13, 15:2, 15:8, 16:6, 17:3, 19:20, 20:6, 22:1, 22:20, 23:20, 24:12, 27:20, 32:2, 35:7, 36:12, 38:15, 39:21, 40:15, 42:13, 43:15, 44:13, 47:17, 48:8, 52:3, 53:10, 54:15, 56:16, 57:20, 59:4, 60:17, 61:2,	61:20, 62:15, 67:3, 69:6, 71:13, 79:12, 79:19, 87:1, 91:21, 92:17, 93:7, 93:14, 94:4, 95:2, 96:13, 98:14, 102:10, 106:16, 107:10, 107:18, 110:16, 111:3, 111:14, 114:7, 117:16, 118:1, 119:2, 120:3, 120:15, 121:14, 124:3, 126:19, 127:19, 128:18, 132:16, 134:12, 135:11, 136:4, 136:13, 140:19, 142:3, 145:10, 148:13, 150:10, 151:8, 152:7, 153:7, 153:22, 155:7, 155:20, 156:10, 156:19, 158:3, 158:9, 160:8, 160:15, 161:10, 164:21, 168:11, 169:8 objected 102:17 objection 23:19, 25:4, 66:18, 69:10, 75:10, 146:20, 148:21, 163:17 objective 29:19 obvious 120:17, 121:19, 127:22, 128:9 obviously 21:9, 127:4, 152:11 occurred 171:16 occurring 112:2, 122:21
--	--	---	--

occurs 18:10, 22:20, 109:12, 109:20, 111:3, 143:11 off-the-record 58:11 offered 8:21 offers 133:18 office 1:1 oh 23:19, 30:16, 53:22, 78:15, 87:22, 90:19, 107:5, 112:7, 112:8, 134:17, 137:5, 146:10, 151:15, 154:7, 155:8 okay 5:20, 6:7, 6:19, 7:5, 7:9, 7:12, 8:8, 8:12, 9:3, 9:8, 9:22, 10:12, 10:18, 11:11, 11:16, 12:13, 14:1, 15:20, 16:19, 17:9, 18:4, 18:5, 25:5, 26:10, 26:12, 34:3, 36:4, 36:6, 37:4, 38:11, 39:6, 46:2, 46:7, 46:9, 46:21, 49:22, 50:13, 51:2, 51:3, 57:8, 62:20, 72:1, 73:8, 73:18, 75:22, 80:6, 80:18, 83:2, 85:12, 88:3, 88:9, 88:17, 90:3, 90:19, 91:18,	91:22, 94:5, 96:20, 97:20, 99:2, 99:13, 100:9, 105:17, 108:14, 109:6, 112:12, 112:14, 114:20, 114:22, 116:16, 123:6, 123:9, 124:7, 125:6, 125:12, 125:16, 126:8, 126:21, 129:4, 131:8, 133:4, 135:6, 146:16, 152:2, 156:7, 169:18 old-school 127:3 once 69:9, 118:13 one 8:15, 9:18, 14:19, 15:10, 16:14, 17:7, 17:22, 19:22, 20:19, 22:4, 22:8, 25:22, 26:9, 28:6, 31:2, 34:13, 34:14, 36:14, 42:5, 47:4, 53:12, 55:16, 64:2, 64:3, 79:20, 80:1, 80:5, 83:18, 90:11, 95:6, 104:10, 107:13, 107:20, 108:18, 111:1, 111:7, 114:19, 117:7, 126:10, 128:16, 128:19, 128:22, 130:3, 137:22, 138:12, 142:17, 142:20, 145:5, 145:13, 145:19, 145:20, 147:8, 147:11, 149:17,	150:5, 155:12, 158:1, 159:7, 160:4, 163:19 one-handed 108:16, 108:20 ones 33:20, 139:8 only 27:18, 44:9, 56:5, 56:9, 64:21, 68:6, 106:4, 106:19, 153:1, 157:20 open 45:21, 48:11, 52:6, 52:7, 52:18, 54:1, 61:6, 61:15, 61:18, 62:18, 65:9, 73:5, 78:9, 84:12, 86:9, 86:11, 98:6, 98:16, 98:17, 98:22, 99:5, 100:17, 134:4, 143:7, 152:19, 159:17, 160:13, 162:19, 163:3, 164:7, 164:16 opened 53:15 opening 49:4, 59:22, 86:7, 87:5, 87:9, 93:5, 97:9, 105:20, 105:21, 106:4, 134:6, 143:12, 148:4, 149:20, 151:2, 151:6, 151:7, 152:4, 152:5, 152:10, 155:5, 155:19, 156:22, 158:6, 158:7 opens 107:13, 143:6	operates 58:3 operation 35:15, 108:16, 108:21 operative 75:2 opinion 18:18, 19:3, 19:7, 19:15, 20:2, 21:18, 21:21, 22:19, 24:9, 25:12, 27:12, 27:17, 28:3, 31:20, 34:7, 35:9, 42:9, 49:1, 58:7, 64:9, 64:20, 65:10, 88:4, 88:20, 95:11, 101:15, 102:3, 102:20, 110:11, 110:15, 111:2, 115:19, 116:1, 131:20, 138:2, 138:20, 139:19, 140:21, 141:19, 151:5, 153:18, 153:20, 166:13, 166:15, 169:2, 169:4 opinions 6:12, 7:15, 8:21, 16:1, 16:20, 16:22, 17:15 opportunity 149:8 opposed 9:17 optical 164:5 oranges 38:10 order 99:4 ordinary 30:19, 31:4,
---	---	---	--

34:6 orientation 163:1 original 84:15, 84:20, 114:12, 114:15, 115:3, 115:5, 146:17 osmosis 99:10 other 9:18, 20:17, 21:8, 26:9, 35:10, 40:2, 68:20, 69:1, 77:21, 78:5, 130:14, 132:2, 132:8, 139:7, 145:21, 153:11 otherwise 98:8, 104:12, 171:23 out 12:1, 35:21, 37:6, 37:12, 40:5, 41:4, 41:12, 42:8, 43:18, 44:5, 44:16, 45:10, 45:17, 57:18, 81:16, 100:13, 103:17, 110:20, 127:6 outcome 171:24 outer 89:4 outlet 35:13, 39:13, 39:19, 40:13, 40:22, 41:9, 42:10, 43:10, 43:13, 43:16, 43:20, 44:10, 45:9, 45:10, 46:19, 50:6, 50:15, 55:8, 55:9, 86:12,	86:14, 87:9, 87:12, 97:10 outlet-forming 76:16 outside 65:7, 68:21, 89:10 over 16:12, 42:16, 66:18, 149:2 overall 137:9, 142:9 overlap 165:3 overlapping 163:21 overlay 164:2 overstated 164:18 own 22:10, 168:4 owner 1:9, 3:10 P pack 78:18 page 4:3, 4:9, 32:20, 51:3, 67:16, 70:1, 75:14, 76:12, 88:1, 90:1, 90:3, 116:14, 119:12, 136:20, 137:2, 137:4, 137:7, 142:15, 144:3, 144:7, 148:1, 150:7, 155:3, 160:3, 161:2, 161:8, 162:20, 163:9, 163:10, 163:20, 165:13, 166:2, 167:16 pages 1:21, 144:21	paint 112:14, 112:17, 116:3, 122:4 painted 113:1, 113:15, 113:21, 114:1, 116:8 painthead 120:21, 121:16, 121:18, 121:21 painting 121:1, 121:22 paper 73:10, 90:2 paragraph 17:21, 18:4, 18:6, 26:11, 26:13, 26:14, 32:19, 50:1, 51:5, 67:13, 69:22, 72:1, 72:2, 72:7, 74:15, 75:11, 75:14, 75:15, 75:16, 85:7, 85:14, 96:18, 97:17, 101:16, 106:11, 109:7, 109:11, 111:18, 122:5, 122:8, 129:8, 136:19, 137:3, 137:4, 144:4, 144:6, 147:13, 147:15, 147:19, 148:2, 150:22, 159:12, 159:13, 159:14, 166:2, 167:2, 168:18, 170:6 parallel 112:22, 113:21, 114:21 part 26:18, 28:4, 29:20, 31:5, 35:2, 35:3, 35:4, 38:12, 41:22, 42:22,	43:17, 58:6, 60:7, 68:11, 71:9, 71:18, 72:10, 73:2, 73:20, 83:8, 85:18, 86:15, 87:16, 88:7, 93:8, 93:10, 93:15, 95:14, 100:2, 101:19, 102:7, 102:19, 103:8, 103:12, 103:20, 104:1, 104:6, 104:13, 104:19, 104:21, 104:22, 105:5, 106:13, 107:16, 138:7, 142:20, 160:16, 163:21 parted 99:8 particular 6:8, 18:9, 86:4, 142:16 parties 171:20, 171:22 parts 22:7, 28:15, 77:21, 103:3 party 171:12 pass 42:19, 81:17, 170:13 passes 41:12 pasted 164:12 patent 1:1, 1:3, 1:9, 1:12, 3:10, 6:2, 6:4, 6:9, 6:21, 7:2, 7:3, 7:13, 8:13, 8:16, 8:17, 8:18, 8:22, 9:4, 9:10, 9:16, 9:21, 10:2, 10:16,
--	---	---	---

