1 IN THE UNITED STATES DISTRICT COURT

2 FOR THE DISTRICT OF DELAWARE

3 BECKMAN COULTER, INC.,)
)
4 Plaintiff,)
) C.A. No. 24-945-CFC
5 v.)
)
6 CYTEK BIOSCIENCES, INC.,)
)
7 Defendant.)
)
8

9

10 Thursday, August 21, 2025
12:58 p.m.
11 Markman Hearing

12

13 844 King Street
Wilmington, Delaware
14

15 BEFORE: THE HONORABLE COLM F. CONNOLLY
United States District Court Judge
16

17

18 APPEARANCES:

19
RICHARDS, LAYTON & FINGER
20 BY: CHRISTINE D. HAYNES, ESQ.
BY: FREDERICK L. COTTRELL III, ESQ.
21
-and-
22

23

24

25

1 APPEARANCES CONTINUED:

2

3 WILMERHALE
BY: OMAR KAHN, ESQ.
4 BY: JEFFREY DENNHARDT, ESQ.

5 Counsel for the Plaintiff

6

7

8 MORRIS NICHOLS ARSHT & TUNNELL
BY: KAREN JACOBS, ESQ.
9

10 -and-

11 COOLEY LLP
BY: REUBEN CHEN, ESQ.
12 BY: ADAM PIVOVAR, ESQ.
BY: DUSTIN KNIGHT, ESQ.
13 BY: BETSY FLANAGAN, ESQ.
BY: ROSALYND UPTON, ESQ.
14

15 Counsel for the Defendant

16

17 _ _ _ _ _ _ _ _ _ _

18

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

20

21 (Proceedings commenced in the courtroom beginning at

22 12:58 p.m.)

23 **THE COURT:** Good afternoon. Please be seated.

24 **MS. HAYNES:** Good afternoon, Your Honor.

25 Christine Haynes on behalf of the plaintiff, Beckman

1 Coulter. With me from my office is Fred Cottrell.
2 Also with me are my cocounsel, Omar Khan and
3 Jeffrey Dennhardt from Wilmer Hale, and from our client,
4 Mony Ghose and Mike Levy.
5 **THE COURT:** All right. Thank you.
6 Ms. Jacobs.
7 **MS. JACOBS:** Good afternoon, Your Honor.
8 Karen Jacobs from Morris Nichols for Cytek Biosciences,
9 and we have here with us today Reuben Chen.
10 **MR. CHEN:** Good afternoon, Your Honor.
11 **MS. JACOBS:** Adam Pivovar, Dustin Knight,
12 Betsy Flanagan, Rozzie Upton, all from Cooley.
13 And Mr. Chen Mr. Pivovar, and Mr. Knight will
14 be taking the lead in the arguments today.
15 **THE COURT:** Okay. Great. Thank you.
16 Just give me a second.
17 Okay. Let's begin. Plaintiff, you guys want
18 to go first?
19 **MR. KHAN:** Thank you, Your Honor. Omar Khan
20 for plaintiff Beckman Coulter.
21 So this is a case as Judge, you know, about
22 flow cytometers. And with the Court's indulgence, I'm
23 just going to talk a little bit about the basic concepts
24 just to flow into the rest of the claim construction,
25 just for a couple of minutes.

1 So what we have on Slide 3 of the
2 demonstratives, which I think we've handed up to the
3 Court now, is sort of a conceptual drawing that's often
4 depicted in textbooks or in treatises about the very
5 high-level conceptual operation of a flow cytometer.
6 And, essentially, you have a laser -- cells passing
7 through a flow cell, and then the laser is hitting the
8 flow cell, the cells in the flow cell, and there are
9 dyes on the cells that then emit fluorescence or scatter
10 that are then detected by the detectors.
11 And that's sort of a conceptual overview,
12 like I said, that's often depicted or discussed in
13 various treatises and textbooks and tutorials.
14 Here, in the prior art and commercial
15 embodiments that were present at the time of the
16 invention, flow cytometers were rather large and bulky.
17 I don't know whether we are having some technical
18 issues. We're good.
19 So were rather large and bulky, often took up
20 half of a room, or third of a room. And one of the
21 things that the prior art flow cytometers had was a
22 photo multiplier tube. This was a detector agent, the
23 detector all the way to the right of the conceptual
24 figure that I had, Your Honor, at the beginning.
25 And the photo multiplier tubes were fragile,

1 they were large, and they were expensive. And this was
2 a recognized problem in the industry at the time.
3 At the time it was also known that there were
4 these smaller, more efficient, more sensitive detecters
5 known as APDs, or Avalanche photodiode. And there was a
6 problem in the industry of being able to -- not being
7 able to use APDs in flow cytometers. And that's really
8 one of the problems that the patents are trying to
9 solve.
10 And what they do, and Dr. Chen invented,
11 essentially the combination, a unique WDM, a wavelength
12 division multiplexing scheme that, essentially, combines
13 a WDM architecture with APDs where the light that comes
14 in is peeled off in successive layers through this
15 zigzag pattern. And there's also a picture of what
16 became the ultimate commercial embodiment of the Beckman
17 Coulter CytoFLEX products, which have been an incredible
18 success in the marketplace.
19 Just to see what this looks like in practice,
20 we have a short video. This is just a commercial video
21 from the Beckman Coulter website that shows how the flow
22 cytometer works.
23 So if we sort of zoom in and then open up the
24 hood, what you have, essentially, is the -- this is the
25 fiber that's coming from the flow cell. So light is

1 passing through here. These are the optical filters,
2 these are the mirrors. And the APDs are back here, all
3 the way at the end.
4 And each WDM has optical and detector
5 components and this improves, as we have been talking
6 about, the sensitivity.
7 The CytoFLEX was marketed as the first
8 commercial flow cytometer that had advanced photo --
9 Avalanche photo multiplier tubes -- or APDs, sorry.
10 And, again, the idea was to peel back each of
11 the wavelengths in successive intervals every time you
12 go through the zigzag pattern. And on the video again,
13 on the commercial website, we have a depiction of that
14 as well.
15 So, again, the light is coming through from
16 the flow cell. This is the zigzag pattern that's
17 created. The light is bouncing around between the
18 filters and the mirror. This is the mirror, and a
19 curved mirror on this end. These are the filters. You
20 can see on the back individual wavelengths of light are
21 coming through and being detected by the APDs on this
22 end.
23 And so this was the design that was one of
24 the embodiments that was described in the specification.
25 Very importantly for this case, and for the claim

1 construction proceedings here today, that embodiment was
2 described very clearly as an exemplary embodiment, and
3 it's described as illustrative and nonlimiting.
4 There's not going to be in this case a
5 statement of the invention or a disclaimer or a
6 definitional statement that's going to limit any of the
7 claim terms here to that embodiment.
8 **THE COURT:** So would you agree that there is
9 no preferred embodiment in the written description?
10 **MR. KHAN:** This is one of the preferred
11 embodiments.
12 **THE COURT:** I thought "preferred" is you have
13 one.
14 **MR. KHAN:** You can have multiple preferred
15 embodiments in the --
16 **THE COURT:** Do you have any case law that says
17 that?
18 **MR. KHAN:** I believe there is case law, and
19 we're happy to submit it to the Court, if that would be
20 of interest.
21 Usually, that's how the specifications, Your
22 Honor, are structured, which is you have sort of a
23 number of different preferred embodiments in the
24 specification that are described and disclosed. And in
25 this case, I think even in this patent, the word

1 "preferred" is used to describe a number of different
2 disclosures and different embodiments.
3 **THE COURT:** Do you want to show me? You're
4 saying in the written description itself, it refers to
5 multiple embodiments as preferred?
6 **MR. KHAN:** So --
7 **THE COURT:** I don't think the word "preferred"
8 is in the '582 patent, is it?
9 **MR. KHAN:** It's described sometimes as
10 exemplary.
11 **THE COURT:** I know. But you said it was
12 preferred. I mean, that's what you said.
13 **MR. KHAN:** Right.
14 **THE COURT:** When I do a word search of the
15 '582 patent, the word "preferred" doesn't come up, but my
16 search engine might be wrong.
17 **MR. KHAN:** I don't doubt, Your Honor, that the
18 word "preferred" is not used.
19 **THE COURT:** Oh, okay. Well, I thought that
20 was pretty important. So, actually, the patent doesn't
21 identify the preferred embodiment?
22 **MR. KHAN:** It identifies a number of exemplary
23 embodiments.
24 **THE COURT:** Right. So I heard that.
25 **MR. KHAN:** Okay.

1 **THE COURT:** Just answer my question.
2 **MR. KHAN:** Yes.
3 **THE COURT:** It doesn't identify a preferred
4 embodiment, correct?
5 **MR. KHAN:** It doesn't use those words, but
6 it's pretty clear, Your Honor, from the overall
7 disclosure, that Figure 25 is being discussed and
8 depicted as a preferred embodiment, if we can use that
9 term. And there are exemplary embodiments, of which that
10 is one, for sure.
11 **THE COURT:** But the case law, it matters,
12 right? Case law distinguishes between an exemplary and a
13 preferred embodiment, right?
14 **MR. KHAN:** Correct, Your Honor.
15 **THE COURT:** How does it do so?
16 **MR. KHAN:** I'm sorry?
17 **THE COURT:** How does it do so? You just said
18 it does distinguish it. Tell me how.
19 **MR. KHAN:** One of the ways is that the claims
20 can't -- of course, can't be limited to -- either to
21 exemplary or preferred embodiments.
22 But in this case, Your Honor, I think what
23 the Cytek is doing is essentially arguing that Figure 25
24 is the invention itself.
25 **THE COURT:** Put that aside. Go to the legal

1 point. You agreed, you said the case law distinguishes
2 between preferred and exemplary. Can you tell me how it
3 does?
4 **MR. KHAN:** I think -- you know, it's not
5 exactly going to be sort of crystal clear in the case
6 law, Your Honor, just to be honest.
7 I think the idea is that in the
8 specification, there are going to be -- there are
9 certain embodiments that are the focus of the
10 specification that are disclosed as sort of what
11 ultimately in this case became the commercial
12 embodiment, right? And those might be viewed as
13 preferred, even if they're not termed as preferred.
14 **THE COURT:** Let me ask you this, then. I'm
15 not getting a real straight answer.
16 Are all the exemplary embodiments preferred
17 embodiments?
18 **MR. KHAN:** I don't think we could go that far,
19 Your Honor. Right.
20 **THE COURT:** Okay. So how do I tell the
21 difference in the written description of the '582 patent
22 what's a preferred embodiment versus what's an exemplary
23 embodiment?
24 **MR. KHAN:** Yeah. Absent the use of the term
25 "preferred" --

1 **THE COURT:** Well, we've already agreed the
2 term "preferred" is not in there, right?
3 **MR. KHAN:** Right.
4 **THE COURT:** I mean, isn't that a starting
5 point?
6 **MR. KHAN:** Yes. Yes, Your Honor.
7 **THE COURT:** Okay. So since the term
8 "preferred" isn't in there and since you are saying there
9 are preferred embodiments that are disclosed in the '582
10 written description, and since you're saying there's a
11 difference between preferred and exemplary, tell me, what
12 should I do when I read the '582 patent to discern what's
13 a preferred embodiment versus what's an exemplary
14 embodiment?
15 What do I do? How do I do that?
16 **MR. KHAN:** I think absent the use of the word
17 "preferred," it would mostly be sort of how much of the
18 specification is discussing the various embodiments, and
19 Figure 25 is subject of a significant amount of
20 discussion.
21 So I think it would be fair, even though it
22 doesn't say the word "preferred," that it is a
23 preferred.
24 For purposes of claim construction, the
25 preferred embodiment, essentially, the claims can't be

1 limited to the preferred embodiment, they can't be
2 limited to exemplary embodiments. For purposes of claim
3 construction, sometimes, under some circumstances, there
4 is case law that says the claims should be interpreted
5 to encompass the preferred embodiment.
6 And so that -- to the extent it matters for
7 the Court, that's the implication of preferred or
8 exemplary. Usually that's the only -- that's one of the
9 few implications of that outcome.
10 **THE COURT:** Hold up, please.
11 **MR. KHAN:** Yes.
12 **THE COURT:** I'm going to ask you to clarify.
13 I mean, the transcript, which obviously we're doing it
14 real time, so it may not be exactly right. The court
15 reporter is pretty good, but it says you said, according
16 to this transcript, For purposes of claim construction,
17 the preferred embodiment, essentially, the claims can't
18 be limited to the preferred embodiment. They can't be
19 limited to exemplary embodiments. For purposes of claim
20 construction, sometimes, under some circumstances, there
21 is case law that says the claims should be interpreted to
22 encompass the preferred embodiment, and so that to the
23 extent it matters for the Court, that's the implication
24 of preferred or exemplary.
25 No offense, but I still don't know what you

1 are saying.

2 **MR. KHAN:** Right.

3 **THE COURT:** So I want you to help me out.

4 So I understand that there's cases out there

5 that say you can't interpret a claim to exclude a

6 preferred embodiment.

7 **MR. KHAN:** Exactly, Your Honor.

8 **THE COURT:** Okay.

9 I don't know of a case that... and I'm

10 asking. There might be one. Is there a case that says

11 you can't construe a claim to not cover an exemplary

12 embodiment?

13 **MR. KHAN:** There's not. I don't believe that

14 there's that kind of a case, correct, Your Honor.

15 **THE COURT:** Okay. And how many claims do we

16 have in this patent? I mean, we have a bunch of patents,

17 so let's say the '582.

18 Fair enough, we have more than one claim for

19 every patent?

20 **MR. KHAN:** That is correct, Your Honor.

21 **THE COURT:** Do we have more than one

22 independent claim for every patent?

23 **MR. KHAN:** Yes, sir. Yes, Judge.

24 **THE COURT:** Okay. So then, why shouldn't I...

25 And you agree under the case law, this is

1 really clear, each claim is a separate invention, right?
2 **MR. KHAN:** Each claim is a separate invention
3 that, in principle, could be directed to a different
4 exemplary embodiment, yes.
5 **THE COURT:** Right. So if I have at least two
6 independent claims for every patent, they are independent
7 of each other, why should I be worried in interpreting
8 one claim about whether I read or don't read out an
9 embodiment?
10 **MR. KHAN:** Generally speaking, Your Honor, we
11 shouldn't be worried about that.
12 **THE COURT:** Okay.
13 **MR. KHAN:** Right? And I think sometimes what
14 we're trying to illustrate to the Court in the briefing,
15 and we're going to do try to do today, is we're going to
16 use some aspects of what we're now calling the most
17 exemplary embodiment, if I can put it that way.
18 **THE COURT:** Oh, "the most exemplary." Okay.
19 And that's Figure 25?
20 **MR. KHAN:** And that, I think, would be
21 Figure 25.
22 **THE COURT:** And it's the most exemplary?
23 **MR. KHAN:** Well, I don't -- I am using that
24 colloquially. I'm saying that that is an --
25 **THE COURT:** I don't even know what colloquial

1 means, in terms of patent construction, so...
2 **MR. KHAN:** Right. What I'm basically trying
3 to suggest, Your Honor, is that Figure 25, we would
4 agree, is the embodiment in the patent that is the
5 subject of greatest discussion.
6 It is -- you're right, it is only described
7 as an exemplary embodiment. The word "preferred" I
8 don't think is in there.
9 But for our purposes, Your Honor, the claims
10 don't -- should not be limited to any of the exemplary
11 embodiments or to any of the preferred embodiments. And
12 I think that's what we're saying.
13 And -- but there are -- you know, aspects of
14 Figure 25 may be relevant to understanding particular
15 claim terms and understanding how they should be
16 understood in the intrinsic evidence in light of the
17 state of the art.
18 **THE COURT:** Right. But it would be perfectly
19 consistent with the case law for one claim, one
20 independent claim to read on Figure 25 and for another
21 independent claim of the patent to not read on 25, right?
22 **MR. KHAN:** That would be consistent with the
23 case law.
24 **THE COURT:** That would be allowed?
25 **MR. KHAN:** That would be allowed in a -- it

1 would not impermissible in a multi-patent, multi-claim,
2 multi-independent claim situation. There's no
3 requirement that every single independent claim cover the
4 preferred embodiment.
5 **THE COURT:** Right.
6 **MR. KHAN:** You are right about that, yes.
7 **THE COURT:** All right. So I can read the
8 patent. I can read at least one independent claim in the
9 patent to not cover Figure 25.
10 **MR. KHAN:** Yes, Your Honor.
11 **THE COURT:** Okay. All right. Go ahead.
12 **MR. KHAN:** And just to pick up on that point,
13 you know, Figure 25 being described as exemplary and, you
14 know, the -- there is this discussion about whether there
15 can be convergence in the relay. The zigzag has a relay
16 element.
17 And the patent expressly talks about how the
18 concave mirror in the WDM can be used to converge and
19 relay the beam of light.
20 So that is not a particularly -- you know, as
21 far as we're concerned, right, there's no statement of
22 the invention that would preclude the concave mirror
23 resulting in a convergence as part of the relay.
24 And that's going to become important for a
25 number of different terms as we go down the patent.

1 So in terms of the disputed claim terms, we
2 have nine sets of disputed claim terms. From our
3 perspective, Your Honor, each of the terms is either a,
4 you know, straightforward term, word that a jury could
5 mostly understand, first and second portion, image.
6 And then the other terms, what they are
7 seeking to --
8 **THE COURT:** Why don't we wait see if we can --
9 **MR. KHAN:** Sure.
10 **THE COURT:** -- figure this out, the technical
11 glitch out.
12 **MR. KHAN:** Maybe I should stand over here.
13 **THE COURT:** Okay.
14 **MR. KHAN:** Okay. And then the other terms are
15 terms that comprise one, two, or three words,
16 essentially, in each instance, in our view, are used in
17 the industry in the science in a particular way. They're
18 standard terms that are used in the intrinsic evidence in
19 exactly the same way.
20 As I've said already, there's no statement of
21 the invention that would limit these terms. There's no
22 disclaimer. There's no definition that would limit
23 these terms.
24 And as a result, what Cytek is, in our
25 perspective, trying to do is mostly limit -- overly

1 narrow or overly limit the claims and in ways that,
2 quite frankly, don't seem particularly helpful to a jury
3 in how to figure out how to parse out infringement or
4 non-infringement, or the invalidity issues.
5 **THE COURT:** Okay.
6 **MR. KHAN:** So if I could just start in to --
7 **THE COURT:** Well, you're going to go to the
8 claims right now?
9 **MR. KHAN:** Yes.
10 **THE COURT:** All right. So what I would think,
11 why don't we do this, and maybe...
12 Do you have a similar kind of overview?
13 **MR. CHEN:** I do, Your Honor.
14 **THE COURT:** So why don't you do your overview,
15 and they can figure out if they can get their computer
16 working or what the issue is, and maybe were going to
17 find out it's both computers, so meaning the court is the
18 problem.
19 **MR. CHEN:** Thank you, Your Honor.
20 Good afternoon, Reuben Chen for Cytek
21 Biosciences.
22 I'll go ahead and begin with a brief
23 background that will help inform the proposed
24 constructions today.
25 **THE COURT:** Right. And do you have... it

1 looks like you might have slides too?
2 **MR. CHEN:** I do.
3 **THE COURT:** Great, thank you.
4 **MS. FLANIGAN:** May I approach, Your Honor?
5 **THE COURT:** Yeah, please.
6 **MR. CHEN:** Thank you.
7 **THE COURT:** Thank you.
8 **MR. CHEN:** As you heard counsel say, these
9 patents are directed to flow cytometers, and flow
10 cytometers are used to analyze cells or particles that
11 flow through a flow channel.
12 And how this basically works is there's a
13 light source that is shined onto the cells or particles,
14 then the light will actually both scatter, as well as
15 fluoresce. The scattered light will be detected by what
16 are called forward and side scatter detectors.
17 And importantly, the separate fluorescent
18 light will be sent to what are called wavelength
19 division multiplexers. Or more accurately, they're
20 actually demultiplexers because what they do, Your
21 Honor, is they separate wavelengths of light.
22 And so you see in the upper right-hand corner
23 there that there are these detectors, there are these
24 filters that separate the wavelengths of light, and then
25 separate detectors that detect the different color

1 bands, and then that's used by a computer with
2 algorithms to analyze the fluorescent light, as well as
3 the scattered light.
4 Now, flow cytometers are not new. The first
5 flow cytometer was developed in 1965, Your Honor. The
6 use of WDMs in flow cytometers is also not new. That
7 was introduced in the 1990s and early 2000s.
8 Our client, Cytek, actually had some early
9 flow cytometers that used WDMs.
10 What BEC's asserted patents are directed to
11 is a specific configuration of flow cytometers that have
12 particular WDM components that are borrowed from the
13 optical communications industry and then put into a flow
14 cytometer.
15 And we see that from its own patents which
16 state: "WDM techniques well-established in the optical
17 communication industry can be readily adapted for
18 fluorescent light detection."
19 And let me just explain, because the optical
20 path of the light here is key to these inventions. It's
21 key to the -- these inventions, the optical path of the
22 light.
23 So BEC's patents describe that there's a
24 laser, 501, that shines laser light, which is then
25 relayed off of this component 503, and then it travels

1 through the flow cell, which is in 60 there. The tube
2 there is the flow cell within 60, which is an objective.
3 And what happens when the light hits that
4 flow cell is that it both scatters and it fluoresces.
5 The scatter light, as it goes through this flow cell,
6 409, in this particular Figure 38, both is forward
7 scattered and side scattered.
8 The forward scattered light is relayed off of
9 this 406 mirror and then detected by a detector, 408.
10 That's a forward-scatter detector, 408. The
11 specification makes that very clear.
12 The side scattered light goes directly
13 sideways, so there's no need for a optical relay -- a
14 separate optical relay element there. And it's detected
15 by the side-scatter detector 413.
16 What happens to the fluorescent light? Well,
17 the fluorescent light --
18 **THE COURT:** By the way, just a simple thing,
19 if you stick on this figure.
20 **MR. CHEN:** Yes.
21 **THE COURT:** So the reason why it goes sideways
22 is because there's holes?
23 **MR. CHEN:** The reason it goes sideways is
24 because it -- when it hits the particles, it splits. It
25 goes into all directions, forward direction, side

1 directions.