11:3, 11:5, 11:17, 13:13, 13:18, 15:1, 15:5, 15:7, 16:1, 16:3, 16:14, 16:15, 16:17, 16:21, 17:1, 18:8, 18:20, 19:3, 19:8, 19:16, 20:3, 21:19, 22:19, 24:7, 24:9, 25:11, 25:14, 26:4, 28:9, 29:18, 30:7, 33:16, 33:17, 35:19, 36:21, 39:3, 40:16, 47:9, 49:20, 50:4, 50:22, 53:8, 57:12, 58:17, 61:17, 67:20, 71:22, 82:2, 82:5, 82:16, 83:1, 83:9, 83:14, 107:5, 107:15, 110:6, 111:11, 118:2, 118:17, 132:11, 166:4 patent's 75:18 patents 8:16, 9:15, 11:20, 13:2, 14:7, 14:11, 14:15, 25:18 path 26:17, 116:22, 155:4, 155:18, 155:21, 155:22, 156:8 pathway 42:18, 42:19, 42:21, 43:5, 43:6, 43:21, 44:3, 44:11,	44:22, 99:20 pause 25:21, 39:2, 103:10 paused 30:16, 40:12 people 32:3 perception 31:9, 32:5 perfectly 18:12, 104:5, 109:14, 109:22 perform 96:9 permits 51:12 perpendicular 113:14, 113:16, 113:22, 114:2, 114:20 person 30:19, 47:10, 81:17, 92:1, 93:19, 97:18 person's 91:20, 92:8, 105:21 persons 31:4, 34:5 perspective 137:8 petitioner 1:6, 3:3, 74:1, 90:8 ph 1:14, 2:1 phd 5:4 phrased 169:16 phrasing 168:5 physics 19:18, 20:5, 20:8, 20:18, 21:13, 21:21, 22:3, 22:13	picked 150:3, 150:14, 151:15 picking 165:2 piece 70:3, 111:7 pieces 134:16 pin 130:4, 130:8, 130:10, 130:15, 130:17, 131:1, 131:3, 131:6, 131:9, 131:10, 131:13, 131:18, 135:9, 135:19, 135:20, 136:11, 152:18, 168:4 pink 76:9 pinned 21:1 pins 136:6, 139:5, 139:8, 139:18, 142:11, 151:11 piston 138:6 pivot 18:11, 22:9, 22:11, 22:21, 109:13, 109:20, 110:16, 111:4, 113:17, 114:5, 114:9, 114:12, 115:3, 115:5, 115:12, 116:9, 116:13, 120:5, 120:6, 120:18, 121:3, 123:18, 124:1, 124:5, 124:8, 124:14, 124:18, 124:19, 127:12, 127:18, 128:3, 128:4, 130:11, 130:18, 131:4, 131:10,	139:14, 139:16, 140:3, 140:15, 141:9, 142:1, 149:18, 152:15, 157:11, 158:14, 159:11, 166:18, 169:12 pivot-driven 116:21 pivotally 130:2, 130:13 pivoted 143:16 pivoting 86:8, 117:20, 118:9, 118:11, 118:15, 120:7, 120:17, 121:1, 136:10, 137:10, 139:10, 139:15, 141:12 pivots 23:5, 23:10, 46:18, 113:21, 113:22, 114:3, 114:4, 114:11, 114:12, 115:7, 115:10, 116:18, 127:17, 130:7, 135:8, 135:19, 135:20, 139:1, 140:6, 140:12, 140:15, 140:22, 141:9, 168:7, 169:5 place 6:19, 7:17, 37:16, 38:4, 38:12, 50:16, 55:2, 89:3, 89:7, 89:9, 97:5, 97:6, 100:16, 100:19 placed 77:19, 77:21 places 26:19, 56:8 placing 60:15, 101:16
---	---	--	---

plane 20:10, 21:7, 112:22, 113:14, 116:9 planes 118:9 platform 123:4 player 59:20, 66:8 player's 66:12 players 66:13 please 10:17, 10:21, 17:21, 25:1, 26:10, 50:2, 51:1, 73:15, 80:5, 85:7, 108:11, 112:6, 129:8, 136:19, 155:12 plus 145:13 point 18:14, 20:19, 20:20, 21:1, 21:5, 22:5, 22:9, 22:12, 23:2, 46:2, 48:22, 68:6, 74:14, 79:16, 80:10, 91:11, 109:16, 110:1, 118:20, 126:10, 136:16, 136:18, 143:3, 153:16, 156:1, 156:6, 157:5, 157:11, 157:15, 158:1, 158:12, 158:14, 158:16, 159:11, 164:6 points 23:10, 156:17, 156:20 porous 70:13	portable 36:17, 37:9, 38:9 portion 25:2, 26:15, 40:18, 42:6, 44:6, 44:16, 48:6, 55:12, 70:17, 70:20, 74:2, 75:6, 77:6, 85:19, 88:20, 90:9, 94:11, 94:12, 94:22, 95:13, 95:21, 96:11, 101:11, 102:7, 106:14, 107:8, 123:14, 123:17, 124:9, 124:19, 136:20, 160:10, 160:19, 160:21, 164:3 portions 78:5, 147:2, 147:3, 153:9 posita 18:6, 26:14, 31:13, 33:22, 70:3, 72:15, 76:18, 97:2, 102:22, 137:8 positas 34:13 position 24:6, 25:19, 46:19, 74:19, 75:3, 75:8, 80:20, 126:4, 126:5, 134:4, 134:5, 143:7, 146:5, 146:15, 152:14, 153:12, 156:3, 157:12, 157:14, 159:17, 161:2, 161:7, 161:15, 162:19, 164:7, 164:9, 164:19	positioned 26:17 positioning 162:3 positions 86:8, 112:19, 112:22, 113:10, 113:13, 113:17, 167:7, 167:20 possibility 101:8, 101:11, 101:14, 101:21 possible 60:21, 62:6, 77:3, 95:11, 164:17 post 125:17 potentially 68:9 pour 98:7, 103:11 pouring 97:11 practical 45:17 preceding 51:8, 148:3, 167:3 preclude 111:17, 166:4 predominately 148:6, 148:10 preliminarily 73:22, 75:3, 89:16, 90:4, 90:7 preliminary 73:22, 75:9 prepared 97:13, 97:16, 97:20 present 52:2, 56:15, 57:13, 83:9 press 77:10 pressed 38:19, 48:10,	94:10 pressure 54:20, 84:8, 84:12 pressurizing 65:7, 65:8 pretty 33:2, 92:11, 119:3, 120:16, 127:22, 150:1 prevent 66:15, 67:1 preventing 77:16, 96:17 previous 24:3 previously 4:11, 8:2, 8:10, 10:19, 73:13, 76:3, 108:1, 122:18, 129:16 primary 139:20, 140:2, 142:17, 143:3, 143:5, 143:9, 143:20, 144:9, 144:16, 144:22, 145:8, 145:13, 147:9, 148:6, 148:12, 158:22, 159:15, 162:10, 165:14, 165:16, 166:6, 167:6, 167:18, 168:22, 169:13, 169:20, 170:1 prior 5:18, 111:20, 122:6, 122:7, 161:18 priority 8:16 probably 35:13, 37:11, 49:12, 82:14, 92:12, 100:6, 104:21, 106:8,
--	---	--	--

125:13, 139:12, 151:15, 159:3, 159:4, 159:8, 160:6, 168:13 problem 14:6, 26:1 proceeding 7:15, 17:11 proceedings 25:21, 39:2 produce 137:13 produced 137:10 product 29:15, 31:1, 33:10, 36:16, 46:22, 47:1, 59:10, 59:18 products 1:8, 30:10, 31:12, 32:4, 38:1, 154:22, 171:13 professional 59:19 program 146:7 projected 29:3 promise 142:5 protrusion 155:5 protrusions 138:17, 139:11, 140:17, 141:15, 141:21 prove 169:19 provide 144:21, 153:13 provided 30:7, 56:19 provides 132:14, 144:14 proximal 116:18, 117:5	public 2:10, 171:1, 171:4, 171:33 pull 37:5, 51:1, 89:22, 112:5 pulled 146:1 pure 18:13, 21:13, 21:14, 22:22, 23:1, 23:2, 23:7, 24:4, 109:15, 109:22, 110:14, 110:17, 111:5, 111:9, 114:11, 114:14, 114:22, 115:3, 115:13, 115:14, 115:17, 116:7, 116:12, 118:12, 119:11, 134:20, 134:22, 135:4, 136:2, 136:7, 138:8, 140:7, 158:16, 166:17, 169:22 purpose 65:11 purposes 83:12, 162:8 pursuant 2:9 push 36:5, 95:3, 95:6 pushed 47:7 pushing 36:14 put 10:7, 10:12, 10:14, 28:21, 35:4, 36:5, 38:16, 48:7, 48:12, 52:16, 52:22, 54:9, 63:15, 67:6,	73:6, 73:9, 88:11, 91:18, 92:8, 94:8, 94:19, 95:12, 96:5, 98:21, 101:9, 107:21, 108:10, 122:14, 136:8 putting 52:19, 92:16, 92:20 Q question 19:21, 24:19, 25:1, 48:21, 57:2, 57:5, 57:8, 58:14, 68:13, 84:15, 84:20, 92:10, 102:11, 102:17, 109:1, 117:18, 127:14, 150:12, 154:17, 168:6 questions 24:3, 49:13, 91:12, 98:10, 99:3, 170:12, 170:15 quick 11:8, 78:11, 87:4, 89:22, 112:12, 130:19 quote 18:9, 119:13, 119:16, 151:2 R rabarits 74:3 radius 18:15, 109:17, 110:2, 134:19, 150:2, 155:9 raises 54:20, 64:22 random 157:10, 157:14	randomly 155:13 rather 7:10 read 5:2, 9:16, 16:8, 25:1, 25:3, 27:2, 29:14, 33:3, 41:10, 47:9, 53:11, 53:12, 60:13, 61:5, 62:3, 62:16, 74:7, 82:12, 84:7, 87:3, 118:17 reading 62:6, 76:18 real 59:8, 87:4, 89:22 real-world 117:1 really 12:22, 15:13, 31:15, 35:17, 45:18, 66:17, 84:17, 98:15, 105:4, 107:2, 145:18, 145:19, 157:21, 160:16, 165:10, 168:16, 169:15 realtime 146:1, 159:5, 161:5 reason 64:11, 74:11, 80:13 reasoning 142:16 reasons 79:20, 83:19 recall 7:10, 71:19, 106:22, 109:1, 125:19, 127:20, 128:12, 135:13
--	--	--	--

received 81:4 recess 149:6, 153:2, 153:5, 153:16, 153:21, 156:9, 156:11, 156:16, 157:18, 163:21 recessed 157:1 recites 39:7, 43:9 reciting 49:1 record 25:2, 49:16, 73:22, 91:14, 102:16, 105:18, 129:6, 170:10, 171:10 red 76:8, 76:10, 124:9, 129:22, 156:2 red-dashed 155:4, 155:17, 156:18, 157:2 reducing 54:19 reduction 51:15, 60:19, 61:22 refer 26:15, 50:3, 75:16, 89:21, 105:19, 115:5, 152:9 reference 75:17, 75:18, 76:5, 82:3, 83:12, 84:17, 122:6, 122:16, 129:10, 129:12, 143:3, 151:19, 160:11 referenced 121:4 references 78:21, 85:10	referred 24:8, 32:7, 137:18 referring 24:13, 24:15, 67:19, 79:10, 117:6, 125:5, 143:14 refers 18:10, 40:17, 68:17, 109:12, 109:19, 136:9, 152:4 reflect 102:16 reflected 111:19, 122:9 refresh 81:13 regard 24:7 regarding 6:1, 6:9, 6:11, 7:15, 8:21, 17:1 regardless 27:8, 28:1, 32:22, 84:21, 88:5, 137:12 region 76:21, 86:12 related 13:17, 31:2, 38:8, 43:8, 171:19 relates 44:7 relative 22:20, 110:16, 111:3, 117:21, 118:10, 119:17, 119:19, 120:1, 137:9, 161:7 relevant 38:4, 38:7, 38:13 reliably 29:9 relying 118:21	remains 149:5 remember 24:16 remind 26:5 rename 53:17 rendered 7:14, 17:1 repeat 5:20, 19:21, 84:19, 110:21 rephrase 23:22 reply 8:6 report 147:4, 150:20 reported 1:22 reporter 19:19, 25:3, 58:12, 90:20, 92:4, 109:18, 148:20, 148:21, 163:5, 171:1, 171:4 represent 6:21, 10:15, 13:5, 76:1 representation 55:17 represented 171:13 represents 163:1 requested 25:2 require 18:19, 19:9, 19:16, 20:3, 21:19, 39:20, 64:13, 64:15, 69:15, 72:16, 72:21, 74:9, 84:4, 166:17, 169:3	required 21:22, 32:14, 166:20 requirement 166:8 requiring 39:18, 50:16, 70:8, 96:22 reservoir 78:17, 79:6 resistance 133:2, 133:11, 133:18, 133:20, 133:21, 134:10 resisting 134:6 respect 20:19, 20:20, 21:15, 22:11, 41:13, 115:11, 116:8, 121:17, 136:5, 139:13, 139:16, 139:17, 142:10, 149:18, 152:14, 168:15 respective 136:6, 143:11 responded 102:11 response 90:11 rest 76:22, 125:13, 162:11 restate 57:8, 58:13, 124:15 restaurant 36:1 resting 153:1 restricted 80:9 restricts 40:6 result 146:21 results 166:5
--	---	--	---