2 **THE COURT:** When it hits 409, it goes in all

3 these directions?

4 **MR. CHEN:** That's right. It goes in all

5 directions. That's correct.

6 **THE COURT:** But then the reason why it goes 90

7 degree...

8 And by side, you mean, like, 90 degrees,

9 right?

10 **MR. CHEN:** 90 degrees and sometimes a little

11 bit off of 90 degrees, Your Honor.

12 **THE COURT:** Okay. But it's doing that...

13 Like is it going up?

14 **MR. CHEN:** It's going, yes, up in that

15 direction.

16 **THE COURT:** Going down?

17 **MR. CHEN:** It's also -- it's also going down

18 as well. And in the back there, there's a --

19 **THE COURT:** Does it emanate out of the

20 optimizer? In other words, is it because I'm seeing a

21 see-through box, but, in reality, it would only have

22 holes on the side and in the front?

23 **MR. CHEN:** Oh, it is -- it is either glass or

24 plastic, Your Honor, so --

25 **THE COURT:** So the entire thing is

1 see-through?

2 **MR. CHEN:** That's correct, Your Honor.

3 **THE COURT:** So what about the stuff that's

4 going up and down? It's just not measured?

5 **MR. CHEN:** Up and down, that's correct, Your

6 Honor.

7 **THE COURT:** Okay.

8 **MR. CHEN:** That's correct.

9 **THE COURT:** I see. But you could measure it.

10 You just don't need to.

11 **MR. CHEN:** You could have a design that

12 measures it. That's correct, Your Honor.

13 **THE COURT:** Why do you do the side and forward

14 only? Do you only do one side, by the way or do you

15 do --

16 **MR. CHEN:** No. This particular embodiment,

17 you're doing both. You're doing both.

18 **THE COURT:** Okay.

19 **MR. CHEN:** Yes. You're doing -- the forward

20 scatter is 408 because it's forward scattering, but then

21 it's being reflected off 406, being detected by 408. So

22 the patent describes 408 as the forward scatter detector.

23 **THE COURT:** Right.

24 **MR. CHEN:** 413 is the side scatter detector

25 because that's --

1 **THE COURT:** There's only one of them, right?
2 **MR. CHEN:** There's only one of them.
3 **THE COURT:** I'm just curious. Sometimes I get
4 curious. Why does it only go up one side? Why doesn't
5 it go up the side?
6 **MR. CHEN:** Well, it does go off the other
7 side.
8 **THE COURT:** There's only one 413. Right?
9 There's not multiple 413s.
10 **MR. CHEN:** That's correct, Your Honor. Yeah.
11 So what happens when the light goes off the
12 other side is there's a concave mirror 415 that will
13 then gather that light and then actually direct it back
14 out into that upwards direction. That's the --
15 **THE COURT:** So the entire wall of 415 is a
16 mirror?
17 **MR. CHEN:** That's correct.
18 **THE COURT:** So it is, it's diverting anything
19 coming out. Anything going in --
20 **MR. CHEN:** Yeah.
21 **THE COURT:** -- getting bounced right, gets
22 bounced back left by the mirror?
23 **MR. CHEN:** That's correct.
24 **THE COURT:** Okay.
25 **MR. CHEN:** It's a concave mirror 415 that is

1 bouncing light upwards through -- there's an aberration
2 corrector plate which we'll talk about later. That's 414
3 in this figure, and then it hits the side scatter
4 detecter 413, Your Honor.
5 **THE COURT:** So it's funneling everything to
6 that one side.
7 **MR. CHEN:** That is correct, yes. That's side
8 scattered light. And then there's also fluoresced light.
9 And that fluoresced light will be gathered, like I said,
10 by the concave mirror and aberration corrector plate,
11 which are now 601 and 602 in this Figure 31.
12 And then that will be output to an optical
13 fiber 852, which then travels to the wavelength division
14 multiplexer, which you see in the upper right-hand
15 corner there. And Figure 25 is BEC's annotations of the
16 WDM.
17 And we don't agree with all their annotations
18 here, but it is helpful to walk through their
19 annotations, which shows the -- how the optical path of
20 light is manipulated by various WDM components.
21 It's actually very important that this is a
22 specific configuration that in informs the claim
23 construction here.
24 So 901 is where the optic fiber is, and the
25 light is coming out of the optical fiber. And the

1 component 902 collimates that light and collimation runs
2 through the entire WDM, that collimated beam runs
3 through the entire WDM.
4 What happens next, after the light is
5 collimated from 902, it's received by dichroic filter
6 903. What a dichroic filter does, it allows certain
7 range of wavelengths to travel through it and reflects
8 the other wavelengths of light.
9 So here, the red-colored band is allowed to
10 pass through the dichroic filter. The component 904,
11 which isn't particularly relevant for purposes of claim
12 construction, further filters -- it's called a band-pass
13 filter, and it further filters the red light. Basically
14 further narrows the range of red light, sharpens the
15 light.
16 And then the light, then, is received by 905,
17 which is a focusing lens, which focuses the light. And
18 this is where we have some disagreement with the way
19 that counsel has drawn the light, but there's a focusing
20 of the light onto the semiconductor or detector -- not
21 necessarily a semiconductor detector, but a detector,
22 and they give the example of the detector being a
23 semiconductor detector there.
24 And then the reflected light, which has the
25 other color bands, will travel to a relay element 907,

1 which could be a mirror, and that mirror will then send
2 the other color bands all the way down to the second
3 dichroic filter, which will pass another range of light
4 through the focusing lens to a second semiconductor
5 detector and, you know, so on throughout the system,
6 Your Honor.
7 Now, one thing I want to point out -- and
8 this is BEC's patent family. It's actually not the
9 complete patent family because there are additional
10 continuations that have since issued -- is that the
11 earliest U.S. patent is the '412 patent. It issued on
12 August 29, 2017.
13 Cytek's first accused product -- not its
14 first product, but it's first accused product -- was
15 released in June of 2017, mid 2017. Notably, the -- and
16 it received its own patents. It has its revolutionary
17 technology, not relevant for purposes of today, but
18 you'll learn more about that as the case continues.
19 Notably, the '412 patent is not asserted in
20 this case. And what we see is that in subsequent
21 patents, what Beckman Coulter has done is to expand the
22 scope of the claims in a way that's not supported by the
23 specification. You'll hear more about that today, Your
24 Honor. Thank you.
25 **THE COURT:** All right. Thank you.

1 Want to start with the first term.
2 Looks like their computer worked. Lot of
3 pressure on you guys.
4 **MR. KHAN:** Pressure is on.
5 **THE COURT:** Might be up here.
6 All right. We will have to do it the
7 old-fashioned way.
8 **MR. KHAN:** All right. Your Honor, the first
9 set of terms is "first" and "second." At Slide 17, we
10 have -- at Slide 17, we've set out the parties' competing
11 constructions in the case.
12 If the -- Slide 18 lays out what we think is
13 of -- is the dispute here. So the question is whether
14 "first" and "second" identify different elements in a
15 set or whether they instead require sequencing or
16 ordering.
17 And if we start with just the basic
18 proposition from the Federal Circuit, Your Honor, at
19 Slide 19, this is a *3M* case. It is very common patent
20 law convention to just use "first" and "second" to refer
21 to various elements in the claims. That's the starting
22 presumption that we're looking at.
23 If we go to the claims at Slide 20. The
24 claims repeatedly and throughout use other language, not
25 "first" and "second," to refer, essentially, to whether

1 or not there's a sequencing order in connection with the
2 claim limitation.
3 **THE COURT:** All right. I'm good with the
4 claims. There are other claims that clearly distinguish
5 sequentially or temporally "first" and "second." I'm okay
6 with that. I'm not that persuaded by it.
7 So what I want you to do is I want you to
8 focus on the written description and tell me where in
9 the written description would it be clear to me that
10 "first" and "second" are not limited or don't have a
11 temporal or sequential limitation, essentially. All
12 right?
13 **MR. KHAN:** Right. I think the crux of their
14 argument, Your Honor, essentially --
15 **THE COURT:** Don't worry about their argument.
16 You just show me in the written description.
17 **MR. KHAN:** Sure. In the written description,
18 Your Honor, Slide 24.
19 **THE COURT:** Okay.
20 **MR. KHAN:** So here's use of "first" and
21 "second," essentially to refer to -- there's a T-junction
22 that's created, T coupling 703, and "first" and "second"
23 is used not to refer to any sequence, but just first
24 fraction received by the first outlet and the second
25 fraction received by the second outlet. No ordering, no

1 sequence.

2 If we go to Slide --

3 **THE COURT:** Hold up.

4 **MR. KHAN:** Yeah.

5 Go to Slide 25, Your Honor, now we're into

6 the optical components. So there's a description of the

7 composite microscope objective, which we're going to

8 hear more about later this afternoon.

9 And it describes that the aspheric lens has a

10 first zone with negative optical power and a second zone

11 with positive optical power, radially inside the first

12 zone. The second zone inside the first zone. So that's

13 not sequence or order.

14 At the bottom of Slide 25, there's a

15 description of how the dichroic filter arrangement

16 separates the beam of light into a first branch and a

17 second branch. Those are, again, not sequence, not

18 order.

19 And then this may have been, Your Honor, on

20 Slide 26 what Your Honor was getting at -- Judge, you

21 were getting at, with the notion of whether there's a

22 preferred embodiment or whether that matters or not.

23 We're just -- the only reason to point out

24 and use Figure 25 in this context is that at least in

25 Figure 25, the use of the word "first" is not actually

1 the first of the focusing optical elements. The use of
2 the word "first," if you did it in sequence or order,
3 it's the second.
4 The written description refers to the
5 sequentially or ordered first focusing element as the
6 initial. So, again, in sequence or order, "first" is
7 being used to refer to the second in the sequence.
8 Claim -- Slide 27, Your Honor, we're just
9 illustrating what, essentially, Cytek is trying to do by
10 striking the words from the claims and substituting
11 words such as "initial" and "second sequential,"
12 where -- to the extent that there's a relational
13 requirement between the various limitations that should
14 be set out in the other limitations of the claims, which
15 use words like "additional" or "following" or other
16 words like that. There is case law --
17 **THE COURT:** I don't need case law. Let's hear
18 from them. All right?
19 **MR. KHAN:** Okay. Thank you.
20 **THE COURT:** Thank you.
21 By the way, I'm cutting you short because
22 we've got a lot to do.
23 **MR. KHAN:** Yes, Your Honor. Understood.
24 **THE COURT:** I only need to hear what I need to
25 hear.

1 So where I want you to start is, won't you
2 concede if I limited my focus to just the claims, they
3 should win? I mean, the claims --
4 **MR. CHEN:** I do not because all the claims
5 that they point to, Your Honor, are readily
6 distinguishable and actually do not support their
7 position. I'm happy to walk through those. There's,
8 like, three claims that they point to, and I can address
9 those really quickly. And then I can also address the
10 specification. I can start with the specification,
11 actually.
12 **THE COURT:** Well, do the claims. I'll let you
13 start with the claims and just show me. Because I think
14 their arguments are pretty compelling about at least some
15 of the claims.
16 **MR. CHEN:** Understood, Your Honor.
17 **THE COURT:** Mind you, I mean, it seems to me I
18 ought to put less weight on the claims anyway because,
19 you know, that's where the attorney manipulation comes in
20 and, you know, it just really bothers me to say, well,
21 I'm going to the fact that one claim is sequential and
22 another is not is really probative, you know, because
23 some lawyer came up with that. I really need to turn to
24 the written description to find out what the invention is
25 talking about, it seems to me.

1 **MR. CHEN:** I completely agree with you,
2 especially since these are subsequent claims that came
3 after the original application, Your Honor. That's
4 correct.
5 **THE COURT:** All right. You think you can
6 distinguish them anyway, so go ahead.
7 **MR. CHEN:** I believe I can, Your Honor.
8 **THE COURT:** All right.
9 **MR. CHEN:** Let's start with '582 patent,
10 dependent Claim 6, which I don't have the language on
11 here.
12 **THE COURT:** Hold up. I've got it.
13 **MR. CHEN:** This is their argument where there
14 is a first and second branch.
15 **THE COURT:** Hold on. You want to go to...
16 Hold on. We go to the '582.
17 **MR. CHEN:** '582 patent, dependent Claim 6.
18 This is one of the claims that they point --
19 **THE COURT:** I'm there.
20 **MR. CHEN:** Okay. Thank you, Your Honor.
21 And so they talk about a first branch and a
22 second branch.
23 And may I actually approach the screen, Your
24 Honor? I think it might be a little easier.
25 **THE COURT:** Yes.

1 **MR. CHEN:** Okay. So what they are referring
2 to here is that there is a first branch and a second
3 branch of light after the light reaches the dichroic
4 filter.
5 And my point is that it's irrelevant which
6 one you're going to call the first --
7 **THE COURT:** Hold up. Sorry. So I just want
8 to get my bearings here on the diagram.
9 So would you point to the first optical
10 filter in this Figure 25. What's that?
11 **MR. CHEN:** Absolutely. So the first optical
12 filter, which is supported by the specification, is this
13 first dichroic filter, 903 --
14 **THE COURT:** Okay. But I think he...
15 You don't think that, right? Or do you? Do
16 you agree with that?
17 **MR. KHAN:** I believe that that specification,
18 that's the first filter. I was --
19 **THE COURT:** Okay. All right. So you agree
20 with it.
21 Go ahead.
22 **MR. CHEN:** And this is the second dichroic
23 filter. And so --
24 **THE COURT:** Wait. The second is which one?
25 **MR. CHEN:** Is the blue one.

1 **THE COURT:** You agree with that, Mr. Khan?
2 **MR. KHAN:** Yes, Your Honor.
3 **THE COURT:** Okay.
4 **MR. KHAN:** The specification described --
5 **THE COURT:** Thank you. Go ahead.
6 **MR. CHEN:** Okay. And what Beckman Coulter has
7 pointed to is that there is a first branch and a second
8 branch of light.
9 And what I'm saying, it's irrelevant which
10 one you call the first branch and the second branch
11 here, and here's the reason why.
12 The light is being split at the same point
13 and the same time. That's very different when the --
14 when you're talking about the flow of light being
15 received first by a first dichroic filter and a second
16 dichroic filter.
17 So that's a readily distinguishable way to
18 distinguish their '582 Claim 6 argument.
19 **THE COURT:** Okay. Hold up. Give me a second.
20 Okay. So, in other words, in Joe six-pack
21 terms, Claim 6 doesn't have to be read that the first
22 and second filters are sequential because you can read
23 it consistent with Figure 25 to say that the first and
24 second rays -- or what do they call it -- first and
25 second branches are actually sequentially simultaneous?

1 **MR. CHEN:** That's correct, Your Honor.
2 **THE COURT:** Or not sequential, actually. They
3 occur at the same time.
4 **MR. CHEN:** Oh, that -- that's correct.
5 **THE COURT:** Do you dispute that, Mr. Khan?
6 **MR. KHAN:** No, Your Honor, but --
7 **THE COURT:** Okay. Thank you.
8 **MR. CHEN:** Thank you, Your Honor.
9 **THE COURT:** I will give you your chance. You
10 get to come back. Don't worry.
11 All right. So, yeah, okay, so Claim 6, not
12 that good.
13 **MR. CHEN:** Okay.
14 **THE COURT:** I was thinking of another claim
15 that was more compelling but you go ahead.
16 What else?
17 **MR. CHEN:** '443, dependent Claim 10, they
18 point to that.
19 **THE COURT:** Yep. Hold up.
20 **MR. CHEN:** This is our Slide 16.
21 **THE COURT:** Yep.
22 **MR. CHEN:** And I have the claim language here
23 this time.
24 So they argue that based on claim
25 differentiation, when they wrote the words "initial" --

1 and, again, this is in a subsequent patent, that that --
2 they distinguish that from "first." Not true.
3 When we look at their infringement
4 contentions with regards to the claim term "initial
5 filter," this is what they say. They say: "Any of the
6 filters in a coarse wavelength division multiplexer is a
7 first filter."
8 Any of them. Any of them in a series can be
9 the first one, or according to them, which is actually
10 opposite of what we heard from counsel a few minutes ago
11 when we were talking about Figure 25 and the first
12 dichroic filter being 903 --
13 **THE COURT:** Well, maybe that's important, but
14 I think you're going off on, from my mind, a tangent, and
15 yet this is a pretty compelling point.
16 Because when I read this, I thought this was
17 one of their better arguments.
18 **MR. CHEN:** Right.
19 **THE COURT:** So, and what you're telling me
20 is...
21 Was this in the brief that you had?
22 **MR. CHEN:** I believe we addressed this in the
23 brief. No? Okay. Sorry, Your Honor, if we didn't, so
24 yeah.
25 **THE COURT:** Yeah, I think I would have

1 remembered this.
2 **MR. CHEN:** Okay.
3 **THE COURT:** Okay.
4 **MR. CHEN:** My apologies, Your Honor.
5 **THE COURT:** Hold on a second.
6 I don't remember it. Okay. So it wasn't in
7 the brief.
8 All right. Well, actually, so what you're
9 saying, as I understand it here...
10 And what slide is this?
11 **MR. CHEN:** Slide 16, Your Honor.
12 **THE COURT:** Why don't you let Mr. Khan speak
13 for a second, please.
14 **MR. CHEN:** Sure. Of course.
15 **THE COURT:** Thanks.
16 So, Mr. Khan, I told you I thought the claims
17 kind of went in your favor, and actually I had this
18 claim in mind.
19 **MR. KHAN:** Right.
20 **THE COURT:** But I've got to admit, reading
21 your infringement contentions of February 14, 2025,
22 causes me to think that maybe I gave you too much credit.
23 So help me out.
24 **MR. KHAN:** Yes, Your Honor. So --
25 **THE COURT:** And just to be clear, why, right?