retracted 113:10, 113:13, 113:17 return 12:10, 13:8 review 79:22 reviewing 11:10, 11:14, 12:2, 53:13, 55:18, 108:12 rewriting 54:12 ribarits 85:16, 85:18, 86:4, 86:14, 86:20, 89:9, 89:17, 93:21, 95:12, 97:3, 97:5, 106:11, 106:17, 107:22, 108:15, 109:6 rigid 18:12, 19:12, 20:12, 21:21, 22:5, 77:16, 109:14, 109:22, 119:10, 149:7, 149:13 rim 97:8 room 85:12, 91:2 rosnak 111:20, 112:1, 112:12, 112:14, 113:6, 115:6, 117:13, 117:19, 118:21, 119:13, 119:16, 119:22, 120:11, 121:9, 127:15 rosnak's 112:17, 113:9, 116:17 rotate 19:1, 19:2, 20:22, 21:2,	21:4, 21:14, 22:4, 123:18, 124:8, 125:4, 125:19, 125:20, 126:3, 126:20, 126:22, 127:3, 127:7, 127:10, 127:12, 128:2, 129:1, 132:20, 133:19, 133:22, 134:8, 134:17, 134:19, 139:7, 141:1, 149:8, 162:6 rotated 147:3, 147:8, 153:10, 160:18, 162:5, 164:13 rotates 20:15, 21:11, 116:6, 121:11, 124:6, 124:13, 124:17, 124:19, 125:21, 126:10, 126:13, 126:17, 126:18, 127:17, 128:16, 133:9, 135:8, 139:5, 139:16, 140:3, 167:4, 167:12, 167:14, 167:19, 167:21, 168:2, 168:4, 168:15, 169:14 rotating 20:16, 115:18, 115:20, 115:21, 116:2, 118:9, 119:9, 123:22, 124:1, 127:6, 128:1, 128:2, 128:14, 128:15, 128:20, 128:21, 133:12, 136:10, 159:11, 162:9, 162:12 rotation 18:13, 19:11,	19:13, 20:9, 20:18, 20:20, 21:14, 23:2, 23:7, 109:15, 109:22, 110:14, 111:9, 114:11, 114:14, 115:1, 115:3, 115:13, 115:14, 115:17, 116:7, 116:13, 118:12, 119:11, 121:10, 134:20, 135:4, 135:16, 136:6, 136:8, 137:11, 137:13, 137:14, 137:22, 138:4, 138:11, 138:12, 138:13, 138:16, 138:22, 139:3, 139:4, 139:15, 139:17, 139:20, 139:21, 140:7, 140:16, 141:13, 141:14, 141:15, 141:19, 141:21, 142:12, 142:13, 143:11, 144:9, 144:10, 144:22, 145:1, 145:4, 145:7, 145:8, 147:16, 147:20, 148:6, 148:12, 148:15, 149:22, 150:1, 151:11, 152:18, 153:19, 154:22, 156:21, 158:7, 158:16, 159:6, 159:15, 159:21, 161:13, 161:17, 166:6, 168:1, 168:19, 169:3, 169:12, 170:1 rotational 18:19, 19:4, 19:9, 19:17, 20:4, 21:10, 21:20, 22:10,	22:22, 23:1, 23:13, 24:4, 24:8, 110:17, 111:5, 116:11, 136:2, 165:14, 165:17, 166:17 rotations 22:16, 116:22, 128:10, 141:6, 141:9, 141:12, 144:15, 162:3, 162:14, 164:15, 166:22 rpr 1:22 rules 5:17 S said 14:16, 17:4, 24:16, 25:9, 25:17, 27:21, 30:1, 45:4, 45:15, 46:6, 47:21, 50:13, 53:2, 62:20, 63:8, 71:21, 74:14, 75:5, 75:9, 94:19, 102:2, 107:5, 119:3, 137:2, 142:6, 142:9, 156:6, 159:16, 170:3, 170:4 sake 123:10 same 5:17, 9:4, 11:5, 11:17, 12:8, 13:5, 14:8, 25:13, 32:4, 34:14, 34:19, 35:4, 37:8, 42:4, 43:20, 52:10, 54:7, 61:1, 62:7, 66:12,
--	--	--	---

66:17, 67:5, 81:18, 92:10, 92:12, 92:13, 92:16, 117:14, 124:1, 126:17, 142:15, 146:4, 147:17, 147:20, 154:4, 156:8, 156:17, 157:2, 164:12 satisfies 166:8 satisfy 44:18 saw 84:2 say 19:14, 22:7, 23:4, 28:13, 29:7, 42:18, 43:4, 45:6, 46:4, 47:22, 53:22, 54:17, 59:10, 59:14, 60:13, 62:19, 72:15, 75:17, 77:6, 86:4, 86:10, 91:19, 92:1, 92:7, 95:21, 96:14, 97:22, 101:19, 103:10, 112:1, 113:20, 116:14, 121:6, 121:18, 122:8, 128:7, 128:19, 128:22, 134:17, 134:20, 135:18, 137:7, 139:12, 140:5, 140:21, 144:13, 149:4, 149:12, 149:15, 150:21, 151:1, 162:22, 164:7, 166:3, 167:3, 167:22, 168:2, 168:7, 168:17, 169:9, 169:16	saying 12:15, 18:21, 20:7, 21:12, 22:2, 22:14, 35:15, 48:2, 68:10, 68:13, 68:20, 69:3, 69:11, 73:1, 82:9, 110:8, 110:11, 116:10, 120:4, 120:5, 129:3, 133:21, 142:8, 167:19, 168:14, 169:10 says 12:9, 12:11, 28:9, 39:11, 39:22, 40:3, 40:6, 40:7, 41:3, 51:8, 51:15, 62:3, 73:1, 73:19, 79:3, 79:13, 81:2, 81:11, 83:4, 116:17, 119:16, 119:22, 124:4, 128:16, 134:7, 158:15, 158:18 scan 11:8 scenario 102:6, 128:11, 134:7 screen 12:4 scrupulously 142:5 se 16:14, 40:1, 121:7, 132:18, 152:14 seal 108:16, 108:21 second 6:7, 6:16, 8:4, 8:7, 10:5, 10:21, 12:1,	17:11, 17:15, 17:20, 26:11, 50:2, 50:3, 53:11, 67:14, 69:21, 73:11, 74:12, 79:21, 80:5, 85:14, 96:19, 107:20, 110:20, 112:19, 112:21, 113:18, 114:4, 114:19, 115:20, 119:12, 121:11, 124:8, 124:9, 124:14, 124:18, 127:7, 129:9, 129:21, 130:11, 130:14, 130:15, 130:17, 131:3, 131:6, 131:10, 131:18, 131:20, 132:2, 132:15, 132:19, 133:5, 135:8, 135:19, 135:20, 136:10, 136:20, 138:16, 141:14, 145:5, 155:12, 162:21 secondary 139:4, 139:17, 139:21, 140:3, 140:16, 141:20, 142:17, 143:9, 144:11, 144:16, 145:2, 145:9, 145:14, 149:9, 153:19, 156:22, 158:8, 161:16, 162:15, 165:17, 165:18, 166:7, 168:20 section 74:16, 150:21 see 5:12, 9:14, 10:13, 11:3, 11:8, 11:11, 11:15, 11:22,	12:3, 13:14, 14:1, 17:5, 18:4, 18:16, 25:7, 26:21, 27:10, 30:11, 30:20, 34:18, 35:22, 37:5, 39:8, 39:16, 40:16, 41:3, 44:14, 50:8, 50:18, 51:20, 55:15, 59:19, 66:9, 68:4, 72:5, 72:13, 72:14, 72:18, 74:5, 77:1, 79:1, 79:7, 80:22, 81:6, 83:13, 86:17, 88:7, 97:14, 97:19, 102:21, 107:20, 110:3, 111:22, 114:18, 117:3, 119:20, 122:11, 123:1, 125:7, 126:16, 132:22, 134:13, 137:16, 144:18, 145:20, 147:3, 148:8, 149:10, 150:5, 150:6, 150:16, 154:21, 155:8, 155:12, 155:22, 160:2, 160:20, 163:11, 166:11, 167:9 seen 60:6, 63:7, 79:22, 105:18 select 151:13 selectively 83:7, 143:16 sense 13:19, 13:20, 14:1, 31:16, 33:22, 47:2, 54:11, 98:8
---	--	--	---

sentence 27:1, 27:2, 27:22, 32:20, 33:2, 33:3, 50:3, 67:17, 76:12, 81:2, 86:10, 109:11, 116:15, 137:6, 144:6, 144:7, 144:13, 148:1, 149:4, 167:2, 167:11, 169:22 separate 16:10, 100:6, 101:5, 138:21 separately 162:6 separating 101:1 separation 100:7 sequentially 144:14 seriously 105:4 serve 27:5, 33:5 serves 46:7, 65:11 services 67:22 set 14:19, 109:6, 118:18, 171:7, 171:26 setting 118:3 shaft 137:11, 139:6, 139:10, 141:1, 141:2 shafts 138:14, 139:2, 140:12, 140:16, 141:14, 141:20, 142:2, 144:1, 169:7 shame 108:6	share 9:4, 11:17, 63:17, 63:19 shared 9:9 sharing 129:15 shook 3:12 short 88:13 short-circuited 99:2 shortcomings 160:4 shorthand 171:1 should 9:10, 14:10, 20:14, 43:1, 63:18, 108:3, 108:10, 147:11 shoulder 97:8 shouldn't 160:6 shoved 95:16, 102:7 show 13:16, 56:2, 98:18, 134:2, 135:3, 147:5, 147:10, 147:16, 147:19, 150:15, 158:22, 159:14, 161:14, 162:1, 162:11, 162:13, 164:11 showed 35:8 showing 144:13, 151:1, 153:4, 155:9, 155:17, 161:1 shown 89:18, 89:19, 101:16, 132:4, 148:15, 153:1,	159:18, 161:8, 163:2, 163:9, 163:10, 167:3, 167:7 shows 125:17, 154:19, 160:5, 160:12 shut 107:2 shuts 107:3 side 132:19, 134:3 sidelines 66:9 sides 89:12 signature-plkal 171:28 significantly 151:18 similar 92:11, 127:14, 163:4, 163:7 similarly 99:13, 128:14 simon 122:6, 122:10, 122:20, 123:3, 123:6, 123:12, 123:21, 123:22, 125:2, 125:6, 125:13, 125:16, 126:17, 127:15 simple 48:9, 48:16 simpler 48:5 simplicity 123:10 simplified 48:15 simply 29:12, 41:2, 49:3, 49:7, 52:7, 52:19, 70:12, 74:21, 93:1, 99:14,	100:3, 134:14, 135:3 simulation 158:21, 159:4, 160:17 simulations 144:22 simultaneously 116:3, 145:18, 146:1 since 6:15, 11:16, 14:4, 14:7, 17:18, 21:9, 31:8, 31:19, 79:22, 81:14, 114:3, 152:9, 152:16 single 18:13, 20:11, 21:21, 109:15, 110:1, 112:3, 122:22, 140:7 sits 132:9 sitting 15:13, 15:22 size 153:20, 155:14 sized 81:4 sketch 98:4, 98:15 skill 30:19, 31:4, 34:6 skip 27:1 sleeve 125:3 slides 125:18 slight 15:19 slip 26:9 slit 52:6, 52:7,
--	---	--	---

56:3, 61:6, 61:7, 61:15, 61:18, 62:18, 65:9, 67:7, 68:19, 71:4, 89:8 slitted 67:8, 67:9 small 149:16, 149:21, 170:4 smallest 149:22, 150:15 snuck 90:21 so-called 50:10, 51:22, 54:14 soaking 45:19, 46:1, 46:12 soda 36:2, 36:9, 38:9 soft 35:21, 36:1, 36:8, 37:14 software 144:20, 146:6 solely 61:18 solid 129:18, 129:21, 156:2 some 9:7, 19:11, 20:14, 21:1, 21:7, 21:10, 25:9, 29:6, 33:18, 33:19, 34:19, 35:20, 51:10, 58:6, 70:17, 70:20, 80:13, 84:8, 85:10, 90:6, 95:14, 98:6, 98:9, 98:22, 99:2, 99:5,	99:7, 99:8, 100:7, 100:20, 102:7, 102:12, 102:13, 108:8, 126:2, 132:14, 133:2, 133:11, 133:15, 133:18, 138:5, 144:20, 144:21, 154:8, 157:20, 158:7, 159:20, 161:11, 163:13, 165:5 somehow 71:9, 102:7, 121:12, 153:20 someone 29:6, 36:13, 59:9, 59:14, 154:21 someone's 29:19, 91:18, 98:21 something 5:15, 14:22, 19:1, 28:19, 36:16, 37:10, 37:21, 38:3, 38:5, 41:9, 43:12, 44:3, 47:1, 52:9, 52:10, 74:21, 92:15, 92:20, 95:7, 99:10, 102:14, 105:11, 150:16, 150:19, 161:11 somewhat 24:4, 31:20 sorry 13:8, 15:3, 19:21, 23:19, 24:13, 24:21, 30:16, 34:2, 34:3, 39:5, 40:11, 40:20, 59:13, 62:13, 68:16, 69:8, 77:7, 78:21,	87:7, 91:5, 98:11, 103:6, 108:10, 108:13, 110:22, 114:10, 124:14, 128:4, 131:4, 137:4, 140:13, 149:2, 151:22, 154:16, 156:4, 157:8 sounds 7:12, 125:12, 125:15 space 100:22, 153:5, 160:13, 164:4 spacing 12:18 specific 55:13, 59:18, 160:9 specifically 39:20, 44:16, 87:2, 123:4, 136:20, 160:9 specification 12:16, 15:16, 16:8, 32:17, 53:16, 54:12, 55:10, 55:13, 56:17, 57:1, 57:3, 57:16, 58:5, 61:5, 62:16, 67:19, 67:20, 71:20, 83:20, 126:7, 135:13, 158:15, 158:17 specify 124:12, 124:16, 124:20 spill 66:7, 108:22 spills 66:16, 67:2 splashing 103:17 spoke 88:10, 149:2	sports 59:20 spot 161:19 spots 156:12, 157:20 spout 86:7, 86:13, 89:12, 94:8, 94:19, 94:21, 95:9, 95:12, 96:6, 101:9, 101:17, 107:3, 107:13, 107:16, 108:21 spray 45:9, 47:16, 49:4, 88:13 spread 65:14 square 127:5, 127:7 squeezable 56:20 squeeze 28:8, 28:9, 49:6, 49:8, 49:9, 49:11, 49:19, 50:10, 51:22, 52:7, 52:13, 52:20, 53:5, 53:7, 53:18, 53:19, 53:20, 54:5, 54:9, 54:17, 54:22, 55:5, 55:22, 56:9, 56:13, 57:9, 57:11, 57:17, 60:5, 60:6, 60:12, 61:6, 61:10, 61:14, 61:16, 62:4, 62:7, 62:11, 62:21, 63:12, 63:22, 64:6, 64:8, 64:11, 64:18, 65:11,
---	---	---	--