1 Because the reason why I thought it was a compelling
2 argument in the briefing was because Claim 10, which
3 depends from Claim 9, which depends from Claim 1, speaks
4 of, in Claim 10, of a first filter that is the initial
5 filter.
6 **MR. KHAN:** Right.
7 **THE COURT:** And since that's claimed, again
8 putting aside the potential for attorney manipulation and
9 whatnot, but since it's claimed, that would suggest that
10 you can have a first filter that's not the initial
11 filter.
12 **MR. KHAN:** Right.
13 **THE COURT:** I thought that was pretty
14 compelling argument. But then it looks like in your
15 infringement contentions you are saying, no, no, no, no.
16 Any of the filters in a coarse wavelength division
17 multiplexer is a first filter.
18 It's not. So can you respond to that, what's
19 going on?
20 **MR. KHAN:** I think, Your Honor, the issue here
21 is that these are the...
22 So, first of all, the infringement
23 contentions here are incomplete. So first --
24 **THE COURT:** They're what? Sorry.
25 **MR. KHAN:** They're incomplete, right? So

1 first, what we're talking about here is the first filter
2 is an initial filter of the set of filters.
3 **THE COURT:** Right.
4 **MR. KHAN:** So the dispute we're having with
5 them is about which one would qualify as an initial
6 filter.
7 And, you know, that is not a question --
8 that's not a dispute about which one is the first
9 filter. The -- and so that's a different dispute from
10 the one that's before the Court right now.
11 **THE COURT:** No, no, no. Sorry.
12 **MR. KHAN:** Yeah.
13 **THE COURT:** I think I ought to press you back
14 on this.
15 **MR. KHAN:** Sure.
16 **THE COURT:** So the infringement contention is
17 for Claim 10. And Claim 10 reads, in relevant part, "The
18 first filter is an initial filter of the set of filters."
19 And then the contention made by your client
20 is that any of the filters in a coarse wavelength
21 division multiplexer is a first filter, including
22 filters which are not immediately subsequent to the
23 collimation lens along the optical paths.
24 In other words, you're not limiting it to
25 what I would have thought was an initial filter because

1 you've got a different definition of initial. So, in
2 other words...
3 Yeah, well, I've got to say, I don't
4 understand it.
5 **MR. KHAN:** Yeah, let me try a different way.
6 First, this is referring to Claim 9. So the
7 Claim 9 does not have the initial filter limitation,
8 right?
9 So this is saying any Claim 9, when we were
10 looking at Claim 9, any of the first filters can be a
11 filter that's not subsequent to the collimation lens,
12 right?
13 **THE COURT:** Yeah.
14 **MR. KHAN:** So this is not saying that -- which
15 one is the first -- which one is the initial filter.
16 Right?
17 **THE COURT:** Okay. So did you have...
18 Then maybe, because it is cut off, did you
19 then clarify that for Claim 10.
20 I mean, do you have your entire contention?
21 Can I see it?
22 **MR. KHAN:** I don't believe they're in the
23 record, Your Honor. This is not in the record.
24 **THE COURT:** I know, but this is really
25 important.

1 **MR. KHAN:** Yeah.
2 **THE COURT:** You know, I found pretty
3 compelling the "initial."
4 **MR. KHAN:** Right.
5 **THE COURT:** The use of the word "initial" in
6 Claim 10. I thought it was your most compelling
7 argument.
8 **MR. KHAN:** Right. And what I would say, Your
9 Honor, just to back up, is that to the extent that
10 there's an infringement dispute over what is or is not
11 initial filter, that's not an issue before the Court
12 today.
13 The only issue before the Court is whether
14 first and second across the claims that --
15 **THE COURT:** No. Time out. Time out.
16 **MR. KHAN:** Yeah.
17 **THE COURT:** You're right infringement's not at
18 issue right now.
19 **MR. KHAN:** Right.
20 **THE COURT:** But what's at issue is the
21 construction of first filter.
22 **MR. KHAN:** Right.
23 **THE COURT:** And, necessarily because of the
24 argument you've made, the construction of initial.
25 **MR. KHAN:** Yeah.

1 **THE COURT:** So I thought initial would have
2 meant first temporally, or first sequentially. But
3 according to your infringement contentions of
4 February 14, 2025, that's not the case. You're not
5 reading initial to be first sequentially or temporally.
6 **MR. KHAN:** We are -- I don't have the rest of
7 the contentions in front of me, Your Honor, and we can
8 find them. But if you look at the claim, it says
9 "initial filter of the set of filters."
10 **THE COURT:** Right.
11 **MR. KHAN:** I have no doubt that in that
12 instance what we did was identify the first sequential
13 filter in the set of filters.
14 **THE COURT:** Why don't you pull up the
15 Interrogatories. Because the excerpts that are presented
16 here would suggest the... would not suggest that at all.
17 **MR. KHAN:** Right.
18 **THE COURT:** In fact, it would suggest the
19 opposite.
20 **MR. KHAN:** Right. But it's referenced to
21 Claim 9 here.
22 But anyway, we can pull that up and take a
23 look in the break. But the basic point is initial
24 filter would be the initial, the first sequential in the
25 set of filters.

1 **THE COURT:** Okay.

2 **MR. KHAN:** And we can agree with that, to the

3 extent that the Court is concerned about that, I can

4 agree to that today. And --

5 **THE COURT:** Well, then I'm concerned about the

6 contention you served.

7 So do me a favor, we will come back to it.

8 You pull up the contentions, and then I'll have Mr. Chen

9 come back.

10 **MR. KHAN:** Okay.

11 **THE COURT:** All right?

12 **MR. KHAN:** Thank you.

13 **THE COURT:** Thank you.

14 So look, you know, until they come up with

15 it, I can understand...

16 I mean, look, very good argument. It wasn't

17 in your brief, so I've got to figure out what that

18 means.

19 What else do you have as far as the claims

20 before we get to the written description?

21 **MR. CHEN:** Absolutely, Your Honor. And I do

22 have the rest of contentions if you want to see them.

23 **THE COURT:** Yeah, actually, but give them to

24 them and then let's hand them up.

25 But you agree, what they're saying in the

1 contentions, and that's why you put it up there, right?
2 **MR. CHEN:** Absolutely.
3 **THE COURT:** To use my language is that in
4 their infringement contention with respect to Claim 10,
5 they are saying initial doesn't mean first sequentially
6 or first temporally.
7 **MR. CHEN:** That's correct.
8 **THE COURT:** It could be anything.
9 **MR. CHEN:** That's correct, Your Honor.
10 **THE COURT:** Yeah, okay.
11 **MR. CHEN:** That is absolutely correct. And my
12 apologies for not including it in the briefing. And we
13 can certainly submit it as an additional exhibit after
14 the hearing if Your Honor would like to see it.
15 **THE COURT:** Well, I opened up by saying I'm
16 not putting a lot of stock in their claim anyway. That
17 was the most compelling one I had.
18 So why don't you move to the written
19 description.
20 **MR. CHEN:** Okay. I will, Your Honor. So
21 moving to the written description.
22 As Your Honor already saw earlier, the
23 written description supports Cytek's --
24 **THE COURT:** This Figure 25 --
25 **MR. CHEN:** Right.

1 **THE COURT:** -- basically, or it's agnostic.
2 It would support both sides in a way, right?
3 **MR. CHEN:** It's an exemplary embodiment, but
4 the specification actually refers to a first and second
5 dichroic filter and labels the first dichroic filter as
6 the initial filter 903 and a second dichroic filter as
7 the second dichroic filter.
8 **THE COURT:** Oh, I see what you're saying.
9 Right.
10 **MR. CHEN:** Thank you, Your Honor.
11 Yes. So --
12 **THE COURT:** For instance, it's agnostic, you
13 know, as first branch, second branch, because the
14 branches are simultaneous.
15 **MR. CHEN:** Oh, I agree, yes. Yeah. Yeah. I
16 wanted to point out that issue with respect to the claim
17 that they're relying on, it doesn't help them.
18 **THE COURT:** Right. But where it helps you,
19 Figure 25, is that in terms of its discussion of the --
20 **MR. CHEN:** Correct.
21 **THE COURT:** -- first and second, the second
22 follows sequentially from the first. It's sequentially
23 after.
24 **MR. CHEN:** Absolutely, Your Honor.
25 **THE COURT:** Okay.

1 **MR. CHEN:** That's correct.

2 **THE COURT:** Yep.

3 **MR. CHEN:** And so BEC pointed to two passages

4 in the specification. If I can actually go to their

5 slides.

6 **THE COURT:** Well, do you want to point to

7 anything else? I agree Figure 25 supports you. I

8 totally get that.

9 By the way, what do you think about it, is

10 there a preferred embodiment in this patent?

11 **MR. CHEN:** No, Your Honor. It's an exemplary

12 embodiment, like Your Honor stated. And, actually, we do

13 address that.

14 They make an argument that we are excluding

15 the preferred embodiment. Again, it's not a preferred

16 embodiment. That's their argument in their briefing.

17 We are not excluding that embodiment. The earlier

18 parent, '412 patent, has a claim that maps onto

19 Figure 25.

20 So like Your Honor stated, as long as there's

21 one independent claim that maps onto the embodiment,

22 it's not being excluded, and it's not being excluded

23 here, Your Honor.

24 **THE COURT:** Right. Now, the reason why you

25 say, actually, figure...

1 Let me step back. You both say Figure 25
2 supports your respective positions. Right?
3 **MR. CHEN:** Yeah.
4 **THE COURT:** Okay. And the reason why you say
5 Figure 25 supports your position is because of the
6 labeling of the dichroic filter.
7 **MR. CHEN:** Dichroic filter. Also other
8 components, Your Honor, not just the dichroic filter.
9 **THE COURT:** Yeah?
10 **MR. CHEN:** That's actually in our briefing.
11 **THE COURT:** Yep.
12 **MR. CHEN:** There's a reference to --
13 **THE COURT:** Hold up.
14 **MR. CHEN:** This is on Page 15 of the Joint...
15 **THE COURT:** Yep.
16 **MR. CHEN:** It's actually Page 14 of the Joint
17 Claim Construction Brief.
18 So there's also a reference to a collimating
19 optical element 902, which we'll get to later on,
20 because we believe that's a means-plus-function term,
21 but they label that as a collimating optical element and
22 then they refer to a second optical element being 907,
23 Your Honor.
24 So that's again, you have first dichroic
25 filter, second dichroic filter. You've got one optical

1 element here, you have another optical element, 907. So
2 you have first optical element, 902, and second optical
3 element, 907, Your Honor.
4 **THE COURT:** Hold up.
5 Okay. So are there any other instances in
6 the written description, besides these two, where first
7 and second are shown to be sequential?
8 **MR. CHEN:** Not that we are relying on, Your
9 Honor. There may be other places, but we also do point
10 to the claim language as well, and that's cited in our
11 briefing and one example --
12 **THE COURT:** When you say the claim language,
13 go ahead and give me the claim language you're talking
14 about.
15 **MR. CHEN:** As one example, Claims 1 and 5 of
16 the '106 patent make very clear that there is a sequence
17 to the first and second as they're used throughout this
18 claim.
19 **THE COURT:** Right.
20 **MR. CHEN:** Happy to diagram it. But in the
21 interest of time, I would actually like to address the
22 two passages of the specification that they pointed to in
23 their argument, Your Honor.
24 **THE COURT:** Yeah. Just give me one second.
25 You can do that.

1 Okay. So the first one is the T at
2 Figure 14; is that right? Right there?
3 **MR. CHEN:** Correct. Their Slide 24. They
4 talk about a first fraction and a second fraction.
5 What we're talking about here is the liquid.
6 We're not talking about a optical path. We're just
7 talking about separating liquid into a first fraction
8 and second fraction. Has nothing to do with the claim
9 language here with the WDM, the wavelength division
10 multiplexer or de-multiplexer that we're talking about
11 here. We're not talking about the optical path. We're
12 talking about liquid.
13 Their second argument is on Page 25. They
14 talk about a first zone and second zone. I'm going to
15 use my slides for a later term to explain what is going
16 on here.
17 **THE COURT:** I just want to follow up, though,
18 on the liquid, right?
19 **MR. CHEN:** Yes.
20 **THE COURT:** I'm not a science guy, but if you
21 shove liquid down a tube, and it hits the T, it's going
22 to go in both directions. I mean, I think it has to go
23 in both directions, right?
24 **MR. CHEN:** That's correct.
25 **THE COURT:** Right.

1 If you shove light down a tube, it's just
2 going to reflect back at you, isn't it? Or what
3 happens? I don't know. That's what I would have
4 thought. In other words, this is not comparable at all.
5 **MR. CHEN:** So if there's a dichroic filter,
6 it's going to allow a color band through and it's going
7 to reflect the other color band through.
8 The same argument that I made --
9 **THE COURT:** No. No. But Figure 14, 703 is
10 what? It's a tube, right?
11 **MR. CHEN:** That's correct. It's a tube of
12 liquid. And what happens is --
13 **THE COURT:** Like a pipe?
14 **MR. CHEN:** There is a first fraction and
15 there's a --
16 **THE COURT:** First fraction, liquid. Okay.
17 **MR. CHEN:** First fraction and a second
18 fraction. And it doesn't matter which one -- again, it's
19 actually very similar to the argument about first branch,
20 second branch. It's happening actually at the same time.
21 But the greater point here is this passage of
22 the specification has nothing to do with the optical
23 path.
24 **THE COURT:** No. No, I agree. I think you're
25 right. But I just want to understand. You started

1 mentioning the dichroic filter again. You mentioned that
2 as if it were analogous to the pipe of 703.
3 **MR. CHEN:** It's not.
4 **THE COURT:** I wouldn't have thought that. I
5 thought the analogue to 703 with optical stuff would be a
6 ray or something. I don't know, what's the analogue?
7 **MR. CHEN:** Yeah. Yeah. I think -- I'm not
8 sure there's a clean analogue. I'm not sure there's a
9 clean analogue, Your Honor. I was just saying that it
10 does hit that T at the same time, and so you have a first
11 branch -- you have a first fraction and a second
12 fraction.
13 In that sense, it's similar to a first branch
14 and a second branch, but I agree it's not a perfect
15 analogy when you're talking about a dichroic filter
16 because that has to deal with the optical path of light.
17 Here, we're talking about a liquid, and it's not
18 relevant to the claim language here.
19 **THE COURT:** Okay. Go ahead now. Next,
20 they've got the zone. This is their Slide 25.
21 **MR. CHEN:** Correct, Your Honor.
22 **THE COURT:** Okay. What do you say to that?
23 **MR. CHEN:** So what they're talking about here,
24 Your Honor, is this piece, right here, which we're going
25 to talk about more later.

1 **THE COURT:** What slide is that?
2 **MR. CHEN:** This is Slide 101 of Cytek Bio's
3 demonstratives.
4 **THE COURT:** Okay.
5 **MR. CHEN:** They're talking about this piece
6 602, which is an aberration corrector plate. And what
7 they're talking about is that there are negative and
8 positive zones. And you can see right here through the
9 little cutouts, negative and positive zones, the surface.
10 Right?
11 **THE COURT:** No. I don't know what I'm looking
12 at. What do you mean?
13 **MR. CHEN:** Oh, sorry. So, Your Honor, do you
14 see my laser pointer?
15 **THE COURT:** Yeah.
16 **MR. CHEN:** There's negative and positive zones
17 here. There like is a shape -- see where the curve is?
18 **THE COURT:** Oh, yeah. I see the curve. Okay.
19 **MR. CHEN:** Yeah. So that's what that's
20 referring to. And, again, the light is hitting those at
21 the same time. It's -- they are different zones, sure,
22 but it's not relevant to the claim language here. The
23 claim language isn't claim zones, right? That's not in
24 the claims. The claims are talking about dichroic
25 filters, talking about semiconductor detectors, first

1 semiconductor detector, second semiconductor detector.
2 It's not talking about zones.
3 And so my point is, similar to the first
4 branch, second branch argument, the light is hitting
5 this aberration corrector plate at the same time. And
6 this first zone and second zone is just saying there are
7 different -- there are different zones on that surface
8 of the aberration corrector plate.
9 **THE COURT:** Okay. Now, the second example
10 they give, the first branch and the second branch is what
11 you pointed out, or it's not, right? Or is it? Is it
12 the same issue that's occurred that's illustrated in
13 Figure 25?
14 **MR. CHEN:** No, that's claim -- claim language,
15 Your Honor. The first branch and second branch was in
16 their claim language.
17 And then first fraction, second fraction was
18 in Figure 14 that Your Honor pointed out.
19 **THE COURT:** But look at their Slide 25.
20 **MR. CHEN:** Yes, Your Honor.
21 **THE COURT:** So you just dealt with the first
22 box, which is first zone and second zone.
23 **MR. CHEN:** Oh, oh. Yes. You are correct,
24 Your Honor.
25 **THE COURT:** The second box, I just want you to

1 address, where they are referring to the separation of
2 the beam of light into a first branch and a second branch
3 of distinctive colors.
4 Is this description what you pointed out is
5 in Figure 25 where the two branches are actually
6 occurring simultaneously?
7 **MR. CHEN:** Correct, your Honor. My apologies
8 for not noticing that second part on Slide 25. But, yes,
9 that is absolutely correct.
10 **THE COURT:** Okay. All right. Anything else?
11 **MR. CHEN:** No, Your Honor. Thank you.
12 **THE COURT:** All right. Mr. Khan.
13 **MR. KHAN:** Thank you, Your Honor.
14 So just to level set where I think we are
15 now, is there's an acknowledgment from Cytek that in the
16 specification, first and second are used sequentially,
17 albeit they have reasons why it may not be relevant.
18 But just the words "first" and "second" are used not to
19 denote sequence or order.
20 **THE COURT:** Wait. Wait. What?
21 They acknowledge that at least one of your
22 examples, actually two. They acknowledge that two of
23 your examples about first and second do not necessarily
24 require sequencing.
25 **MR. KHAN:** Actually, I heard all three.

1 **THE COURT:** What's the third?
2 **MR. KHAN:** The first and second fractions with
3 the liquid.
4 **THE COURT:** Yeah.
5 **MR. KHAN:** The first and second zones.
6 **THE COURT:** Yeah.
7 **MR. KHAN:** First and second branches.
8 **THE COURT:** Oh. Okay. Yes.
9 **MR. KHAN:** All three, right?
10 **THE COURT:** Yes.
11 **MR. KHAN:** So the specification uses the words
12 first and second not to refer to a sequencing or order,
13 but to just refer to one element of a set of elements.
14 So I think we -- I'm going to talk about Figure 25 in a
15 second, Your Honor.
16 **THE COURT:** Yeah, but the difference is...
17 Well, first of all, I think we can dispense
18 with the zone and the liquid. They're just not
19 relevant.
20 We're talking about the optical path, right?
21 **MR. KHAN:** The zone is in the optical path.
22 **THE COURT:** It might be in it, but it is...
23 Actually, I mean, I'm trying to figure out if
24 there's a way to articulate it, but it seems to me very
25 obvious that the referencing to the zone at Column 51,

1 Lines 45 through 50, does not help your...
2 I just don't see how it's relevant.
3 **MR. KHAN:** So the composite microscope
4 objective is what is collecting the light --
5 **THE COURT:** Right.
6 **MR. KHAN:** -- from the flow cell. So it is in
7 the optical path.
8 And I think Mr. Chen's diagrams actually
9 showed the light flowing through that composite
10 microscope objective. So it is in the optical path.
11 **THE COURT:** Is it bouncing it back, right? I
12 mean, is it coming in and bouncing off the concave mirror
13 or is it going through it?
14 **MR. KHAN:** The composite microscope objective
15 is there to collect the light that's coming off the cell
16 that's going through the flow cell. And then, as we
17 discussed earlier, there are -- it's passed down to the
18 fiber optic cable, and then essentially to the detectors
19 downstream through the WDM.
20 But the composite microscope objective is
21 definitely in the optical path. It is responsible for
22 collecting light from the flow cell.
23 **THE COURT:** All right. We will come back to
24 the objective branch or to the concave mirror and the
25 corrector plate.

1 **MR. KHAN:** And so then I want to talk about
2 Figure 25, Your Honor.
3 **THE COURT:** Yeah. That's the one you need to
4 talk about, which you just said is the more exemplary
5 embodiment in the patent.
6 **MR. KHAN:** It is discussed the most, yes.
7 **THE COURT:** Right. And it seems pretty clear
8 it is discussing first and second sequentially.
9 **MR. KHAN:** Not quite, Your Honor.
10 So with respect to the filters, it may be
11 saying that the first filter is in sequence -- is also
12 the first in sequence.
13 **THE COURT:** Right.
14 **MR. KHAN:** With respect to the branch of the
15 optical path, remember Mr. Chen agreed that first branch
16 and second branch in the optical path, it splits.
17 **THE COURT:** Agree.
18 **MR. KHAN:** So it's not referring to a sequence
19 order there.
20 And then if we can look at Slide 25, right,
21 of -- sorry, Slide 26 of Beckman's presentation, the
22 focusing lenses all the way to the right, right, the
23 focusing lenses, there's an initial focusing element and
24 then a first focusing element.
25 **THE COURT:** Right. And your point is that 908

is --

MR. KHAN: Exactly. That's the 906 and 908 point.

THE COURT: Right.

MR. KHAN: The 908 is referred to as the first focusing element, but the initial focusing element is 905.

THE COURT: Right.

MR. KHAN: And so in Figure 5, we've discussed today, Your Honor, three different aspects of Figure 5. I would submit two out of three of them are usage of first and second in a nonsequential way.

We've talked about the filters. Maybe the filters first and second are used in sequence. Not in the branches, not in the focusing element.

The specification is pretty clear, Your Honor, that first and second are not exclusively limited to use or usage in any aspect of the device in a sequential or ordered manner.

THE COURT: Okay. Now, hold on. The claimed language that's at issue is the first what?

MR. KHAN: It is -- they have claims that are referring to first and second branch, first and second filters, first and second -- they want first and second to be applied to all of the elements that are in --

1 **THE COURT:** Okay. Would you agree at least,
2 though, that when it comes to filters, first and second
3 should be sequential?
4 **MR. KHAN:** No, Your Honor.
5 **THE COURT:** Well, how can you not when the
6 only...
7 Well, then, can you point to any other filter
8 besides the two filters identified in Figure 25 where
9 first and second are used non-sequentially?
10 **MR. KHAN:** I don't think we have that, Your
11 Honor. But the answer to that is we don't limit to the
12 preferred embodiment.
13 So the first and second throughout the
14 specification is used in a nonsequential way. In one
15 instance, perhaps, it's use in a sequential way.
16 **THE COURT:** Right. But you said "preferred
17 embodiment," and you keep doing it. We don't have a
18 preferred embodiment.
19 **MR. KHAN:** Oh, sorry. Exemplary embodiment.
20 **THE COURT:** But I think it's telling that you
21 keep referring to it that way. It really is. And your
22 whole brief is telling. When you keep saying it's the
23 preferred embodiment, it's not reading it out.
24 And, in fact, looking at *Phillips*, I'm
25 supposed to read the claims in light of the

1 specification, in light of the written description.
2 What could be more probative than the written
3 description?
4 **MR. KHAN:** Agree with you.
5 **THE COURT:** And the only filters that are
6 discussed as first and second are sequential.
7 **MR. KHAN:** Right. And, but there are
8 focusing -- so just because the words "first" and
9 "second" in that instance are used in a sequential way,
10 doesn't mean that the written description as a whole is
11 intending to use "first" and "second" in a sequential
12 way. We've got lots of instances of the written
13 description not using the words "first" and "second" in a
14 sequential way.
15 **THE COURT:** Okay. But I just want to sum up.
16 Can you point to any instance in the written description
17 where "first" and "second" are used to describe a filter
18 and not used sequentially?
19 **MR. KHAN:** I can look into that, Your Honor.
20 I don't think there is such an example.
21 **THE COURT:** I don't think there is either.
22 **MR. KHAN:** But, and then I wanted to come back
23 to the claim -- the infringement contentions that --
24 **THE COURT:** Yes, you should come back to that.
25 **MR. KHAN:** So, essentially, in that instance,

1 Your Honor, I am willing to stipulate here that initial
2 set -- initial filter of a set of filters is going to be
3 the first in the sequence.
4 **THE COURT:** All right. Well, you --
5 **MR. KHAN:** So I don't think the contentions --
6 you know, they are irrelevant in --
7 **THE COURT:** Well, wait. Time out. Time out.
8 Time out.
9 **MR. KHAN:** Yes.
10 **THE COURT:** Why did you take that position in
11 your infringement contentions in February? Did you write
12 them?
13 **MR. KHAN:** We wrote them, Your Honor.
14 **THE COURT:** Why did you write them?
15 **MR. KHAN:** The contentions are referring to --
16 they're saying look up to Claim 9. In Claim 9 it doesn't
17 say initial filter.
18 So we're incorporating by reference the prior
19 discussion of Claim 9, and we're saying look at Claim 9,
20 any one of them can be the first filter, and then what
21 follows is a discussion of the initial filter.
22 And I think we can show you that in a letter
23 submission to the Court. We don't have the -- none of
24 this was briefed, so it's sort of hard to understand
25 what to do.

1 But what I'm willing to say, Your Honor, is
2 the initial filter of a set of filters is going to be
3 the first in the sequence.
4 **THE COURT:** Okay.
5 **MR. KHAN:** So, hopefully, that resolves the
6 issue. To the extent that there's a problem with the
7 infringement contentions -- I don't think there is --
8 that would resolve it.
9 **THE COURT:** All right.
10 **MR. KHAN:** And then, Your Honor, if I could
11 make one more point.
12 **THE COURT:** Yeah, go ahead.
13 **MR. KHAN:** It's a real quick one.
14 I think, essentially, their issue is
15 basically that they want the ordering to be done in
16 connection with the optical path. But there's a claim
17 that talks about that and the other claims don't talk
18 about that.
19 That claim is on Slide 20. That's Claim 9 of
20 the '443 patent that says, "Wherein an optical path of
21 the light includes a first set of the filters followed
22 by a first mirror."
23 And that claim tells you, well, I am in the
24 optical path. I've got a first filter of the set of
25 filters followed by a first mirror.

1 So in -- so where the claims are talking
2 about the filters and mirrors being organized in
3 relation to the optical path, that's claimed in that
4 way. We don't -- there's no requirement that they be
5 claimed that way in every single claim. And I think
6 that's, basically, the point, Your Honor.
7 **THE COURT:** Okay. Can you point to any
8 embodiment...
9 Actually, I've already asked that question
10 sorry. We're good. All right.
11 **MR. CHEN:** Can I make just two quick points?
12 **THE COURT:** Yeah. But the first question I
13 have for you is; why don't I just construe first filter,
14 when first and second are describing filters, it has to
15 be sequential, but when it's describing branches, it
16 doesn't. Or zones or whatever.
17 Are you good with that?
18 **MR. CHEN:** Zones and branches, I'm fine with
19 that. But with respect to the other components in the
20 WDM, first and second also have positional significance.
21 That's supported by --
22 **THE COURT:** So show me the written description
23 where there's first and second is sequential other than
24 Figure 25, where there is the dichroic filter.
25 **MR. CHEN:** Yes. So in the figure --

1 **THE COURT:** And especially given, I think a
2 problem for you --
3 **MR. CHEN:** Uh-huh.
4 **THE COURT:** -- your biggest problem in the
5 written description are the optical relays, the 908 and
6 the 905, right, where the 908 is described as the first,
7 but actually sequentially it's second?
8 **MR. CHEN:** In the -- can we pull up Figure 25.
9 Thank you.
10 The specification talks about an optical
11 component, a collimating optical component 902, and then
12 talks about 907 as being the second optical component.
13 So again, there's a sequence with respect to
14 other components in the WDM.
15 **THE COURT:** Hold up.
16 So 907 is a concave mirror, right?
17 **MR. CHEN:** 907 can be a concave mirror,
18 correct, Your Honor.
19 **THE COURT:** Okay. But I'm talking about, I
20 thought there was in the written description reference to
21 908 being designated as the first.
22 Is that an optical relay? What is it?
23 **MR. CHEN:** Oh, no. I want to address that
24 argument, in fact, Your Honor.
25 **THE COURT:** Okay. That's what I'm saying,

1 that's, I think, your hardest...
2 That's their best argument on the written
3 description.
4 **MR. CHEN:** They're pointing to the claim
5 language, not written description. There's no written
6 description support in their Slide 25. If you look at
7 their Slide 25, what they're pointing to is Claim 1 of
8 the '582 patent.
9 This is their argument that there are no
10 claims that read onto the preferred or exemplary
11 embodiment, an argument that we disagree with, because
12 the '412 parent patent claims certainly map on to
13 Figure 25.
14 So there's no support in the written
15 description argument for their Slide 25. That is an
16 incorrect labeling. There is no be initial focusing
17 element in the specification and a first focusing
18 element being 908.
19 That's from their claim language, and the
20 claim language doesn't use the numbers 906 or 908.
21 That's their own mapping of Claim 1 of the '582 patent
22 to Figure 25.
23 So all of the written description supports
24 our position, and so that was one point that I wanted to
25 make, Your Honor.

1 The second point is, just to clarify did I go
2 to the aberration corrector plate.
3 Mr. Knight, it's Slide 100.
4 Your Honor asked this question earlier, and
5 what's important to point out is that this is not part
6 of the WDM. It is part of the optical path, correct.
7 And if we could go to Figure 31, Mr. Knight. That would
8 be Slide 5.
9 Slide 5. This is the objective with the
10 concave mirror and the aberration corrector plate.
11 That's the WDM up to the right side, upper right side
12 there.
13 And what I was stating earlier, if we can go
14 back to Slide 100, the aberration corrector plate has
15 that surface, and the light is going to hit that surface
16 at the same time that has the first zone and the second
17 zone. So it's at the same time in the optical path.
18 But in any event, that's before the WDM.
19 **THE COURT:** Right. But his point, I think, is
20 because it's hitting at the same path, it doesn't have to
21 be sequential. They're both at the same time, yet
22 they're described as two zones.
23 **MR. CHEN:** Correct, because it's irrelevant to
24 the optical path -- with respect to the issue of is it
25 first or is it second, it's irrelevant whether you want

1 to call one a first zone or a second zone. It's not
2 claimed. There's no first zone in the claim language.
3 What we're focused on is a specific
4 configuration of the WDM in Figure 25 and how various
5 components in the WDM manipulate light.
6 And that requires a specific sequencing of
7 the components, and so that's why the patents describe a
8 first dichroic filter, second dichroic filter, a optical
9 element, and then a second optical element.
10 **THE COURT:** Right, but they describe a first
11 and second branch. You are saying that's --
12 **MR. CHEN:** That's only in the claims language,
13 Your Honor.
14 **THE COURT:** Only in the claim language.
15 **MR. CHEN:** That's in the claim language, and
16 they -- you're right that there's that one passage in
17 Slide 25, where they are describing the first branch and
18 the second branch. Right?
19 **THE COURT:** Right.
20 **MR. CHEN:** Yeah, 57, 4 to 7.
21 **THE COURT:** Right.
22 **MR. CHEN:** Let me go to 57, 4 to 7. Correct.
23 **THE COURT:** So that would suggest that they
24 don't have to be sequential.
25 **MR. CHEN:** For that particular instance,

1 because they're at the same time. They're not
2 sequential. That just supports our position because the
3 light's basically hitting that component, that dichroic
4 filter.
5 Could you put up Figure 25. There we go.
6 Whereas light is being received first by the
7 dichroic filter and then second by the second dichroic
8 filter. The branching is occurring here at exactly the
9 same time.
10 **THE COURT:** Right.
11 **MR. CHEN:** So whether you call one a first
12 branch or a second branch, that doesn't matter because
13 they're actually -- the light is hitting that same space
14 and same point in time.
15 **THE COURT:** Okay. But I thought you want me
16 to construe...
17 Hold on a second.
18 **MR. CHEN:** So maybe what will help is I think
19 if we go to our proposed construction.
20 **THE COURT:** Hold up.
21 **MR. CHEN:** So in our...
22 **THE COURT:** Is a curved mirror and concave
23 mirror the same thing?
24 **MR. CHEN:** No, they're not.
25 **THE COURT:** Is a concave mirror a curved

1 mirror?

2 **MR. CHEN:** A concave mirror falls under curved

3 mirror, correct.

4 **THE COURT:** Correct. So it's a subset of it.

5 **MR. CHEN:** That's correct, Your Honor.

6 So --

7 **THE COURT:** Hold on a second.

8 **MR. CHEN:** Understood.

9 **THE COURT:** Okay. Go ahead.

10 **MR. CHEN:** If I may, Your Honor, our proposed

11 construction is for the terms "curved mirror," "focusing

12 optical element filter," "optical filter," "dichroic

13 filter," "semiconductor detector," and "image."

14 There's no "branch" in there. That's not

15 what we're asking the Court to construe.

16 **THE COURT:** What about optical relay? That

17 would be a focusing optical element? What would that be?

18 **MR. CHEN:** That would be a -- potentially it

19 could be the curved mirror, optical relay element, yes.

20 **THE COURT:** All right. Anything else you want

21 to say?

22 **MR. CHEN:** No. Thank you, Your Honor.

23 **THE COURT:** Let's take a break. Give the

24 court reporter a break. Be back in ten minutes.

25 (Whereupon, a recess was taken.)

1 **THE COURT:** Please be seated.
2 All right. So I think we need to change the
3 term, the disputed term, and make it "disputed terms."
4 And I'm going to construe at least one of those terms
5 today. And then I'm going to have you break up and
6 agree on what the other disputed terms are, and we'll
7 submit some additional briefing.
8 You can address those terms. So, for
9 instance, I don't think it's helpful to just do "first"
10 and "second" with the litany of terms.
11 I do note that branch, first branch, and
12 second branch were not asked to be construed. That's
13 important. First zone and second zone were not asked to
14 be construed. That's important.
15 The problem is, the sub-terms of the first
16 and the sub-terms of the second that I was asked to
17 construe, I'm not sure we've addressed the meaning of
18 those sub-terms sufficiently so that I can offer a
19 construction today. The one exception would be filters,
20 for instance. All right?
21 Now, the Federal Circuit has frequently
22 stated that the words of a claim are generally given
23 their ordinary and customary meaning. And the Court has
24 also made clear in *Phillips* and *Vitronics* that the
25 ordinary and customary meaning of a claim term is the

1 meaning that that term would have to a person of
2 ordinary skill in the art in question at the time of the
3 invention.
4 Now, this inquiry into how a person of
5 ordinary skill in the art understands the claim term
6 provides an objective baseline from which to begin claim
7 interpretation.
8 Consistent with the standard construction
9 rule announced by the Supreme Court in *Markman*, Federal
10 Circuit made clear in *Phillips* that, quote, "The person
11 of ordinary skill in the art is deemed to read the claim
12 term not only in the context of the particular claim in
13 which the disputed term appears, but also in the context
14 of the entire patent, including the specification."
15 Unquote. That's at 415 F.3d Page 1313.
16 Now, the plaintiff pointed me to the *3M*
17 decision, and that's at 350 F.3d, not sure what the
18 first page is, but it's in the 1300s, 1372. And in that
19 case, the Court held that there was nothing in the
20 intrinsic evidence that was at issue in that case that
21 required a limitation of sequential creation of the
22 multiple embossed pattern.
23 And I agree here with the plaintiff, for
24 instance, that the intrinsic evidence would not require,
25 that the "first" and "second" would impose a sequence or

1 temporal order if it were describing branches or zones.
2 We've discussed already this afternoon at
3 length the fact, and the defendant doesn't contest that
4 there are branches that are discussed, for instance, in
5 Figure 25, where there is no sequence, that both
6 branches occur simultaneously.
7 And the zones, Figure 9A, again, the light is
8 hitting them both at the same time. I think that's
9 undisputed they're simultaneously.
10 So if I were faced with a claim language that
11 was describing zones or branches, first and second zones
12 or first or second branches, I would agree that read in
13 light of the written description, there would be no
14 limitation, sequential or temporal limitation.
15 The problem for the plaintiff, though, is the
16 only disclosure of first and second filters is in
17 Figure 25, and that's it. There's nothing else.
18 And what that says to me is when, therefore,
19 I construe a first and second filter in a claim, I
20 should read it in light of that disclosure and construe
21 first and second filters to require that the first
22 filter occur sequentially before or temporally before
23 the second filter.
24 So I agree with the defendant's construction
25 of first and second filters.

1 Now, what I'm going to do is I'm going to ask
2 that you go back and look at the terms for which there
3 is a first and second designation in the asserted claims
4 and then just go through each of them.
5 So, for instance, the first one I recall was
6 a curved mirror, correct? And there appears to be, in
7 Figure 25, strong evidence that when it comes to at
8 least one subset of a curved mirror, there ought to be a
9 sequential or temporal limitation. But I don't know
10 enough, and I haven't heard enough argument to be able
11 to determine whether the temporal or sequential
12 limitation should be required for any kind of curved
13 mirror. I just don't know.
14 So what I'd like you to do is just go back
15 and maybe meet and confer and come up with a list, the
16 universe of those terms that you want me to construe,
17 all right? And then just submit something, and I can
18 construe it at a later date.
19 Now, what you need to do is you need to look
20 at, in terms of just guessing what I'm going to do, you
21 need to look at the written description. I do not find
22 as compelling the plaintiff's reliance on the claims,
23 which are written after the fact, which are not
24 consistent with their discussion of first and second, if
25 you go across patents. And I do not think are entitled

1 to much, if any, weight.
2 That will be, I guess, an appeal issue that
3 you all can argue. But it just seems to me that I'm
4 really, really focusing on *Phillips'* admonition that the
5 claims are to be read in light of the written
6 description.
7 All right. So that's where I am on the first
8 term. I'm going to leave it at that and then let you
9 all go back and submit to me further briefing, and we'll
10 work out the other particulars. All right?
11 Okay. Let's go to the next term.
12 By the way, I am a little worried about time.
13 Should we go to the last term? What do you all think?
14 What's most helpful to you? What do you want to leave
15 here, if you could only have a limited number of
16 constructions?
17 **MR. CHEN:** I think "collimating" and "optical
18 element" would be the next most important terms, Your
19 Honor.
20 **THE COURT:** Okay. Mr. Khan, what do you
21 think?
22 **MR. KHAN:** I think, Your Honor, if we could
23 do, yeah, those two.
24 **THE COURT:** Okay.
25 **MR. KHAN:** And then "collimating optical

1 element," which is certainly related to the two terms.
2 **THE COURT:** Okay. Let's do it. Let's go
3 right next to "collimating" then.
4 **MR. DENNHARDT:** Good afternoon, Judge.
5 Jeffrey Dennhardt for Beckman Coulter. And, fortunately,
6 it looks like we've got the technical issues resolved, so
7 we are able to use the screen.
8 The next term is "collimating," "collminate,"
9 and "collimated beam."
10 And we put the constructions here, but maybe
11 I think the place to start is this is a common term used
12 in optics. This is not a term that's coined for
13 purposes of the patents. You've seen many references
14 describe this term. Both parties have components in
15 their products that are identified as "collimating
16 lenses."
17 So this is a well-known term that should be
18 afforded its plain and ordinary meaning.
19 And the dispute, as we see on Slide 32, is
20 whether collimation permits some convergence or
21 divergence as we propose or, instead, requires perfect
22 parallelization, as Cytek proposes.
23 And the second issue is whether the rays must
24 originate from a point source as reflected in Cytek's
25 construction.

1 **THE COURT:** Do you think I can resolve this
2 without resort to extrinsic evidence?
3 **MR. DENNHARDT:** I think you can, Your Honor,
4 and I'm happy to go -- I know you're not as interested in
5 the claims. I'm happy to go right to the specification.
6 **THE COURT:** When you say I'm not interested in
7 the claims, I'm very interested in the claims. Okay?
8 **MR. DENNHARDT:** Okay.
9 **THE COURT:** Nothing I have said --
10 **MR. DENNHARDT:** I didn't mean to overstate.
11 **THE COURT:** You would be mischaracterizing
12 what I said if you were to say, for instance, to the
13 Federal Circuit that, "Oh, he ignored the claims."
14 That's not true. I'm starting with the
15 claims. What I am saying is claim differentiations, I
16 don't find to be a very compelling argument because of
17 the ability of attorneys, as opposed to scientists and
18 inventors, to manipulate claims, to add claims
19 subsequent to the invention, years after, and then to
20 come to a court and ask me to interpret the scope of the
21 invention and the meaning of claims based on those
22 additional claims that were really, as I say, drafted by
23 lawyers.
24 So just refer back to that if it comes up in
25 the Third Circuit, or the Federal Circuit.