65:17, 65:20, 66:11, 66:15, 67:1, 67:5, 67:8, 67:10, 67:11, 70:21, 78:2, 80:2, 80:12, 80:14, 81:16, 82:11, 84:1, 88:11, 88:15 squeeze-activated 54:14, 54:19, 56:3, 63:8, 82:19 squeeze-actuated 56:19, 56:22, 64:13, 66:11, 82:1 squeeze-type 50:14 squeezes 50:5, 51:14, 55:7, 55:9 squeezing 45:10, 52:19, 61:1, 61:18, 65:9, 82:15, 84:5, 84:13, 88:14 stage 149:5, 149:14, 149:19, 150:8, 151:3, 151:7, 152:4, 152:10, 158:7 stages 150:18 stand 17:14, 166:13 standard 29:19, 30:6 start 51:4, 51:5, 83:19, 103:17, 116:15, 146:14, 150:5, 161:21, 162:8 started 53:19, 54:3,	63:1, 108:13, 161:17, 162:4 starting 39:5 starts 40:21, 41:5 state 2:10, 18:6, 26:14, 27:3, 67:19, 72:7, 76:11, 96:21, 109:10, 111:18, 122:20, 135:8, 142:5, 148:2, 168:19, 171:5, 171:33 stated 15:3, 19:12, 25:20, 71:20, 128:20 statement 74:7, 154:21 states 1:1, 117:19 stating 70:12, 127:16 stay 121:5, 126:4 steep 154:7 step 82:17 stick 37:11, 139:13 sticking 23:16, 36:13 still 17:14, 52:1, 52:21, 54:22, 56:14, 57:9, 57:11, 62:10, 66:14, 66:22, 68:9, 74:22, 77:21, 85:10, 90:12, 95:14, 97:2, 99:20, 101:6, 115:22, 133:1, 160:6,	160:12 stipulation 5:2 stop 165:11 stopping 48:22, 91:11 stops 107:4 storage 149:6 stowed 80:20 straight 60:7, 114:17 straw 84:10 stream 60:7 strike 57:10, 117:17, 124:15, 131:2, 140:13, 153:17 structural 27:8 structure 26:16, 27:6, 28:2, 33:6, 51:12, 54:8, 65:6, 67:5, 76:16, 76:20, 147:6 stuck 74:21 studied 16:8 study 17:4 stuff 46:17, 66:2, 109:4, 112:11 submitted 6:16, 8:5 substantially 112:22 success 11:1 suck 65:4, 84:14,	98:7, 99:21 sucked 99:18, 100:5 sucking 84:12, 97:11, 101:3 sufficient 80:19 sufficiently 34:7 suggest 120:12 suggested 54:13 suggesting 71:8, 160:13, 161:2 suggests 82:4 suitable 83:5, 83:15 suite 3:6 sum 142:12, 145:12, 145:13, 157:21 sun 128:11, 128:14, 128:17, 128:21, 129:1 support 8:5, 130:3, 131:15, 132:14, 132:17 supports 126:12 suppose 62:8 supposed 30:3, 164:11 sure 10:7, 13:3, 14:3, 15:11, 15:15, 24:20, 51:6, 77:14, 104:3, 105:2, 107:11, 110:19, 114:16, 132:17,
--	--	--	---

132:19, 133:3, 140:10, 141:11, 154:4 surface 70:15, 77:9, 87:3, 87:8, 89:4, 92:15, 92:19, 93:5, 93:19, 94:10, 102:18, 103:1, 104:8, 104:20, 106:14, 113:1, 113:14, 113:21, 114:1, 114:2, 116:8, 120:22, 121:22, 123:7, 127:4, 127:5, 132:10, 154:3, 154:13, 154:20 surfaces 68:20, 68:21, 69:1, 69:4, 69:12, 69:16, 70:6, 70:9, 70:13, 154:6 surgeon 104:11 surprise 106:18 surprised 121:6, 128:7 surrounding 27:8, 28:2, 97:8 surrounds 89:12 swallow 104:4 swallowing 104:7 switch 26:2, 91:11 sworn 5:4, 91:4, 171:7 system 118:22	tabbed 112:13 table 123:7, 123:9, 123:12, 124:7, 124:13, 124:17, 125:17, 126:10, 126:12, 126:17, 127:5, 127:12, 127:16 tabletop 37:20 tail 43:2 take 7:6, 9:22, 10:5, 16:1, 16:21, 35:3, 47:22, 49:15, 53:11, 55:15, 62:19, 66:10, 78:11, 82:18, 82:20, 93:9, 107:15, 107:19, 125:14, 129:5, 130:19, 134:2, 143:8, 154:6, 157:10, 161:12, 161:13, 170:7 taken 6:8, 24:6, 146:22, 171:9 takes 18:1, 155:18 taking 9:17, 11:8, 65:6 talented 46:12 talk 17:19, 46:15, 46:16, 46:17, 46:18, 46:20, 49:11, 49:19, 70:1, 85:15, 111:10, 122:6, 128:13, 128:15, 134:3	talked 53:18, 66:18, 71:2, 90:16, 101:8 talking 17:18, 20:11, 26:6, 30:5, 36:4, 37:4, 40:21, 41:5, 49:20, 50:11, 71:15, 85:15, 137:7, 138:9, 154:11, 156:14, 168:12 talks 40:19 tank 80:2 tap 36:22, 37:14 tape 47:22 taps 37:5, 38:9 teachings 111:19, 122:10 technical 27:3, 27:4, 33:4 technically 58:2, 105:15 teeth 63:5, 63:11, 64:16, 65:8, 66:6, 104:13, 104:18, 105:3, 105:13, 105:14, 106:3 tell 98:16 ten 91:7, 91:13 term 10:1, 10:3, 11:5, 11:18, 14:10, 14:21, 15:4, 15:6, 16:3, 17:18,	17:20, 19:8, 19:17, 20:2, 20:4, 21:18, 21:20, 24:7, 24:9, 25:13, 26:3, 28:16, 28:17, 32:9, 32:17, 42:14, 56:22, 123:21, 124:1 terminal 27:5, 33:5, 33:10, 76:16, 76:20 terminology 57:2, 117:13, 117:15, 118:6, 118:15, 120:12, 127:15, 131:21, 135:7 terms 9:9, 11:15, 12:18, 12:19 testified 5:5, 23:11, 33:13, 56:12, 58:16 testimony 23:15, 24:1, 34:8, 70:2, 140:11, 140:14, 171:10 text 12:14, 12:19, 13:5, 130:20 textbook 18:12, 109:14, 109:21, 110:14 th 171:27 thank 14:2, 17:9, 25:5, 56:21, 91:17, 109:5, 133:4, 170:11, 170:14 thereby 167:7
T			
tab 108:10			

therefore 21:6, 139:5 they'd 34:14, 101:5 thickness 98:17 thing 12:22, 25:13, 29:22, 42:5, 43:20, 45:15, 62:22, 64:10, 66:17, 81:19, 92:16, 92:20, 124:2, 134:18, 147:10 things 42:3, 44:21, 46:20, 48:10, 48:11, 48:14, 74:15, 103:17, 105:3, 118:9, 118:12, 120:17, 134:21, 150:19 thinking 122:3 third 102:5 thought 90:19, 106:20, 112:10, 150:13 three 119:7, 148:3, 150:22 throat 95:17, 103:7 through 7:11, 8:17, 12:21, 25:17, 39:11, 39:14, 41:12, 42:7, 42:20, 44:19, 47:18, 50:6, 50:15, 50:22, 51:17, 51:18, 55:9, 56:17, 62:1, 65:9, 68:17, 71:16, 84:9, 86:6,	98:7, 99:1, 99:9, 99:21, 100:8, 100:21, 101:2, 106:17, 116:20, 125:13, 126:6, 135:12, 141:8, 142:14 thrown 37:11 tilt 64:22 time 6:7, 19:22, 25:10, 49:14, 53:12, 55:16, 61:1, 62:7, 66:9, 107:12, 111:1, 126:18, 129:4, 170:12 tip 154:9, 157:4, 157:11, 158:13 tissue 99:10 today 5:22, 102:2, 122:2, 170:12 together 34:13, 41:17, 98:13, 115:2, 127:1, 144:16, 167:5, 167:17, 168:9 tolerance 165:1 tongue 95:19, 104:16, 104:22, 105:2, 105:3 took 16:7, 16:16, 35:18, 147:2, 160:17 top 67:16, 70:1, 153:21, 159:20, 159:22, 163:22, 164:19, 167:15	total 22:4 totality 48:2 touch 77:12, 102:14 touches 155:14 touching 28:14, 49:10, 105:10, 105:11, 105:14, 120:22 traces 155:4 tracing 18:14, 109:16, 110:1 trademark 1:1 translation 20:10, 22:17, 138:8 translational 22:11 transmit 64:16 travels 42:7 treat 14:18 trial 1:3 tried 47:12, 142:5 trip 81:18 trove 1:5, 5:14, 8:22 trove's 8:6 true 23:14, 57:14, 89:6, 113:2, 171:10 try 9:16, 35:20, 45:18 trying 74:18, 96:14,	98:1, 106:7, 106:19, 108:8, 118:18, 140:5, 141:3, 145:11, 162:1, 168:2, 168:16, 169:15, 169:21 tube 86:9, 89:10, 99:15, 99:17, 100:3, 106:15, 133:17, 134:6, 160:6, 160:10, 160:16 tubular 86:1, 86:5, 86:12 turn 26:3, 26:10, 34:4, 39:3, 50:1, 50:20, 67:13, 73:15, 85:6, 129:8, 136:19 two 9:15, 11:20, 12:14, 13:1, 13:22, 14:11, 25:17, 41:15, 42:2, 44:20, 52:11, 54:8, 115:18, 116:5, 118:8, 118:12, 118:22, 120:9, 120:17, 127:22, 128:10, 134:16, 138:3, 138:10, 138:21, 139:10, 141:6, 141:8, 141:11, 143:11, 144:8, 153:11, 162:2, 166:21 twofold 90:11 typical 9:19, 20:8, 117:1 typically 14:17, 15:12,
---	--	--	---