1 Thank you. Go ahead.

2 **MR. DENNHARDT:** Understood, Judge. And, I'm

3 sorry. I was just trying to go right to the written

4 description here, because I think this can help resolve

5 the dispute.

6 I do have a claim on here, but it's

7 consistent with the written description that we see.

8 And when the patents describe "collimation," they

9 indicate that the collimated beam has substantially the

10 same diameter. We see that both in the '582 patent,

11 Claim 16, and in the specification at Column 45.

12 Column 45, again, just to indicate what we're

13 looking at or what we're talking about, if we look at

14 Figure 25 on the right, the two portions that it's

15 discussing that have substantially the same diameter,

16 the two collimated beams are the two that we've

17 highlighted in yellow there.

18 And why does this resolve the dispute? Well,

19 if perfect parallelization was required as Cytek

20 proposes, it wouldn't say the word "substantially," it

21 would say "it has the same diameter."

22 "Substantially" is intended to acknowledge

23 that in the real world, in the way light actually

24 behaves, there can be some convergence and divergence.

25 Their expert agrees with that. He talks about the fact

1 that light scatters and there are aberrations. And we
2 have this in the slides as well.
3 But the way that light actually behaves does
4 not require perfect parallelization. And there are
5 numerous references that say that, both intrinsic to the
6 patent and extrinsic. And I'm happy to go through a few
7 of those.
8 So starting with the intrinsic evidence.
9 This is from the file history. And Cytek puts a lot of
10 weight on the fact that the file history distinguishes
11 between collimation and focusing.
12 We don't disagree with that. Collimation,
13 for example, in the context of a collimating optical
14 element and focusing optical element, those are two
15 different things. And we seek to construe them
16 differently. But we acknowledge that as a practical
17 matter and in the real word, as it says here,
18 "Collimation means generally maintaining the width of a
19 beam."
20 It doesn't say it perfectly maintains the
21 width of a beam. It says that it limits its convergence
22 or divergence. We see the same in the second excerpt
23 there.
24 That's consistent with the extrinsic
25 evidence. Again, it talks about having nearly parallel

1 rays. It talks about having minimum ray divergence or
2 convergence. And, again, on the bottom, we see nearly
3 parallel rays.
4 Their own expert talks about the fact that
5 collimation can include some convergence. So here's a
6 patent for which their expert, Dr. Ilkov, who is one of
7 the named inventors, and it says, "The collimating
8 optical element focuses."
9 So their own expert agrees that there can be
10 some convergence in a collimating optical element or in
11 a collimating beam.
12 That's in the case law as well. In talking
13 about the term "collimator," it says that it bends the
14 incoming light rays towards the parallel. It doesn't
15 say that it makes them perfectly parallel because,
16 again, perfect parallelization doesn't exist in the real
17 world. It's a physical impossibility.
18 And --
19 **THE COURT:** By the way, does the patent say
20 that?
21 **MR. DENNHARDT:** Does the patent say...
22 **THE COURT:** That it's a physical
23 impossibility.
24 **MR. DENNHARDT:** No. Well, because it doesn't
25 need to.

1 **THE COURT:** All right. So then you are
2 relying on extrinsic evidence.
3 **MR. DENNHARDT:** No, Your Honor. The file
4 history is intrinsic evidence under the Federal Circuit
5 case law.
6 **THE COURT:** Does the --
7 **MR. DENNHARDT:** So I will go back to that.
8 **THE COURT:** Sure. Does the file history say
9 it's impossible?
10 **MR. DENNHARDT:** If you look -- here, let me go
11 to it. I was actually just on that slide.
12 **THE COURT:** It's all right.
13 **MR. DENNHARDT:** Here's -- this is from the
14 file history. This is Exhibit 6. It says, "Collimation,
15 while not necessarily maintaining parallelism, given that
16 achieving perfectly parallel rays is not realizable in
17 practice."
18 So, yes, it expressly said --
19 **THE COURT:** Well, in practice. Okay.
20 **MR. DENNHARDT:** Yes. So in the real world,
21 right, when you actually have a product like we're
22 talking about here, collimation is referring to limiting
23 the convergence or divergence, not eliminating it
24 entirely.
25 **THE COURT:** Okay.

1 **MR. DENNHARDT:** This is from our expert, that
2 perfect collimation does not exist in the real world.
3 It's from other references that Edmond Optics talks about
4 the fact --
5 **THE COURT:** So that's what I meant. In the
6 real world, it's not possible, then you are relying on
7 intrinsic evidence as opposed to it's not practicable or
8 it's not done in practice, which is the file history.
9 **MR. DENNHARDT:** Your Honor, I think that the
10 patent discussing the fact that it's a beam of
11 substantially the same diameter is an acknowledgment of
12 that real world reality, right?
13 If perfect parallelization was possible and
14 could be achieved, there would be no need to include the
15 word "substantially."
16 **THE COURT:** How about the reference in the
17 patent to "nearly collimated."
18 **MR. DENNHARDT:** Yes, Your Honor.
19 **THE COURT:** How about that? That would
20 suggest, I mean, if collimated can never be achieved, why
21 do you have to have "nearly collimated" as a term?
22 **MR. DENNHARDT:** Yes. Judge, I think on
23 that -- first of all, "nearly collimated" isn't a claim
24 term. Right? So it's not one of the terms that we need
25 to construe, but it's a further acknowledgment that there

1 can be some flexibility in that.
2 And let me give you an analogy. If you think
3 about a water bottle, right? The water bottle is full.
4 Right? Your water bottle is next to you. When they
5 come out, before you open them, it's full. But there's
6 still some space in the top, right? It's not -- the
7 volume is not 100 percent full.
8 Then you take a sip of the water bottle. The
9 water bottle is not nearly full, right? So it's
10 acknowledging that there is -- full, in and of itself
11 has some variance, right? Nearly full means a little
12 bit less than the variance that's permitted for full.
13 It's the same thing here, right? Collimation
14 means substantially the same diameter. Nearly
15 collimated provides a little bit more flexibility.
16 But, again, it's not a claim term, so I don't
17 think that's really necessary for Your Honor to construe
18 in this case.
19 **THE COURT:** Last question. How is this going
20 to play out in the case? If I agree with you, their
21 expert's going to say what, it's not collimated? Your
22 expert is going to say it is. They are going to,
23 basically, dispute, what, how parallel the lines are?
24 **MR. DENNHARDT:** I think that's right -- Your
25 Honor, it's not totally clear to me. You know, I guess

1 what it seems to me to be happening is because their
2 construction requires perfect collimation, it seems to me
3 that they might then try and turn around and argue, well,
4 of course we don't do that because you can't achieve that
5 in the real world.
6 And so if that's the case, well, then they've
7 precluded any product from ever doing that, right?
8 Because it doesn't exist. You can't -- you can't
9 achieve it.
10 Would you be okay with saying it's got to be
11 construed at substantially collimated?
12 **MR. DENNHARDT:** Your Honor, I think if you
13 were looking to resolve this dispute using exclusively
14 the intrinsic evidence, I think we would be okay with
15 saying that "collimation" means "substantially the same
16 diameter."
17 **THE COURT:** All right. Do you think the
18 bottle is nearly full now or not?
19 **MR. DENNHARDT:** Sure. I think that's nearly
20 full.
21 **THE COURT:** Okay. All right. Thank you.
22 **MR. DENNHARDT:** Thank you, Your Honor.
23 **THE COURT:** Before you start, I know you've
24 got a nice chart there, can you live with "substantially
25 collimated"?

1 **MR. PIVOVAR:** I don't think so, Your Honor.
2 **THE COURT:** No? Okay.
3 **MR. PIVOVAR:** I can explain why.
4 First of all, it's indefinite, variability.
5 We're going to have experts, one saying it is and it's
6 going to be a fight over that. So it is really
7 something that has to be resolved. And what we think is
8 that -- I hope that this is large enough.
9 **THE COURT:** It's not.
10 **MR. PIVOVAR:** Okay. May I move it closer?
11 **THE COURT:** Yeah, but I've got news for you,
12 you're probably going to have to hand it up to me to see
13 it.
14 **MR. PIVOVAR:** Well, I have slides as well.
15 **THE COURT:** Probably be good.
16 **MR. PIVOVAR:** So as long as it's not blocking
17 the slides, that's fine. I just want to put this up
18 here.
19 Just for the record, the board here is an
20 excerpt of the file history at Exhibit 7, Pages 9
21 through 10, and is a portion of the file history that we
22 pointed out in our briefing that was completely ignored
23 by plaintiff in their argument today, which I will be
24 referring to. I just wanted to get that up there for
25 the benefit of this.

1 **THE COURT:** Okay.

2 **MR. PIVOVAR:** I really did, Your Honor, want
3 to come back to exactly what you pointed out as well, and
4 that is --

5 Can I go to the document viewer?

6 -- is that if you look at the '582 patent in
7 Column 28, around Line 29, it refers to, you know, "A
8 nearly collimated circular Gaussian beam."

9 Right? Nearly collimated. That's a --
10 that's different than what the claim language is that
11 we're dealing with, which is collimated, collimating.
12 It doesn't say "nearly collimated" in the claims.

13 And then if we look at -- it's a term of
14 degree, really. What they're trying to do is inject a
15 term of degree that's ambiguous and subjective into
16 their construction for this term, which will be well
17 understood, which I will get to.

18 But I also did want to point out to Your
19 Honor that Column 44, down near the bottom, at Line 65
20 through 67, they refer to "effectively collimated."

21 Right? So there's a category here that we
22 have that is collimated beam. Then somewhere past that
23 you have something that's nearly collimated.

24 The claim language here says "collimating,"
25 "collimated beam." That's what we're focused on.

1 I do want to address, just briefly, briefly,
2 some of the arguments that were being made by plaintiff
3 because they're not consistent with our construction.
4 Okay? When they say "perfect parallelization
5 is not possible," they never explain to you what that
6 means. What they're saying there is that if I have a
7 beam of light, I cannot make every single ray within
8 that beam parallel. It's practically impossible to do
9 that. And we agree. And our construction does not
10 require that. And I can explain this in a second.
11 But just so we're clear on that, that in
12 their briefing they try to make a big deal about that.
13 We're not trying to construe this to a physical
14 impossibility. Our construction is true to what
15 collimating means. It requires parallel rays.
16 I will explain briefly, if I can, because
17 we'll get a look at optics and other things, why our
18 construction doesn't require that. And our construction
19 is true to what we have.
20 The other thing is you mentioned -- and this
21 kind of came up in their briefing a little bit -- but in
22 optics, going back to Newton, actually, who was the
23 first one who came up with optics, there's a construct,
24 this idea of, like, well, let's start with a point
25 source of light, like a very small source of light.

1 And I think this kind of bears a little bit
2 on what you asked Mr. Chen about with respect to the
3 collecting optical element, what happens.
4 So when the laser beam hits a cell or a
5 particle, the light goes everywhere, just like our sun
6 emits light in all directions, right? So when you do
7 that, what you want to look at when you think about a
8 point source, is that, okay, the source is very small.
9 So when I see the light coming out of it, all we do is
10 kind of projecting, kind of as a nice kind of cone
11 shape.
12 And that only happens if the point source is
13 very small. And it gets a little complicated. But if
14 you look at the sun, right, the sun is not a small
15 point. There are -- you can see it as a big spot. The
16 rays that are coming to you from one side of the sun
17 versus the ones on the other side are not going to be
18 part of this perfect kind of cone.
19 So because -- but if you look at a star in
20 the night sky and it's very, very far away, it does look
21 just like a point, right?
22 And one of the ways that you can actually get
23 collimated light that's used in this is you look at star
24 light, and they actually use star light with lenses
25 because the beam is collimated because it's coming from

1 so far away. There's no divergence, you know, it's a
2 very small point, to actually measure what the focal
3 length is of lenses doing that.
4 So the point is, this idea that in their
5 briefing they are like, oh, point source doesn't exist.
6 You can't rely on it to interpret anything here, I did
7 want to bring you to this --
8 Can we go to the document viewer?
9 Mr. Chen mentioned the '412 patent that they
10 have that's not asserted here. So if we look at the
11 file history -- and this is plaintiff's statement. You
12 can see here -- zoom in a little bit, Your Honor --
13 they're describing the prior art, and they say, "The
14 detecter from the prior art is used to detect light
15 emitted from a point light source such as a single mode
16 optical fiber in a WDM to be used with a communication
17 system."
18 Then they say, "The size of an object of such
19 point light source is usually measured in micrometers."
20 Then they explain, "As such, such point light
21 source has much less etendue than a bigger light
22 source."
23 So this is plaintiff going to the Patent
24 Office and saying, "I can understand this prior art
25 reference. It uses a single-mode optical fiber. The

1 size of that is measured in micrometers. And I'm going
2 to refer to that as a point light source."
3 Right? So all of the things that they say in
4 their briefing of point light sources don't exist and
5 you can't use that as construct, is belied by their own
6 use of the term here.
7 Right? So what we mean by, in our
8 construction, points on a source, first of all, is
9 different than a point light source. It's, we're
10 looking at points that collectively make up a light
11 source. So a little bit different there.
12 But, also, as used in the context of this
13 technology, what you have are sizes of light sources
14 that are on the order of micrometers by plaintiff's own
15 admission, are considered point light sources.
16 This last statement here says, "This point
17 light source has much less etendue than a bigger light
18 source."
19 Okay? And what that means is if I have a
20 very small light source, like a point light source here,
21 it is very easy to collimate that beam. That's what the
22 patent says. You can do that.
23 As the light source gets bigger and bigger
24 and bigger, on the order of milliliters, not microns, it
25 becomes more difficult. It becomes more difficult.

1 But I just want to point out, if you were in
2 any way persuaded by their arguments in their brief that
3 a point light source doesn't exist, they are using it in
4 their own -- in their own file history here, Your Honor.
5 Can we go to the slides.
6 **THE COURT:** This is the file history for what?
7 **MR. PIVOVAR:** This is the file history for the
8 '412 patent. And, Your Honor, this was not, admittedly,
9 submitted as an exhibit as part of all of the exhibits
10 that we have.
11 I just wanted to explain to you there are
12 constructs that we have here that are, you know, based
13 on theory. And then we apply them, which is totally
14 fine. Just to get into why our construction actually
15 works and our construction has to do -- you have to
16 understand, like ray tracing, all this stuff, not really
17 easy from the briefing. But I did want to start with
18 those overall points.
19 So when you look at the parties' proposed
20 constructions here, I think there's -- you know, there's
21 a difference, but there's also some similarities.
22 So we both agree that you have to look at the
23 rays of light in the beam. And then we both agree that
24 it has something to do with those rays of light being
25 parallel. Right?

1 And then the dispute we have is we have a
2 different way of how you can analyze what a collimated
3 beam is, which is consistent with even the exhibits
4 they've submitted. And what they're saying is, "Render
5 rays of light more nearly parallel."
6 Now, for collimating as a verb, so it says in
7 their proposed construction, Your Honor, this is why I
8 think it's highly problematic is that it says, "More
9 nearly parallel."
10 So, one, it has the ambiguity of what it
11 means to be nearly parallel. And it's just saying more.
12 "More" relative to what? Right? I can have a beam
13 that's very, very divergent, like this, and if I -- if I
14 make it a little less divergent, it's still a divergent
15 beam, but I have made it more nearly parallel because
16 I've reduced the divergence.
17 That's not a collimated beam. That's not
18 collimating. That's not what's meant in the art.
19 So that is just something I want to point
20 out, with that kind of injection of term of degree,
21 ambiguity, and something that really isn't supported by
22 any of the intrinsic record here.
23 And then when it comes to "collimated beam,"
24 they say it's a beam with nearly parallel rays. I'm
25 going to explain to you how they've read that to read on

1 to beams that are focusing and diverging in ways that
2 are much more broader than what I think plaintiff has
3 indicated how they're going to read it in their briefing
4 or how they've kind of represented it here today.
5 What we have is a more specific, from
6 dictionary definitions, consistent with the file history
7 as to what a collimated beam actually is. So I will get
8 into why that is, but our construction is "a beam
9 wherein all rays of light originating from a point on
10 the source."
11 Right? So I can think about a light source
12 as a collection of points of light, and all of those
13 need to be projected parallel with each other. And
14 those rays within the beam are neither converging or
15 diverging.
16 **THE COURT:** My problem, though, is where is
17 all this in the patent? I didn't come away from reading
18 the brief, your briefing, thinking, oh, it's all there in
19 the patent.
20 **MR. PIVOVAR:** Yeah. There's no definitional
21 statement, right? And I think this is in some ways why
22 we are arguing that the term "collimating," "collimated,"
23 and "collimated beam" is indefinite.
24 **THE COURT:** I know you are, but why didn't you
25 just put up there, I mean, it sounds like there's no

1 dispute that...
2 What's the POSA? What would I call a POSA in
3 this case?
4 **MR. PIVOVAR:** We have some of that. But --
5 **THE COURT:** Something short, like give me,
6 like, a three --
7 **MR. PIVOVAR:** Yeah. I --
8 **THE COURT:** If I were going to a university,
9 what department?
10 **MR. PIVOVAR:** Exactly. Like a bachelor's
11 degree, a few years of experience in optics and optical
12 systems, that kind of stuff.
13 **THE COURT:** So an optician? Some sort of
14 optics guy? What do I call him?
15 **MR. PIVOVAR:** Yeah, not -- well, you --
16 somebody who's trained in optical systems is part of it.
17 Is part of it, yeah.
18 **THE COURT:** Okay. And optical systems person.
19 Okay.
20 So if I've got to two optical system persons,
21 they run into each other at a coffee shop, do you think
22 that they would be able to have a discussion and refer
23 to collimating, and they'd each know what the other is
24 talking about?
25 **MR. PIVOVAR:** No.

1 **THE COURT:** Really?

2 **MR. PIVOVAR:** No. And here's why. The term

3 is used in all different ways. You can look at their

4 dictionary definitions. It's used differently --

5 **THE COURT:** The fact that it's in a

6 dictionary, doesn't that tell you they could have a

7 discussion?

8 **MR. PIVOVAR:** Well, let -- can I just, like,

9 address that in a slightly different way?

10 So let me -- if we can go to the document

11 viewer, please.

12 **THE COURT:** Let me ask you this: Do you think

13 they could have a discussion what the meaning of optics

14 is?

15 **MR. PIVOVAR:** No, they could. And they could

16 get to a common understanding. But they couldn't just

17 be, like, hey, my beam is collimated. Like, they would

18 have a general understanding of what that means.

19 The issue is this: Every instrument or

20 system requires a certain amount of collimation or a

21 certain amount of precision with it in a certain amount

22 of things.

23 **THE COURT:** Right. You're saying it's

24 degrees.

25 **MR. PIVOVAR:** It's degrees, exactly, right.