17:6, 21:6, 80:20, 116:7 typo 167:11 U uh-huh 154:12 under 35:1, 36:5, 36:10, 36:14, 37:2, 37:10, 45:12, 47:14, 58:19, 80:13, 81:15, 132:20, 133:10, 133:12 undergo 21:6, 116:20 undergoes 168:21 undergoing 18:13, 109:15, 109:22, 117:20 understand 5:16, 5:22, 8:12, 8:15, 11:18, 15:17, 18:7, 21:16, 26:15, 29:15, 31:3, 32:4, 61:12, 69:14, 70:3, 71:7, 74:15, 75:9, 76:18, 129:2, 132:1, 152:1, 154:10 understanding 9:3, 14:9, 15:17, 16:15, 70:16, 72:8, 110:5, 111:19, 122:9, 141:18, 169:2 understood 16:19, 28:17, 34:22, 74:9, 121:7, 135:6, 136:9, 138:12,	140:10, 146:12, 157:17 unfortunately 105:17 united 1:1 universal 116:4, 118:4 unless 61:10, 161:9, 161:11 unquote 18:9 upper 156:2 upright 61:9 upside 133:15 urge 51:17, 62:1 usage 121:9 use 7:19, 10:3, 10:11, 11:5, 14:9, 20:12, 23:3, 27:7, 28:1, 28:7, 30:12, 32:21, 33:1, 33:8, 45:3, 45:16, 46:10, 53:2, 53:4, 57:22, 63:8, 63:19, 63:22, 65:2, 65:13, 65:16, 66:3, 66:12, 67:12, 79:18, 81:14, 82:10, 82:18, 97:1, 97:4, 98:5, 107:6, 107:14, 118:16, 120:11, 144:20, 148:10, 149:21, 165:6 useful 64:21	user 26:19, 33:7, 36:11, 37:2, 37:16, 37:22, 38:3, 38:12, 39:15, 40:5, 42:8, 43:19, 50:5, 50:16, 51:14, 52:16, 52:18, 52:22, 53:3, 55:2, 55:7, 57:17, 58:9, 60:15, 60:22, 64:22, 71:10, 78:8, 79:5, 79:17, 81:5, 84:5, 84:9, 84:10, 84:21, 89:3, 89:9, 95:12, 97:4, 97:6, 99:14, 100:3, 100:10, 100:14, 100:16, 101:9, 101:14, 106:13, 126:3, 143:1, 143:4, 143:7 user's 27:7, 27:13, 27:18, 28:1, 28:4, 29:1, 31:6, 32:8, 32:21, 33:8, 41:13, 42:11, 44:12, 50:7, 50:16, 59:3, 68:8, 69:4, 70:10, 77:5, 77:10, 77:17, 77:19, 78:4, 79:5, 79:11, 79:14, 80:21, 81:5, 81:9, 82:6, 85:2, 85:4, 87:17, 87:20, 88:1, 88:6, 93:22, 94:12, 96:10,	96:22, 97:21, 98:12, 99:5, 107:17 user-facing 26:16 users 68:2 users's 69:17 uses 24:9, 57:3, 117:13, 123:21, 127:15, 135:7, 135:13 using 32:9, 54:8, 60:19, 67:4, 118:5, 123:22, 164:15 utilized 83:7 uvula 95:16, 103:7, 103:13 V valle 171:6, 171:16 vallee 1:14, 2:1, 4:5, 5:4, 5:8, 10:9, 17:9, 25:22, 49:18, 56:21, 58:16, 91:16, 98:10, 109:5, 110:3, 170:11 valve 12:10, 13:8, 60:16, 78:9, 107:2, 107:3 vary 33:14, 33:15, 34:9 verify 12:22, 14:16 version 10:11 versus 14:19
--	--	--	---

vertical 154:15 vertically 61:8 via 65:1, 99:10, 117:9, 123:13, 130:3, 130:15, 132:3 view 31:5, 72:20, 74:8, 74:20, 96:22, 139:9 violating 22:13 virtually 1:15, 2:2, 171:16 virtue 18:10, 109:13, 109:20 volume 51:16, 54:20, 60:19, 61:22	58:13, 63:3, 64:8, 64:9, 65:19, 67:16, 78:13, 118:10, 127:4, 133:22, 137:6, 140:1, 141:11 wanted 80:14, 89:8, 97:19, 127:1, 150:15 water 28:19, 29:3, 31:14, 36:17, 37:9, 38:8, 45:7, 45:9, 47:13, 47:15, 47:16, 49:3, 53:3, 55:7, 55:9, 57:18, 60:5, 63:8, 63:17, 63:19, 65:1, 79:6, 91:22, 103:11, 122:4, 132:10 way 16:18, 28:22, 42:18, 43:4, 44:9, 45:16, 53:3, 53:22, 54:3, 54:6, 55:20, 61:14, 64:7, 65:2, 65:5, 80:14, 95:7, 95:17, 96:2, 96:15, 99:22, 100:6, 107:7, 117:14, 128:19, 155:21, 160:1, 169:9, 171:23 ways 28:7, 52:11, 54:8 we'll 23:4, 43:22, 64:4, 139:13, 161:13	we're 10:4, 26:5, 30:4, 48:21, 85:12, 106:7, 143:14 we've 48:17, 122:2 wear 63:6 weeds 159:9 welcome 49:18, 91:16 went 44:19, 47:18, 82:16 wet 45:19, 46:1, 46:12, 60:3, 103:12, 103:19, 104:2, 104:3, 104:6, 104:17 whatever 81:18, 103:12 whereabouts 137:3 whereas 20:12, 66:8, 133:10 whereof 171:26 whether 16:2, 16:22, 25:12, 27:8, 28:1, 30:13, 30:20, 34:5, 35:2, 38:5, 38:11, 38:13, 42:9, 44:11, 47:13, 84:21, 88:5, 88:8, 88:21, 105:4, 105:6, 107:8, 124:13, 124:17, 126:17, 137:12 whichever 118:10 white 164:4	whole 9:13, 9:21, 12:22, 41:11, 64:11, 74:11, 74:16, 83:7, 116:4, 126:9, 134:18, 150:19, 165:2 withdrawing 97:10 within 12:19, 54:12, 81:4, 91:7, 112:2, 122:21, 148:2, 149:6, 171:4 without 50:16, 57:18, 58:1, 58:5, 58:17, 60:15, 61:19, 65:14, 70:22, 74:22, 79:18, 88:16, 101:10, 104:7 witness 4:3, 5:3, 11:10, 11:14, 12:2, 25:5, 53:13, 55:18, 91:13, 108:5, 108:12, 165:11, 170:9, 170:13, 170:14, 171:6, 171:11, 171:26 wonder 13:14 word 75:2, 148:10, 159:4, 168:13 worded 15:19 words 20:17, 69:1 work 61:13, 82:14, 84:18, 123:7 works 54:19, 118:20
W			
waist-mounted 78:18 waist-pack 79:16 wall 51:12, 55:22, 153:2, 153:5, 153:16, 153:21, 154:9, 156:9, 156:11, 156:14, 156:16, 157:1, 157:18, 158:5, 158:12, 159:22, 163:21, 164:20 walls 71:11 want 7:6, 13:7, 17:19, 26:3, 26:13, 48:13, 49:11, 52:8, 53:11, 56:13,			

worries 91:6 wouldn't 32:13, 37:15, 45:18, 63:19, 64:8, 64:13, 64:15, 65:15, 91:19, 92:7, 98:7, 103:18, 106:18, 128:8, 160:14 written 9:5, 11:17, 14:8 wrong 40:20, 108:13 wrote 74:12, 74:15, 75:8 y y-y 113:4 yeah 5:15, 6:6, 7:7, 7:9, 8:20, 12:16, 12:21, 14:6, 19:6, 24:2, 26:8, 27:21, 48:21, 51:4, 59:10, 67:4, 68:16, 68:19, 70:12, 71:6, 76:7, 76:9, 77:9, 77:14, 80:7, 84:11, 87:18, 87:22, 88:7, 89:1, 90:1, 92:11, 94:7, 95:15, 96:7, 96:12, 99:21, 100:13, 102:9, 103:19, 105:9, 110:22, 115:8, 117:7, 119:4, 119:5, 120:16, 122:3, 131:6,	131:20, 132:11, 134:13, 135:18, 136:1, 140:18, 142:7, 145:3, 145:11, 146:15, 147:11, 149:15, 150:11, 152:2, 155:8, 155:13, 155:16, 159:3, 159:10, 160:3, 160:16, 161:9, 161:12, 164:1, 168:6, 169:9 year 16:12 yellow 142:20 yep 5:19, 11:15, 13:14, 36:7, 39:9, 78:15, 119:15, 131:8, 132:13, 159:13 yourself 127:8 z z-z 113:18, 114:18 zachary 3:4 zero 150:9, 151:5, 152:11, 157:4 ' 's 82:20 . .0600 3:8 .6550 3:15 0 0/7/30 171:31	00140 1:11, 6:1 06 1:17, 171:17 1 10 4:15, 39:5, 39:10, 50:22, 56:2, 122:5, 122:6, 122:8 10,676,255 8:17 1001 4:12, 6:20, 6:22, 7:7, 7:13 1002 4:13, 6:13, 7:18, 7:19, 8:3 1006 4:18, 107:21, 108:2 1014 4:17, 76:1, 76:4 1015 4:14, 6:17, 7:18, 8:4, 8:11, 109:8 1016 111:21, 112:5 1017 4:19, 122:10, 122:17, 122:19 1018 4:20, 129:12, 129:17 1048 134:17 108 4:18 11 1:17, 25:3, 56:2, 129:8, 149:6, 153:2, 153:5, 153:16, 153:21, 156:9, 156:16, 157:1,	157:18, 163:21, 171:17 11,851,250 1:12, 6:2 110 68:2 117 125:16 12 80:20 122 4:19 129 4:20 13 13:13, 159:22 14 4:16, 12:7, 12:9, 12:11, 13:11, 73:10, 73:14, 90:2 15 56:2, 151:17, 158:22, 162:15 16 1:16, 171:17 17 68:17 171 1:21 18 136:20, 137:4, 137:7, 171:27 1800 3:6 19 39:5, 39:10, 136:19, 137:2, 137:3, 137:4, 137:11, 138:14, 139:2, 139:6, 139:10, 140:12, 140:16, 141:1, 141:2, 141:14, 141:20, 142:2, 142:10, 142:11, 142:12, 143:15, 144:1, 149:18,
---	---	---	--

155:3, 158:14, 161:13	148:2, 150:22	26 81:4	42 130:4, 130:8, 130:10, 131:1, 131:9, 131:13, 134:20, 135:10, 136:7, 136:12
2	250 6:4, 6:5, 6:6, 6:9, 6:21, 7:1, 7:3, 7:13, 8:12, 8:16, 9:4, 9:10, 10:2, 11:5, 11:13, 11:16, 12:11, 13:12, 14:7, 14:22, 15:1, 15:5, 16:1, 16:3, 16:7, 16:21, 18:8, 18:20, 19:3, 19:8, 19:16, 20:3, 21:19, 22:19, 24:9, 25:14, 25:19, 26:4, 26:6, 29:18, 39:3, 49:20, 50:4, 50:22, 53:8, 57:12, 58:17, 61:17, 67:20, 75:18, 82:2, 82:5, 82:8, 82:16, 82:20, 83:1, 83:14, 110:6, 111:11, 166:3	27 78:21	4250 1:22
20 86:1	21 56:7, 143:18, 144:3, 144:4, 144:7	28 78:21	44 26:11, 32:20, 123:18
56:7, 68:17, 90:9, 137:3, 152:18	22 80:19, 81:3, 112:18, 113:7, 113:21, 114:3, 114:10, 115:9	29 78:20, 79:3, 119:14	45 26:13, 26:14, 32:19, 69:22, 70:1, 159:1, 162:16
2014 4:15, 10:15, 10:20	23 113:6, 113:9, 113:22, 114:4, 114:10, 114:22, 115:10, 115:14, 115:20, 117:8, 117:20, 137:13, 138:18, 147:13	3	46 67:16, 72:1, 72:2, 72:7, 74:15, 130:15, 130:17, 131:3, 131:6, 131:10, 131:18
2025 1:11, 6:1	24 81:3, 138:17, 139:5, 139:8, 139:11, 139:18, 140:17, 141:16, 141:22, 142:14, 147:15, 150:7, 151:12, 152:18, 155:5, 161:14, 162:5, 168:4	30 170:17, 171:17	47 67:13, 76:12
2026 1:16, 171:17, 171:27	25 40:21, 80:15, 147:19, 148:1,	31 40:19, 78:6, 78:8, 159:1, 159:12, 159:13, 159:14, 159:22, 160:3, 161:2, 161:8, 162:15, 167:16	48 75:11, 75:14, 75:16, 132:3, 132:15
21	255 8:18, 8:22, 9:4, 9:9, 10:2, 10:5, 10:7, 10:10, 10:16, 11:3, 11:4, 11:9, 11:12, 11:16, 12:1, 12:4, 12:7, 12:9, 14:5, 14:7, 15:6, 16:5, 16:11, 17:1, 24:7, 24:10, 24:14, 24:17, 25:7, 25:14, 25:16, 26:6	32 25:3, 40:19, 76:5, 77:4, 77:9, 77:15, 78:9, 129:19, 130:2, 130:7, 130:13, 143:15	49 50:1, 78:14
22	2555 3:13	33 119:14, 129:22, 130:14, 132:3, 132:15, 132:20, 136:6, 136:10	5
23		34 119:14, 129:22, 130:14, 132:3, 132:15, 132:20, 136:6, 136:10	50 125:10
24		35 73:15, 73:16, 90:1, 90:3	51 85:7, 85:15, 86:4, 88:1, 170:17, 171:17
25		36 162:20, 163:9, 163:14, 163:20	52 96:18, 97:17, 101:16, 106:11, 125:3, 127:11
		4 132:4	53 123:14, 123:17, 124:19, 128:5
		40 82:22, 163:10, 165:13, 166:2, 167:3	54 51:7, 56:6
		41 168:18	

6 6 40:21 6,032,831 83:10 6,070,767 83:10 60 159:1, 162:16, 162:18 600 3:6 615070 1:20 64108 3:14 65 13:13 67 50:21, 51:2, 56:6	816.474 3:15 82 124:9, 125:3 84 125:18 86 50:15 88 132:4, 132:9	
7 7 40:21 70 125:18, 150:20, 159:1, 159:10, 159:14, 161:18, 165:16, 167:4, 167:12, 167:14, 167:16, 168:3, 168:9, 169:6 714.830 3:8 72 51:8, 83:8 73 4:16 75 162:16, 162:18 76 4:17	9 9 61:21 90 150:19, 150:20, 162:16, 162:18, 163:9, 164:17, 164:19, 165:19 92626 3:7 936 68:16	
8 8 18:6, 109:11		