1 **THE COURT:** Right, but then the fact that you
2 said, you started with collimation tells me they could
3 have a discussion. Now, they may debate what degree of
4 collimation is required to meet a claim in the patent.
5 Isn't that really what POSA --
6 **MR. PIVOVAR:** That's -- that's right.
7 **THE COURT:** So then, why don't I just not
8 construe this term and let your experts go to town, and
9 you can, your expert could say, well, look, I've got to
10 tell you, I don't know what the degree of collimation is
11 that's required here. If I had to guess, if you forced
12 me, maybe I'd say this, but in my mind, it's indefinite.
13 **MR. PIVOVAR:** Your Honor, I would say that it
14 is necessary for you to review the intrinsic record and
15 give some guideposts to the jury on this or else you are
16 just going to have battling experts.
17 **THE COURT:** Okay. So if you want me, then...
18 I'll tell you what. If you want to construe
19 it based on the intrinsic evidence, then why don't you,
20 going forward, only refer to intrinsic evidence.
21 **MR. PIVOVAR:** Okay. Go back to the slides.
22 And so some of this, I don't want to, like,
23 belabor this because maybe you get it, maybe you don't,
24 but, like, you know, there are basically three different
25 ways that lenses can interact with -- so you have a

1 diverging beam of light. And then it can go into some
2 kind of, you know, lens or something like that.
3 It can be converging. These are looking at
4 the rays. They would be converging. That would be a
5 focus beam.
6 When you have light that's collimated, again,
7 parallel --
8 **THE COURT:** Hold up. Hold up.
9 **MR. PIVOVAR:** I'm sorry. I just want to make
10 sure we're all kind of calibrated around what we're doing
11 before I jump in because I am going to get right into the
12 intrinsic record for Your Honor.
13 **THE COURT:** Yeah, I know, but you started with
14 extrinsic.
15 So just to be clear, the slide you are
16 showing me is from a declaration, right?
17 **MR. PIVOVAR:** So the slide, if we go to
18 this -- so the intrinsic record refers to this book
19 *Practical Flow Cytometry*.
20 **THE COURT:** Yeah.
21 **MR. PIVOVAR:** Right? So it's in this book.
22 It's referring to, like, the flow cytometer. And then
23 with this, what we have here is a description of how that
24 book that's cited in the intrinsic -- so it's part of the
25 intrinsic record kind of indirectly because it's cited.

1 And all we're doing here, Your Honor, is
2 trying to explain, you know, what the difference is
3 between light rays that converge, and obviously you can
4 see that, these light rays all converge to a point.
5 That's a focus beam.
6 **THE COURT:** Right.
7 **MR. PIVOVAR:** If they are parallel after they
8 go through it, that's collimated.
9 **THE COURT:** Right.
10 **MR. PIVOVAR:** And then if they're still
11 diverging after they go through it, that's a -- like the
12 rays are diverging, that's called a defocus beam.
13 **THE COURT:** Okay. So there's three broad
14 categories that people talk about.
15 **MR. PIVOVAR:** Exactly. And light that's
16 collimated sits in this very specific --
17 **THE COURT:** Yep.
18 **MR. PIVOVAR:** -- parallel ray point.
19 So we have some other things that kind of get
20 into this and explain what all that is, but let's go to
21 the intrinsic record.
22 So in the intrinsic record, there was -- and
23 the poster board there is Exhibit 7, but as part of that
24 for the intrinsic record in Exhibit 7, there was a
25 definition from an optics glossary that was submitted by

1 the patent owner. Right?
2 So this is their submission to the Patent
3 Office saying this is how we want you to understand what
4 collimated beam is. It says a beam in which all the
5 rays are parallel to each other. Right?
6 So if you were to construe this just from the
7 intrinsic record, you could say that. That's not their
8 construction, that would be consistent with ours.
9 **THE COURT:** So, wait. Hold up. Let's get
10 this straight. I thought their...
11 I don't really like their alternative
12 construction. I don't like it at all nearly, you know,
13 but in fairness to them, they're saying it doesn't have
14 to be construed, right?
15 Isn't that what you're saying?
16 **MR. DENNHARDT:** Yes, Your Honor.
17 **THE COURT:** Which seems like to me the right
18 answer here. I'm going to guess...
19 Well, maybe I...
20 **MR. PIVOVAR:** Your Honor, if I could.
21 Can you jump down to the slide. So -- hold
22 on. Hold on.
23 Can I have two minutes to explain?
24 **THE COURT:** Yeah.
25 **MR. PIVOVAR:** Okay. Watch. So here's the

1 file history. This is on the poster board. Okay? This
2 was in our briefing. It's there.
3 And what plaintiff was doing here in this
4 context of the file history is saying, okay, I'm faced
5 with having to differentiate what collimating means from
6 focusing. Okay? And they are dealing with this in the
7 context of a patent that's being asserted against their
8 claims.
9 And to do that, they say -- and you can see
10 this in the highlights on our Slide 29, right? This is
11 just all the differentiations. "The objective lens
12 collimates rather than focuses the light." Okay?
13 So there's a difference between collimating
14 and focusing.
15 **THE COURT:** Yep.
16 **MR. PIVOVAR:** Then they say, because the lens
17 collimates the light, a person of ordinary skill in the
18 art would have understood that the objective lens brings
19 all of the rays parallel to each other, albeit with some
20 beam divergence in view of practical limitation.
21 So we're talking about practical limitations,
22 right? You can't make a perfectly parallel beam. And
23 the practical limitation here also has to do with how
24 big is your light source, right?
25 If I have a small point source, it's going to

1 have less beam divergence. If I have a bigger light
2 source, it's going to have more beam divergence. And
3 that's one of the practical limitations that they're
4 talking about here.
5 But then let's look at what it goes into the
6 next sentence, which I think is the key one for you to
7 look at. Collimating fluorescent light. This is not
8 focusing the fluorescent light, which instead involves
9 converging the light. Right?
10 So they're saying, hey, when it comes to us
11 differentiating our understanding of these terms to the
12 Patent Office to differentiate form the prior art, we
13 clearly understand that collimating fluorescent light is
14 not focusing the light because it instead involves
15 converging the light.
16 So this is the intrinsic record. They
17 understand that. So --
18 **THE COURT:** Okay. All right. So why don't we
19 construe it that it's collimating is bringing all of the
20 rays parallel to each other, albeit with some divergence
21 in view of practical limitations.
22 Can you live with that?
23 **MR. PIVOVAR:** I think that's close, Your
24 Honor.
25 **THE COURT:** Okay. Can you live with that?

1 **MR. DENNHARDT:** Your Honor, I think that would
2 be picking and choosing portions of the intrinsic record.
3 **THE COURT:** Yeah, but that's not my question.
4 My question is: Can you live with it?
5 **MR. DENNHARDT:** I don't think it would be
6 accurate to construe the term in that, way and I'm happy
7 to explain why.
8 **THE COURT:** Okay. All right. Have a seat.
9 **MR. PIVOVAR:** All right. So I just want to
10 get to the point that you were making is that -- and also
11 we're going to be having discussions about this and what
12 it means. But just to show you how this matters.
13 So collimating fluorescent light is not
14 focusing fluorescent light when they need it to be that
15 way. And even more importantly, Your Honor, on the end
16 of this it says light that's effectively collimated. We
17 looked at this in the specification of the '582 patent,
18 "By collimating, optical element 902 is not converging."
19 **THE COURT:** Right.
20 **MR. PIVOVAR:** Right? So collimating light is
21 not focused or converging. And even effectively
22 collimated light is not converge.
23 **THE COURT:** Okay.
24 **MR. PIVOVAR:** So Dustin, let's go to the
25 slides that are near the end. I will -- all right.

1 So I'm going to put this into context for
2 you. This was something I was going to do after the
3 terms, but what you have here on our Slide 49 is a
4 depiction of one of Cytek's patents. Okay? It's
5 Figure 2A from the '076 patent. This is Exhibit 34
6 attached to the Joint Claim Construction Brief.
7 **THE COURT:** Time out. Time out.
8 **MR. PIVOVAR:** Yep.
9 **THE COURT:** This is what patent?
10 **MR. PIVOVAR:** If you have the joint -- we do
11 this in the Joint Claim Construction Brief as well. But
12 this is Exhibit 34.
13 **THE COURT:** Exhibit 34. Okay. But go back to
14 what patent is it?
15 **MR. PIVOVAR:** So I was just going to use this
16 because these are the images that plaintiff relies on in
17 their infringement contentions to explain to you how
18 they're reading their terms.
19 **THE COURT:** Okay. I don't want to hear any
20 more about contingent claims. It's already almost 3:30.
21 I've got to get to claim construction.
22 So why am I looking at -- again, I've asked
23 you to look at the intrinsic evidence, and now you're
24 talking about some written description from another
25 patent.

1 **MR. PIVOVAR:** I'm not, Your Honor. So all I
2 was doing here is -- just so you know, like, these are
3 converging rays in yellow. In green they're diverging.
4 There's no collimated beam here whatsoever.
5 **THE COURT:** Okay.
6 **MR. PIVOVAR:** Okay. Here is plaintiff's
7 infringement contentions. Under their proposed
8 construction, this converging focused beam is a
9 collimated beam. This is exactly why you have to
10 construe it. Right?
11 They're coming in and they're going to say,
12 well, hey, if we say nearly more, we can say whatever we
13 want. Even though the file history expressly says
14 focused light, converging rays is not a collimated beam.
15 They want to get away from that. Right?
16 And that's why, you know, the question is,
17 when you look at this, and you can look at it again, but
18 when you look at their briefing on this -- and we
19 pointed this out -- they're saying, oh, this is the
20 collimated beam that's parallel and this is the second
21 collimated beam that's parallel.
22 We agree. You have to have parallel rays in
23 the beam for it to be collimated. The question you to
24 ask yourself, Your Honor, is, like, why didn't they
25 identify this to you?

1 It's because they want you to construe it,
2 they want you to construe it vaguely with their
3 indefinite terms. They want to point to things and say,
4 well, I can't be perfect. And then they want to take
5 that and say, well, if it's not perfect, we can go back
6 and read it onto a focused beam, which if we go back to
7 the file history and you look at the slide -- the board
8 right here, they expressly said it's not focusing.
9 Collimated light doesn't focus.
10 So this is really why from the intrinsic
11 record, Your Honor, you can see that their construction
12 is wrong, and it can't be what we have. We can't be
13 defining the patent claim terms around that.
14 Now, I think that, you know, the proposal
15 that you have -- so -- is to basically say brings all
16 the light rays parallel to each other.
17 **THE COURT:** Right. You can say it can't be
18 convergent, it can't be focusing. And we could put that
19 in the definition. I mean, I think that's very, very
20 clear. And if they're playing a game, that will take it.
21 Now, you know, that would be one way to
22 tackle this.
23 So do you have a proposal?
24 You know, I don't like "nearly." I mean,
25 that strikes me as --

1 **MR. PIVOVAR:** So, Your Honor, I think you --
2 your proposal is only -- you're reading on what's --
3 we're pointing to in Exhibit 7 of the file history that
4 says "brings all of the rays parallel to each other,
5 albeit with some divergence in view of practical
6 limitations," and does not include "focusing" or
7 "converging the light" or "converging light rays" would
8 be something that would probably be pretty acceptable to
9 us. I want to, like, make sure that that's fine. But I
10 think in principle, that would work.
11 **THE COURT:** Okay. Why don't you confer with
12 your client? Is your client here?
13 **MR. PIVOVAR:** Our client is not here,
14 actually.
15 **THE COURT:** Okay. So why don't you confer
16 with your colleagues. And then let's hear from the
17 plaintiff.
18 **MR. PIVOVAR:** Yeah, substantively, Your Honor,
19 that is our construction. You get -- it's different
20 words describing different ways, but substantively that's
21 what it is, so that's fine.
22 **THE COURT:** Okay.
23 **MR. PIVOVAR:** And I think just, you know, if
24 you have -- I know we're running short of time. If you
25 have any other questions, I can explain all of the optics

1 and all that, but if we're looking at doing this just
2 from the intrinsic record, it's clear from there, right?
3 Parallel, some divergence, not converging, not focusing.
4 **THE COURT:** Okay.
5 Let's hear from this side.
6 **MR. PIVOVAR:** All right. Thank you, Your
7 Honor.
8 **THE COURT:** Thank you.
9 All right. So how parallel do they have to
10 be?
11 **MR. DENNHARDT:** Well, Your Honor, I think,
12 first of all, let me start with what we have in the
13 intrinsic record. Right?
14 You asked counsel: Would you be okay with
15 saying collimating means substantially the same
16 diameter? He said no. Right?
17 This comes from the specification in the
18 claim.
19 **THE COURT:** Well, actually, so "substantially
20 the same diameter," again, I don't find that that
21 helpful. Substantially parallel, isn't that really what
22 we mean?
23 **MR. DENNHARDT:** Well, it's effectively the
24 same thing because once --
25 **THE COURT:** Okay. So then, you could live

1 with...
2 So could you live with substantially
3 parallel?
4 **MR. DENNHARDT:** I think we could live with
5 substantially parallel.
6 **THE COURT:** Can you live with noncovergent?
7 **MR. DENNHARDT:** I don't think we can.
8 **THE COURT:** Why not?
9 **MR. DENNHARDT:** Let me show you why. The file
10 history -- if you remember, when we talked about when he
11 put up his board, he said we distinguish focusing from
12 collimating --
13 (Reporter clarification.)
14 **MR. DENNHARDT:** I'm so sorry.
15 We said from the outset that I don't disagree
16 that focusing and collimating are two different things.
17 Right? But he's picking and choosing certain portions
18 of file history and ignoring other portions. Looking
19 at --
20 **THE COURT:** You just said... hold on.
21 Okay. You just said, "We have said from the
22 outset, I don't disagree that focusing and collimating
23 are two different things."
24 Great. So why can't you agree as part of the
25 construction that collimating is not focusing?

1 **MR. DENNHARDT:** Because, Your Honor, when a
2 beam is collimated, there may be some convergence. So if
3 you want to take this from the file history and say
4 generally maintaining the width of the beam, including,
5 for example, limiting its convergence or divergence, but
6 not focusing, we would be okay with that.
7 But the point is --
8 **THE COURT:** Hold up. Hold up. Hold up.
9 **MR. DENNHARDT:** Yes, Your Honor.
10 **THE COURT:** See, I don't like the... I just
11 feel like you're...
12 Why do you keep going back to the width of
13 the beam as opposed to referring to parallel?
14 **MR. DENNHARDT:** That would be fine too.
15 Generally parallelizing the beam, limiting its
16 convergence or divergence but not focusing, that's okay.
17 They want to eliminate any convergence at
18 all, right, and that's not what the file history says.
19 It says limiting convergence or divergence.
20 If we wanted to add to that "but not
21 focusing," that's okay with us. We don't disagree that
22 collimating and focusing are different.
23 **THE COURT:** I think a compromise is reachable
24 here if people are being reasonable.
25 **MR. DENNHARDT:** Sure.

1 **THE COURT:** Right? I think each side is
2 trying to maintain absolute positions. You don't want to
3 have anything...
4 You want to avoid precluding any convergence
5 or any focusing.
6 **MR. DENNHARDT:** I would say any convergence.
7 To the extent that there's limited convergence --
8 **THE COURT:** Or divergence.
9 **MR. DENNHARDT:** Limited convergence or
10 divergence. That's right. We don't an absolute that
11 says you can't have any convergence or divergence.
12 **THE COURT:** Right. Right. Okay. And they
13 want some precision.
14 **MR. DENNHARDT:** I think, Your Honor --
15 **THE COURT:** And I think at the end of the day,
16 the experts, this is boiling down to experts. I mean,
17 the experts are going to have to come in and tell me and
18 tell the jury what is an acceptable degree of divergence
19 or convergence that would not render something
20 non-collimating.
21 And presumably their expert would say the
22 position your expert is taking is so extreme, it's
23 allowing for so many convergence and divergence, that
24 either it can't be accepted as falling within
25 collimation or it's rendered the notion of collimation

1 indefinite. That's really what this boils down to.
2 **MR. DENNHARDT:** Judge, I think you're exactly
3 right. And I think, going back to your original
4 suggestion of not construing the term and letting it go
5 to the experts, I think would be an acceptable solution
6 here.
7 **THE COURT:** Well, the other alternative would
8 be to come up with something in between what your friend
9 said a few minutes ago was acceptable and what you're
10 saying. And it strikes me that we ought to be able to
11 come up with something.
12 So give me your best. What's your best
13 proposal?
14 **MR. DENNHARDT:** Judge, I think if we said
15 limiting its convergence or --
16 **THE COURT:** Hold on. And let's start with
17 "collimating." Right? Just construe collimating.
18 **MR. DENNHARDT:** Collimating means rendering
19 the rays substantially parallel, limiting its --
20 **THE COURT:** Hold on. "Rendering the rays
21 substantially parallel" such that what?
22 **MR. DENNHARDT:** There's limited convergence or
23 divergence.
24 **THE COURT:** "There is limited convergence and
25 divergence."

1 **MR. DENNHARDT:** And if they want "but not
2 focusing," that's okay with us.
3 **THE COURT:** How about "substantially such that
4 any convergence and divergence is limited to the extent
5 possible."
6 "Rendering the rays parallel such that there
7 is..."
8 Sorry. "Rendering the rays substantially
9 parallel such that any convergence or divergence is
10 limited to the extent possible."
11 **MR. DENNHARDT:** Your Honor, I think generally
12 that's in the right direction.
13 I think the challenge that comes to mind is
14 how do we determine to what extent convergence or
15 divergence is, you know, limited to the extent possible,
16 right?
17 **THE COURT:** I know. But that's why they're
18 saying its indefinite. I mean, frankly, what I also
19 think we ought to do is we ought to tee up summary
20 judgment for indefiniteness and let's do that before we
21 go too far down the road in this case. So that's where I
22 think we're going to end up. All right?
23 All right. Can you live with: "Rendering
24 the rays substantially parallel such that the amount of
25 convergence and divergence is limited to the extent

1 possible."
2 Can you live with that?
3 **MR. PIVOVAR:** I'm thinking about it.
4 **THE COURT:** Well, think about it, then don't
5 talk. Just go back and talk to your partner and think
6 about it.
7 **MR. PIVOVAR:** I'm sorry, Your Honor. It's
8 just because if you minimize the amount of convergence or
9 divergence that could be in a beam, you end up with our
10 construction of a collimated beam. That's the point.
11 So --
12 **THE COURT:** Well, then you win. If you like
13 it, then you should say I like it.
14 **MR. PIVOVAR:** And I just want to make sure
15 that, like, if we're going to agree to something like
16 that, where it's minimizing -- and the question is to me,
17 minimizing the convergence or divergence, is that a
18 comparable?
19 Like if I can minimize the divergence
20 relative to the convergence, which way do I go? There
21 are some issues on that.
22 But anyhow, Your Honor, I did want to, if I
23 could -- I know you're trying to reach an agreement
24 here. And I just want to be clear here that having a
25 collimated beam when it comes to light -- when it comes

1 to light, having convergence of a collimated beam is a
2 physical impossibility.
3 And I know they're pointing to all this
4 extrinsic evidence. There's nothing in the intrinsic
5 record that ever says a contracting beam. They say
6 maintaining the spots eye or the diameter of the beam
7 and limiting or not significantly expanding the beam,
8 because everybody understands that a collimated beam
9 will have some divergence and no convergence. And I do
10 want to address this --
11 **THE COURT:** We will have divergence but not
12 convergence?
13 **MR. PIVOVAR:** Not convergence, Your Honor.
14 And I did want to point this out because the main -- can
15 we go to the --
16 **THE COURT:** All right. But hold on. I think
17 I can address that. Hold on.
18 **MR. PIVOVAR:** Okay.
19 Can you go to the document.
20 **THE COURT:** I think I've addressed this.
21 "Rendering the rays substantially parallel such that any
22 convergence and any divergence are limited to the extent
23 possible."
24 So it's any divergence, any convergence. So
25 even if it is only divergence, you still get your way.

1 You could do it. Doesn't have to be both convergence
2 and divergence. Can be either or both.
3 **MR. PIVOVAR:** I'm sorry that I'm pausing
4 there. I'm thinking about the active on this. Right?
5 What's the --
6 **THE COURT:** The what?
7 **MR. PIVOVAR:** There's like an active aspect to
8 this, right, because it's saying -- I believe you said,
9 like, limiting to the extent possible.
10 **THE COURT:** Limited.
11 **MR. PIVOVAR:** Limited?
12 It's to the extent possible, right? So...
13 **THE COURT:** I thought you wanted that.
14 **MR. PIVOVAR:** No. We do. We do. I'm just
15 thinking about it -- I'm sorry -- in an application of
16 let's say I have, you know, light coming into a lens and
17 it's a focused beam. And, like, well, to the extent
18 possible --
19 **THE COURT:** Aren't you going to still say it's
20 still indefinite? Even with that definition, it's
21 indefinite?
22 What does "to the extent possible" mean?
23 **MR. PIVOVAR:** Well, that's a good question.
24 **THE COURT:** Yeah. Well, that's what I'm
25 wondering.

1 **MR. PIVOVAR:** But if we're saying if I'm going
2 to -- I'm going to minimize the amount of beam divergence
3 that a ray of light has, right, just that, that's a --
4 that's the definition of a collimated beam. When it
5 comes to light, that is it. It has divergence and it's
6 minimized.
7 If I have a diverging ray, it's going to be
8 bigger, and it's not going to be minimizing the amount
9 of divergence.
10 **THE COURT:** I thought you also want
11 convergence?
12 **MR. PIVOVAR:** No.
13 **THE COURT:** I mean, I thought originally you
14 did until just the last two minutes but --
15 **MR. PIVOVAR:** Right. We pointed out how in
16 the file history here it says no convergence.
17 You can bring up the slide, Dustin.
18 And I did want to point this out. So here's
19 how this went down from a file history standpoint.
20 Exhibit 7 that you see on the board that we talked about
21 before, they're first confronted with the rejection by
22 the examiner. This is what they say, right?
23 A person of ordinary skill in the art would
24 not understand that the objective lens brings all of the
25 rays -- would understand, sorry -- parallel to each

1 other... some beam divergence... this is not focusing --
2 **THE REPORTER:** Can you read slower.
3 **MR. PIVOVAR:** I'm sorry.
4 This is not focusing... light effectively
5 collimated...
6 This is on Slide 30. This is what they said.
7 Now, they had a parallel argument with this,
8 but this is what they told the examiner when they were
9 trying to do this.
10 Now they came back and this is the portion of
11 file history that plaintiff's counsel is pointing to.
12 They came back later after the examiner had already
13 agreed for a different reason that they would be able to
14 get their claims through and they changed. They changed
15 what they said in some ways, and they kept what they
16 said in other ways.
17 They're like collimates rather than focus.
18 Collimation is not focusing. They're distinguishing
19 between focusing and collimation. So they're still
20 doing this.
21 If this look in this middle of this on
22 Slide 31, our Slide 31, it says -- it changes what a
23 POSA's understanding was from the previously what they
24 said to what they're saying later to try and expand this
25 out.

1 And I did want to point this out, Your Honor,
2 because this -- it says see, for example, Specification
3 4:46 to 63. That has the indication that it's pointing
4 to the specification, and it has support in the
5 intrinsic record.
6 The file history specification --
7 **THE COURT:** I am losing you. What's the main
8 point here?
9 **MR. PIVOVAR:** So the main point here is that
10 he is pointing to a second part -- or counsel for
11 plaintiff is pointing to a second part of the file
12 history, saying you should just adopt this and let's
13 broker a deal from this.
14 This is wrong. This is wrong on Slide 31.
15 **THE COURT:** Okay. So then, you just...
16 Are you saying you just get convergence out
17 of it and just talk about divergence only? Is that your
18 point?
19 **MR. PIVOVAR:** That is my point.
20 **THE COURT:** Okay. Well, then, "Rendering the
21 rays substantially parallel such that any divergence is
22 limited to the extent possible."
23 You can live with that?
24 **MR. PIVOVAR:** As long as the understanding is
25 it doesn't involve converging beams or convergence,

1 that's fine.

2 **THE COURT:** But then I put convergence in I

3 thought precisely --

4 **MR. PIVOVAR:** No, no, no, no.

5 **THE COURT:** -- because you said you are

6 concerned about convergence too.

7 **MR. PIVOVAR:** No, no, no. I'm sorry, Your

8 Honor. It excludes convergence.

9 So if you put on that phrase, "comma,

10 excluding focused light or converging light," fine.

11 Right?

12 It's the interpretation of the words, right?

13 If you take out -- we think --

14 **THE COURT:** You want to say there can be no

15 convergence whatsoever, but there can be divergence?

16 **MR. PIVOVAR:** Yes, Your Honor, that's right.

17 And I did just want to point out in this --

18 **THE COURT:** And...

19 **MR. PIVOVAR:** This is exactly what they said

20 in their previous thing, "parallel to each other with

21 some beam divergence."

22 Right? Not focusing, which involves

23 converging light, light effectively collimated is not

24 converging.

25 This is the whole point of what they're

1 saying here. And what they do in their follow-up, this
2 is on Slide 30 from the file history of Exhibit 7.
3 But if you go to our Slide 31, which is
4 Exhibit 6, which is the follow-up, well, they try to
5 back off that because they know that the examiner has
6 already done something, and they want to make it seem
7 like this is supported by the specification.
8 And the point I wanted to make here, Your
9 Honor, is there is no citation in the specification in
10 this file history that is that. And the file history --
11 **THE COURT:** They just made it up?
12 **MR. PIVOVAR:** I have no idea where it came
13 from.
14 So the file history is double-spaced. It
15 stops at Line 30. And if you look on Page 4 of the
16 specification, there's nothing there. Another thing,
17 you don't have these lines on Page 4 of the
18 specification of the file history.
19 **THE COURT:** Was this in the brief?
20 **MR. PIVOVAR:** Our expert addressed it, but
21 this was a lot there. They pretty much -- we had to
22 fight them a little bit about the file history.
23 But the point I was just trying to make here,
24 Your Honor, is this has no support other than attorney
25 argument. Right. Okay. We are going to say this now.

1 He's saying something that's different than what he said
2 before. All we're saying is that's not right. And he's
3 still admitting that collimation is not focusing, none
4 of these other things. And if you look -- sorry, Your
5 Honor. I know I'm going pretty fast.
6 If you look at Slide 31, then, in conjunction
7 with all of this, what they did is they said, well, we
8 think -- we all understand that collimated beams are not
9 focused beams with any converging rays or anything like
10 that.
11 What we're going to do though anyway is we're
12 going to amend our claims because -- to make clear that
13 light that's focused by collecting optical element
14 convergences instead of being collimated. Right?
15 Instead of being collimated. Not -- I understand that.
16 But I'm just pointing out why the convergence, even
17 in -- even in the portion of the specification that
18 they're talking about -- they're distinguishing between
19 focused light, collimated light, and light that's
20 converging further down.
21 Collimates the fluorescent light, is not
22 configured to focus the fluorescent light such that the
23 fluorescent light leaving the objective beam converges
24 as the claims require.
25 So even in this excerpt that they have where

1 they cite to a portion of the specification that doesn't
2 exist, they are still admitting that collimating light
3 doesn't read on converging or focused light.
4 So this is all supportive of why what you
5 said, and you've recognized, from our perspective is the
6 collimated beam never has focused or converging light.
7 And --
8 **THE COURT:** The intrinsic evidence that you
9 are quoting from right now --
10 **MR. PIVOVAR:** Uh-huh.
11 **THE COURT:** -- came after the patents were
12 issued, right?
13 It's a response to the May 2, 2024, Final
14 Office Action.
15 **MR. PIVOVAR:** This is from the file history
16 of -- that was part of the family being prosecuted over
17 time. That's right.
18 **THE COURT:** But it's based on the same written
19 description. In other words, the patent that it is
20 addressing, which is not one of the asserted patents
21 here, but it's the same family of patents and it shares
22 the same written description; is that the case?
23 **MR. PIVOVAR:** It shares the same written
24 description, and I am nearly certain this is from the
25 file history of one of the asserted patents, the '106

1 right? Yeah, the '106 patent. This is one of the
2 asserted patents.
3 **THE COURT:** It is in one of the asserted
4 patents?
5 **MR. PIVOVAR:** Yes.
6 **THE COURT:** But it's after its issuance? No?
7 It's before?
8 **MR. PIVOVAR:** Yeah. This is part of the file
9 history leading to --
10 **THE COURT:** Sometimes people call file history
11 intrinsic evidence, you know, PTAB. That's what I am
12 trying to get at.
13 **MR. PIVOVAR:** Yeah. Yeah. This was part
14 of -- so in this case -- not to go back, originally
15 plaintiff asserted two patents. Patents issued in
16 December, asserted those to this case.
17 **THE COURT:** Okay.
18 **MR. PIVOVAR:** Those two -- of those two that
19 were newly asserted, one of them is the -- it's the '106
20 and '107 patents that were added to this case. This is
21 the file history from the '106 patent before it issued.
22 **THE COURT:** All right. Thank you.
23 **MR. PIVOVAR:** So this is all part of the kind
24 of non-after disputes of the PTAB.
25 And the key thing is that they are

1 characterizing and telling the examiner what these terms
2 mean. And all we are saying is, like, be consistent,
3 right? Stick with what you said in the file history.
4 And then, if you go back to our slide -- I'll
5 get there. It will take me a second, a little while.
6 It's this, Your Honor. It's this. Their
7 allegation of infringement under this term is completely
8 divorced from what they told the Patent Office. Even in
9 the excerpt, like I said, of the file history that they
10 truncated, within the broader part of that they say
11 "focused light like this is not collimated."
12 Didn't stop them from making the allegation
13 as part of their -- as part of their infringement
14 contentions.
15 So that's why we need to construe this. And
16 if you have any specific other proposals, I think you
17 understand our position. Our position is a collimated
18 beam can never have focusing or converging light. It
19 can have beam divergence.
20 **THE COURT:** Right.
21 **MR. PIVOVAR:** And we accept that. Our
22 construction does that. It's not necessarily in the same
23 words. Substantively, that's what it does. So form over
24 substance.
25 **THE COURT:** Okay. Thank you.

1 **MR. PIVOVAR:** Thank you, Your Honor.
2 **THE COURT:** Just wait a second, please.
3 All right. Can you point me to anywhere in
4 the written description where there's any statement that
5 to the effect that collimating or collimation, if that's
6 a word, would allow for convergence?
7 **MR. DENNHARDT:** Yes, Your Honor. It's right
8 here. Its' talking about substantially the same
9 diameter. It could have said "substantially the same
10 diameter but without any convergence," but it didn't say
11 that. It just said "substantially the same diameter."
12 Right? So it's not limited to just
13 divergence, as they want to say.
14 **THE COURT:** Okay. Do you have anything else?
15 **MR. DENNHARDT:** I think that's what I have at
16 my fingertips. Again, I would note that the file history
17 itself specifically says --
18 **THE COURT:** The file history, I just want to
19 start right now with the written description of the
20 patent.
21 **MR. DENNHARDT:** Sure.
22 **THE COURT:** Hold on.
23 **MR. DENNHARDT:** Yes, Judge.
24 **THE COURT:** What is a divergence angle?
25 **MR. DENNHARDT:** I believe, Judge, a divergence

1 angle talks about, if you assume what perfect
2 parallelization would be, divergence angle refers to how
3 far a beam might diverge beyond what you would assume to
4 be a perfectly parallel beam.
5 **THE COURT:** Is there such a thing as a
6 convergence angle?
7 **MR. DENNHARDT:** I believe there is, Your
8 Honor, yes.
9 **THE COURT:** What's etendue mean?
10 **MR. DENNHARDT:** Your Honor, it is a complex
11 optical term that does refer to the amount of which a
12 beam varies from a perfectly parallel beam. I would have
13 to defer to an expert on that, which I admittedly am not.
14 **THE COURT:** Okay. Would you agree that that's
15 generally a good definition for etendue? Is that how you
16 pronounce it?
17 **MR. DENNHARDT:** Etendue?
18 **THE COURT:** Yeah.
19 **MR. PIVOVAR:** I didn't catch all of it, but --
20 **THE COURT:** What do you think etendue means?
21 **MR. PIVOVAR:** So etendue is a concept that is
22 a measure for how large a light source is, multiplied by
23 how wide the beam divergence is.
24 So it kind of gets to this notion of, like,
25 how far -- when we talked about a point source, you have

1 a point source and it's going to have all these rays of
2 light that are emanating from a single point. It's
3 going to come out like a cone.
4 Whereas, if you have etendue in a bigger
5 light source, it's not going to come to a point on the
6 cone, it's going to have light emitting from different
7 things. Etendue is a concept that tries to quantify the
8 distinction between what would be a point source and a
9 larger source and how the light is shaped and what
10 implications that has on collimating light and things
11 like that. So it is a concept.
12 **THE COURT:** You had that word in one of your
13 slides, right, etendue?
14 **MR. PIVOVAR:** It's in the patent. That's how
15 they describe it.
16 **THE COURT:** Well, I just want to know, when
17 you have it in your slide, is that from Column 44 of the
18 patent or is that from something else?
19 In other words, is it from another source or
20 is it from the written description of the patent?
21 **MR. PIVOVAR:** It's certainly in the written
22 description of the patent.
23 **THE COURT:** I know it is. In your slide, when
24 you say "it" --
25 **MR. PIVOVAR:** Yeah, I'm sorry.

1 **THE COURT:** -- is the slide that you had where
2 you used the word "etendue," was that taken from the
3 patent?
4 **MR. PIVOVAR:** I believe what I did was I put
5 up a part of the file history of '412 patent. So it's
6 not a slide I have. I used that as a depiction and in
7 that, when I read it, it referred to etendue. It did.
8 I don't believe -- the specification
9 certainly says that. I just want to be clear that -- I
10 think what you may be referring to was when I was
11 reading from the file history on an actual physical
12 document.
13 **MR. DENNHARDT:** Judge, if I recall, I believe
14 it was from the file history of a patent that is not
15 asserted in this case.
16 **THE COURT:** Right.
17 **MR. PIVOVAR:** But it's a concept, and we would
18 agree that experts would get into that. But it's sort of
19 a proxy for saying I have an extended light source. I
20 have, like -- I have a big light source. It's not a
21 point source. That's going to complicate things. We
22 have to adjust for that.
23 **THE COURT:** Do you agree that there's such a
24 thing as a convergence angle?
25 **MR. PIVOVAR:** I don't know that I've ever seen

1 that, but that doesn't mean it doesn't exist, Your Honor.
2 **THE COURT:** But you know what a divergence
3 angle is?
4 **MR. PIVOVAR:** Yes. I mean, that's in our
5 slides and part of our proposed construction, how we
6 mapped it out.
7 **MR. DENNHARDT:** Judge, I do just want to note
8 that this notion that there can be no convergence is not
9 something that -- excuse me -- is not something that is
10 supported by the references. And the notion that a
11 collimated beam can have some convergence or divergence
12 is not something that we made up.
13 I know, Judge, that you are less interested
14 in the extrinsic evidence, but this is from the Fiber
15 Optics Standard Dictionary. This is their reference.
16 It says, "Collimation has minimum possible ray
17 divergence or convergence."
18 So the notion that a person of skill in the
19 art would believe that collimation precludes any
20 convergence is inconsistent with the Fiber Optics
21 Standard Dictionary that Cytek, itself, cites for you.
22 So this is not an idea that we created. I
23 know that my friend on the other side doesn't like this
24 portion of the file history, but it's true. And it's
25 supported by both intrinsic and extrinsic evidence.

1 **THE COURT:** His point, I think, is that it's
2 inconsistent with prior statements made in the file
3 history, and they are very self-serving. That's what
4 happens in these file histories.
5 As you get later patents, you try to get
6 later patents on an earlier written description. To be
7 quite candid, I see it all the time. There's
8 manipulation. And I think it really calls into question
9 how much you can rely on the subsequent file history.
10 I think if the subsequent file history is
11 inconsistent with earlier statements, it's telling.
12 **MR. DENNHARDT:** Judge, I don't -- first of
13 all, I don't think that we're talking about a long
14 variance here. I think that the portion of the file
15 history that we're talking about here comes just a few
16 months after the version that they like. Right?
17 So it's not like this was something that was
18 prosecuted ten years ago, and then ten years later, we
19 said, oh, and by the way, it's limited convergence or
20 divergence. It was within a very short period of
21 months.
22 The second point that I would make is it's
23 not inconsistent. I started, again, from the outset
24 that collimation and focusing are two different things,
25 and we don't dispute that. Right? And that's what that

1 portion, I think, that he has --
2 **THE COURT:** They seem to be saying that they
3 would have an expert who would say absolutely when optics
4 experts are talking about collimation, they would say you
5 can't get perfect parallel waves.
6 Is it waves? Is that the right word?
7 **MR. DENNHARDT:** Rays.
8 **THE COURT:** Rays. Sorry.
9 You can't get them perfect, consistent with
10 what was discussed with the Patent Office, right, in
11 these patents.
12 And there will be some divergence. But it
13 sounds like their expert is going to say, but no one
14 would agree that there's going to be convergence.
15 **MR. DENNHARDT:** And, Judge, if that's what
16 their expert wants to say, we would love to cross him
17 with the Fiber Optics Standard Dictionary.
18 **THE COURT:** That's what strikes me. The word
19 "divergence" is used. "Divergence angle" is used in the
20 patent. "Convergence" is not used. Actually, hold on
21 one second.
22 "Converge" is used once in the patent, but
23 does not appear to be, its usage, to be in any way
24 helpful to construing this term.
25 **MR. DENNHARDT:** Judge, I think the right

1 result here is where you started initially, which is, I
2 think this is going to be a battle of the experts as to
3 what amount of convergence, if any, or divergence, if
4 any, is acceptable.
5 And the right way to approach this is, don't
6 construe the term. Allow the experts to battle it out
7 at trial. Again, we'll ask them, "Well, tell us why the
8 Fiber Optics Standard Dictionary says you can have some
9 convergence."
10 Right, the standard dictionary says you can
11 have some convergence. But you, expert, saying that we
12 don't infringe, says, oh, actually we think it can't.
13 And we'll have that battle at trial.
14 **THE COURT:** But I do not find satisfactory the
15 nearly parallel language that you have in there. I think
16 it's --
17 **MR. DENNHARDT:** Understood, Judge. And I
18 would just, again, point back to the file -- excuse me --
19 the written description that says "substantially the same
20 diameter."
21 It doesn't limit it to convergence or
22 divergence. It just says "substantially the same."
23 And there are numerous cases that say you can
24 talk about substantially. Why can you do that? Because
25 a person of skill knows how much substantially is

1 appropriate.

2 And that includes in connection with

3 substantially parallel in a Delaware case decided by

4 Judge Andrews in which he said "substantially parallel

5 is not indefinite because a person of ordinary skill

6 would know what 'substantially parallel' means," and

7 that's exactly the case here.

8 **THE COURT:** All right. Hold on a second.

9 Okay. Thank you.

10 **MR. DENNHARDT:** Thank you, Judge.

11 **THE COURT:** All right. I'm not going to

12 construe this term. I'm going to give it its plain and

13 ordinary meaning.

14 I do think it raises, though, serious

15 concerns about indefiniteness. I also think there may

16 reach a point where I would have to construe it, but I

17 could only do so after hearing expert testimony.

18 So we'll go to trial, and I will do what I

19 did last week, or two weeks ago in a patent trial, they

20 all go together, where I left it to construe it at

21 trial. Both sides had some risk when they went to

22 trial.

23 In that case, turns out I didn't have to

24 construe it because of the way the expert testimony came

25 in, and we let the jury decide, based on plain and

1 ordinary meaning. And both sides agreed, before the
2 case went to the jury, that we didn't need claim
3 construction. So that could happen here.
4 Let me say a couple things. I mean, I am
5 very sympathetic to the defendant. And I think it's
6 undisputed, first of all, that, one, you cannot achieve,
7 at least in practice, if not even possibly in this
8 world, absolute parallel rays. And yet, it's also
9 undisputed that "collimating" is a concept that's
10 understood by the experts in this field.
11 I think it's undisputed that there can be
12 some divergence in rays that are recognized as
13 collimated. Very much disputed whether you could have
14 convergent angles in a collimated beam.
15 The patent, in various instances, discusses
16 substantial or substantially collimated beams. If you
17 look at, for instance, Column 2, 26 through 29, the
18 lines of Column 2, they discuss a device capable of
19 collimating a light beam from an extended light source
20 over an extended distance without significantly
21 expanding the beam diameter.
22 So consistent with there can be a divergent
23 angle, that sentence seems to me to suggest that you can
24 have a collimated beam with some divergence. But it's
25 without significant divergence. And then that begs, you

1 know, the question is, is it possible to have any really
2 definite sense of what this patent is claiming.
3 And then in the claims, but I put less stock
4 in the claims on this, there is discussion about
5 substantially the same diameter. I find it more
6 probative, the written description citation I just gave.
7 But I don't think I have to go further on that because I
8 think it's pretty much undisputed about divergence.
9 And I just think that it's likely this will
10 boil down to a question of degree that the experts will
11 have differing viewpoints on; i.e, what degree of
12 divergence and, perhaps, convergence could be accepted
13 and still have a collimated beam.
14 So I am just going to give it its plain and
15 ordinary meaning. I'm not going to construe it, and
16 we'll have a battle of the experts.
17 All right. Next?
18 You are going to have to pick it up.
19 **MR. KHAN:** Thank you, Your Honor. So based on
20 the parties' discussions, next term will be "optical
21 element."
22 **THE COURT:** Okay.
23 **MR. KHAN:** And so on this one, Your Honor, the
24 term is "optical element." It is situated within a
25 larger term. Optical element configured to detect.

1 And, essentially, the difference is between
2 whether the optical element term has a well-understood
3 meaning in the art or whether it should be construed as
4 means -- means-plus-function. And then they contend if
5 it is means-plus-function, then there's no appropriate
6 construction. And it's indefinite.
7 So, really, when we're talking about sort of
8 whether it's means-plus-function term or not, in the
9 context of this claim, there's really, Your Honor, two
10 issues. The first is whether optical element is a
11 structural term. The second is whether that structure
12 performs the function.
13 So we're going to take those in pieces, Your
14 Honor, if you don't mind. So we'll start with the
15 claims.
16 As I said, "optical element" is situated in
17 this claim as "optical element configured to detect,"
18 but there are other terms, Your Honor, where optical
19 element is used differently.
20 So, in other terms, there's a collimating
21 optical element that's coming later in our discussion as
22 a later-to-be-construed term. Collecting optical
23 element, focusing optical element.
24 But here, we're talking about an optical
25 element configured to detect. If the Court were to find

1 that optical element is a structural term that confers
2 structure, that would have consequences for all of the
3 terms.
4 If the Court were to find that optical
5 element is not a structural term, then we would have to
6 deal with each term on its own.
7 **THE COURT:** Right. Which I am inclined to do.
8 So what I need you to do to help me out, what
9 concerns me, or rather why I am inclined to say it's a
10 means-plus-function, is because I'm not sure I see
11 sufficient structure in the patent claims.
12 And you would agree as a matter of law,
13 right, I must start with, there must be sufficient
14 structure in the claims. Correct?
15 **MR. KHAN:** Correct.
16 **THE COURT:** Okay. So let's quickly go, where
17 in the claims is there sufficient structure?
18 **MR. KHAN:** Right. So the structure in this
19 claim is the optical element term.
20 **THE COURT:** Right. Now, you're referring
21 right now to Claim 13 of the '443 patent, correct?
22 **MR. KHAN:** Correct.
23 **THE COURT:** And it reads, quote, "An optical
24 element configured to detect scattered light emitted by
25 the particle in the flow channel and illuminated by a

1 light source," unquote.
2 Where is the structure there in that claim?
3 **MR. KHAN:** Right. And so first we start with
4 the presumption. It is not --
5 **THE COURT:** You're going back. I'm already on
6 the law. Come on. We know what the law is. Let's get
7 to sufficient structure --
8 **MR. KHAN:** So here is the structure --
9 **THE COURT:** Time out. Time out. Because we
10 are short on time. And I'm being generous with time.
11 The question is, and I think you already
12 agreed to this, you have to show that there's sufficient
13 structure in the claim.
14 **MR. KHAN:** Yes.
15 **THE COURT:** If it's not going to be
16 means-plus-function. Correct?
17 **MR. KHAN:** Correct.
18 **THE COURT:** Okay. Let's go to that. You just
19 had the language up.
20 **MR. KHAN:** Right.
21 **THE COURT:** Where is the structure?
22 **MR. KHAN:** The words in the claim were
23 "optical element," and here, Your Honor, widely
24 understood, just like we talked about how the word
25 "collimate" and "collimation," two experts could have an

1 understanding of what that means, "optical element" is
2 defined in dictionaries, treatises. We cited at least a
3 half dozen dictionaries and treatises where "optical
4 element" is a well-understood structural term.
5 Just like the Federal Circuit said, with
6 respect to fasteners. And in that case, Your Honor,
7 fasteners, the Federal Circuit said, you know what's a
8 fastener? A rivet, a button, Velcro. Lots of different
9 classes of structures. And here, "optical element" is a
10 well-understood structural term that says, basically, I
11 know what I'm talking about.
12 In each instance, it's a component that's
13 acting upon light. And the -- and the specification
14 confirms that. It basically says, hey, here's an
15 optical element. It could be a lens. Just like the
16 definitions that the experts would understand. It could
17 be a concave mirror, just like -- as in the experts'
18 definitions can understand. And then there are other
19 aspects, like prisms that are described in the
20 specification.
21 So --
22 **THE COURT:** So it could be anything having to
23 do with optics. This has got to be any kind of structure
24 having to do with optics, right?
25 **MR. KHAN:** It's a structure that acts upon

1 light and, as understood widely in the glossary of
2 optical terms, Your Honor, in the Fiber Optic Standard
3 Dictionary, these are definitions of the term to
4 understand that it's a class of structures.
5 And it's a class of structures that's going
6 to have -- just like fastener, it's going to have
7 various -- a class of structures. And the -- but it's
8 defined in the dictionary, in the treatises in exactly
9 the way that you would expect, just like fastener, just
10 like all the other Federal Circuit cases that we've
11 given you.
12 **THE COURT:** All right. Now, bottom line,
13 really what the real term here is element. Its element
14 in the field of optics. That's really what the structure
15 is, right?
16 **MR. KHAN:** No, Your Honor. We would -- it's
17 optical element. An optical element is an understood
18 structural term. And there are cases that talk about how
19 element is not always a nonce term if it's a
20 well-understood structural term.
21 So there's cases talking about article
22 feeder -- feeder element. Even in Delaware, Your Honor,
23 there's -- there are -- by the way, there are other
24 cases, including one in Delaware, that says optical
25 element means an element that refracts -- refracts,

1 deflects, diverts or focuses light beams.
2 Another Delaware case, Your Honor, the
3 physical structure, namely one or more optical elements
4 or lenses.
5 **THE COURT:** All right. I'm just going to
6 rule. Do you have anything else, any other structure you
7 want to point to?
8 **MR. KHAN:** In the claims, Your Honor, in that
9 claim, it's optical element.
10 **THE COURT:** Okay. That's not sufficient. I
11 can explain why. You want to say anything else?
12 **MR. KHAN:** Would you like me to address the
13 means-plus-function, corresponding structure, or --
14 **THE COURT:** Well, you want to finish the other
15 claims? Because, right, you have to have sufficient
16 structure in the claims. We've agreed on that.
17 **MR. KHAN:** Correct.
18 **THE COURT:** For Claim 13, you have, the only
19 structure you point to is the optical element.
20 Is there any other structure in any of the
21 other claims besides optical element you want to point
22 to?
23 **MR. KHAN:** In these claims, no, Your Honor.
24 **THE COURT:** When you say "these claims," are
25 there other claims?

1 **MR. KHAN:** Not ones that are at issue before
2 you. That's correct, yeah.
3 **THE COURT:** Okay. Right.
4 So, in other words, what I'm getting at is,
5 there's nothing in any of the language, it's not in your
6 brief, but I thought maybe there's a lot of stuff coming
7 up in this hearing that wasn't in the briefing. So I'm
8 thinking, well, maybe there's something else you want to
9 rely on.
10 But just to be clear, the structure in the
11 claims you're pointing to are the words "optical
12 element," unquote.
13 **MR. KHAN:** Correct, Your Honor.
14 **THE COURT:** Okay. So I don't think that
15 that's sufficient structure. I think element is a nonce
16 word, and when I read the claims, it's very clear to me
17 element is being used as a generic nonce word that,
18 basically, it operates as a substitute for means, it does
19 not connote structure.
20 And while I think you could make that
21 determination solely from the intrinsic evidence, I
22 think the defendant has offered a persuasive affidavit
23 that demonstrates that optical element does not connote
24 a class of structures.
25 I think, bottom line, is that it essentially

1 means, I believe, Mr. Khan, with all due respect, I
2 think if you read back what you said, it's effectively a
3 structure used within optics. And it can refer to, it
4 sounds like, almost any device used within optics.
5 And what the key here is that the language of
6 the claims makes clear that it's functional because
7 what's being claimed is an optical element configured to
8 do something, to perform a function. And there's no
9 other structure in the applicable claims besides optical
10 element that reveals what that structure would be.
11 So I think the presumption against
12 means-plus-function is overcome, and I think it's easily
13 overcome. So if you want to talk about corresponding
14 structure, we should do that.
15 **MR. KHAN:** Let's do that.
16 So, your Honor, if we go to the corresponding
17 structure. So for the corresponding structure, on
18 this -- on Claim 13, 17, and 18 of the '443 patent. So
19 the issue is whether the function is detects scattered
20 light emitted by the particle and flow channel
21 illuminated by a source.
22 And so the corresponding structure in the
23 specification that is directly linked to those functions
24 is the composite microscope objective. And, here,
25 the -- here's an example where it says "The composite

1 microscope objective provides into an optical fiber for
2 transmission into WDM."
3 **THE COURT:** I didn't hear you. What?
4 **MR. KHAN:** "The composite microscope objective
5 is the corresponding structure."
6 And I skipped over a number of slides, but
7 I'm going to go back to them because -- sorry -- because
8 the issue here, Your Honor, is what does the word
9 "detect," mean?
10 And, essentially, if the word "detect" means
11 what they say it means, which is to say that an optical
12 -- that the structure has to be something that converts
13 into an electrical light into a signal, like an
14 electrical signal, right? That's what they're saying.
15 The detect -- that's not what detect means in
16 the art. "Detect," in the art, just means to find or
17 discover something, to determine the presence. And
18 that's exactly what the cases say, which is that the
19 claimed function of displaying information could be
20 implemented using off-the-shelf code."
21 **THE REPORTER:** Can you speak up.
22 **MR. KHAN:** Sorry.
23 So -- and then we've given you two cases,
24 Your Honor, the *Intel* case and *Tech Licenses* cases.
25 Here is the Federal Circuit saying that the

1 specification doesn't have to tell you how to modify the
2 structure or how to configure the structure to perform
3 the function. You just need the corresponding structure
4 to be linked to the function. You just need to recite
5 some structure.
6 And here, the -- here's the linking statement
7 in the specification, Your Honor. "The composite
8 microscope includes a concave mirror and aberration
9 corrector plate. This allows a contact buildup and the
10 illumination and detection of light scattered from and
11 fluoresced by the object in the viewing zone may be
12 conducted from the same side of the microscope
13 objective."
14 This is exactly what the claims is talking
15 about. This is the function and it's being described as
16 being done by the microscope objective.
17 So this is exactly what the cases are talking
18 about. And I think at the end of the day, what the real
19 dispute is about what does "detect" mean. Because if
20 we're right on what detect means, Your Honor, then
21 there's no dispute that this would be a corresponding
22 structure in the specification. And that's why I was
23 focusing on that so much.
24 **THE COURT:** Can you stop there for a second?
25 **MR. KHAN:** Yes.

1 **THE COURT:** Because I agree. That is what
2 this dispute boils down to, it's really what does
3 "detect" mean, right?
4 **MR. KHAN:** Yes.
5 **THE COURT:** Okay. Hold on.
6 Their argument is that the objective that's
7 disclosed is collecting, right, gathering an imaging?
8 **MR. KHAN:** Right.
9 **THE COURT:** Right? That's what they're
10 pointing to?
11 **MR. KHAN:** Exactly.
12 **THE COURT:** Now, but you're pointing to the
13 language here that --
14 **MR. KHAN:** We would say, Your Honor, that the
15 specification directly relates and links the microscope
16 objective to detection.
17 **THE COURT:** Okay.
18 **MR. KHAN:** Not just gathering, collecting, and
19 imaging. Directly relates it to the detection of the
20 light.
21 And they are going to point you to some
22 passages much later in the specification that also talk
23 about other detecters, but this passage is focused on
24 the microscope objective. And the microscope objective
25 is described as performing the function of detection of

1 light.

2 So it's not just gathering, collecting,

3 and --

4 **THE COURT:** Is there anything else besides...

5 Hold on a second.

6 **MR. KHAN:** There is more in the specification.

7 **THE COURT:** Just hold on. Just give me a

8 second.

9 **MR. KHAN:** Yes, Your Honor.

10 **THE COURT:** Is that in your brief?

11 **MR. KHAN:** It is, Your Honor.

12 **THE COURT:** Where?

13 I'm looking at Page 70, 71.

14 **MR. KHAN:** It's, for example, at Page 56.

15 **THE COURT:** Fifty-six?

16 You're right. You got it. Okay. I was

17 focused on later down. All right.

18 All right. Let me hear them on this

19 corresponding structure.

20 So that seems to me, Mr. Chen, your big

21 argument was wrong function. It's not detection.

22 **MR. CHEN:** That's correct.

23 **THE COURT:** But this passage, I hadn't focused

24 on it, to be honest.

25 **MR. CHEN:** Yeah.

1 **THE COURT:** I mean, it seems to address
2 detection. No?
3 **MR. CHEN:** It does not, Your Honor. And,
4 actually, I'm glad we can start right here.
5 So let's actually go to our slides, please.
6 Seventy-five, please.
7 So this is on Page 70 of the claim
8 construction brief. And this is what BEC points to.
9 They say in their brief that the
10 specification explains that an objective, an optical
11 element, gathers and images light and that detection of
12 that light may be conducted from the side of the
13 microscope objective.
14 That's what they included in their brief,
15 Your Honor. That's misleading. They left out a key
16 word. The same side. The same side of the microscope
17 objective. Why does that matter?
18 **THE COURT:** Hold up.
19 Okay.
20 **MR. CHEN:** It's not the side of the objective
21 that's detecting light. All this passage says in the
22 specification is that detection occurs on the same side
23 of the microscope objective.
24 What does that mean? This is the microscope
25 objective 60. We talked about this a little bit

1 earlier. It has a concave mirror 415 in the back, it
2 has an aberration corrector plate 414 in the front
3 there, at the top.
4 **THE COURT:** Yeah.
5 **MR. CHEN:** Light passes through, it hits the
6 flow cell. Light scatters and it also fluoresces.
7 The only things in the specification that
8 perform detection are 408 and 413. Those are the only
9 passages in the specification that talk about detection.
10 The passage that we looked at earlier where
11 it says that detection of light scattered and
12 fluoresced, scattering and fluorescing, may be conducted
13 from the same side of the microscope objective.
14 All that means is that you're having
15 detection of side scattered light and fluorescent light
16 on the same side of the microscope objective.
17 An objective is a piece of glass or plastic.
18 It does not detect. We cited to numerous
19 dictionaries -- optical dictionaries, not the Collins
20 Dictionary -- optical dictionaries that say that a
21 detector in Exhibit 45 is an example -- and I can just
22 put it on the Elmo here.
23 **THE COURT:** It's all extrinsic evidence,
24 though, is the bottom line.
25 **MR. CHEN:** Oh, I agree. I think the intrinsic

1 evidence makes it very clear that the only things that
2 could be a detector are 408 and 413, Your Honor.
3 Scattered detecter, side scatter detecter.
4 But the extrinsic evidence says a detector --
5 and there's multiple dictionaries that we cited to,
6 Exhibits 45 through 50, that say a detector is a device
7 that generates an electrical signal when illuminated by
8 light. Electrical signal.
9 **THE COURT:** Okay. Hold on. I want you to
10 just look.
11 So the passage you're referring to where
12 they -- where you think they're misleading, it's relying
13 on Column 5, 62 to 65. Okay?
14 But earlier on, when I said was it in your
15 brief, it was a different cite, it was 56. So it starts
16 at Line 56. Okay. But it's right before this passage,
17 but it must incorporate it. It's 56 to 65. All right.
18 Okay. Let me hear from them.
19 **MR. KHAN:** Your Honor, the notion that we sort
20 of misquote that quote is totally wrong because I pointed
21 you to Page 56 of the brief. And we had exactly the same
22 side. The language that Mr. Chen is saying we apparently
23 omitted, we did no such thing.
24 **THE COURT:** Hold up.
25 Okay. So he's focused on what you said on

1 Page 70. And today, you've pointed me to Page 56. But
2 let's not get into worry about whether there was a fast
3 one or not. I think the bigger issue is this:
4 Now that I've had the benefit of oral
5 argument, and I skipped over 56 or just didn't see it as
6 much, focused more on 70; although, it's in 70.
7 Well, bottom line, put all that aside. I'm
8 looking right now at Column 5, Lines 56 to 65. Okay?
9 That's the only language that you are pointing to for
10 structure, right?
11 **MR. KHAN:** No, Your Honor. We're also
12 pointing to --
13 **THE COURT:** Before you go further, I don't see
14 the structure there. It seems to me what's being
15 discussed in those lines of the patent is the fact that
16 some light emanates from the objective and is then
17 detected by another structure. And, I mean, can you
18 point to -- do you even dispute that?
19 **MR. KHAN:** Yeah, we do, Your Honor.
20 **THE COURT:** You're telling me the objective
21 actually detects it?
22 **MR. KHAN:** Because, Your Honor --
23 **THE COURT:** Hold up. Because this I do want,
24 I'm going to press you.
25 **MR. KHAN:** Yes.

1 **THE COURT:** Because it's one thing to say that
2 the objective allows for the detection by something else.
3 And I think that would be a credible statement. It's
4 another thing to say that it is the objective within this
5 language here, Lines 56 to 65, that detects it.
6 Which one are you saying?
7 **MR. KHAN:** If we think of "detect" as
8 gathering, collecting, imaging, right, then it is, in
9 fact, detected.
10 **THE COURT:** Okay. Where, what source would
11 tell me to equate...
12 In the context of this patent, in this
13 discussion here specifically --
14 **MR. KHAN:** Right.
15 **THE COURT:** -- you're telling me that "detect"
16 is referring to a function performed by the objective?
17 **MR. KHAN:** Your Honor, if we're talking about
18 what the word "detect" means, the claims, themselves,
19 tell you that it's an optical element that detects. And
20 so we have to under- -- we have been in a world where
21 it's a possibility of an optical element detecting.
22 Here, the composite microscope objective does
23 collect imaging light, it does gather an imaged light,
24 and it is gathering light from or fluoresced by the
25 illuminated particle. That is tracking almost exactly

1 the language of the claim -- of the claims that we were
2 just talking about. And so --
3 **THE COURT:** Wait, wait, wait. Hold on.
4 The claim we were talking about?
5 Claim 13, right?
6 **MR. KHAN:** Correct.
7 **THE COURT:** Sorry.
8 What claim again? Is it 13?
9 **MR. KHAN:** '443 is Claim 13.
10 **THE COURT:** Okay. By the way, for the record,
11 I was referring by the lines of the patent in Column 5.
12 I was referring to the '532 patent. I think everybody
13 has used the written description of the '532 patent.
14 **MR. KHAN:** '582 patent.
15 **THE COURT:** '582. Sorry. Apologize.
16 **MR. KHAN:** Yes, Judge.
17 **THE COURT:** Yeah. So --
18 Hold on.
19 So you want to go to the language of the
20 claims. Is that what you wanted to do?
21 **MR. KHAN:** I wanted to -- we can do that, Your
22 Honor. So here's the language of the claim. So the
23 language of the claim is "Optical element configured to
24 detect scattered light emitted by the particle in the
25 flow channel" --

1 **THE COURT:** Right.

2 **MR. KHAN:** -- in the light source. If "detect"

3 means --

4 **THE COURT:** Hold on. What's the light source?

5 **MR. KHAN:** The light source here would be the

6 laser.

7 **THE COURT:** Okay. And then the particle?

8 **MR. KHAN:** The particle is -- particle

9 generally means any particle, but here it would be the

10 cell.

11 **THE COURT:** The cell of the light wave that's

12 in the objective, correct?

13 **MR. KHAN:** No. The cell that's flowing

14 through the flow channel.

15 **THE COURT:** It's flowing through. And then

16 the scattered light that's emitted by that particle

17 occurs in the objective, right, the scattering of the

18 light?

19 **MR. KHAN:** Correct. The scattered light is

20 collected by the objective.

21 How do we know that? The specification

22 itself says, you know, the composite, the microscope

23 objective gathered light scattered from --

24 **THE COURT:** Right.

25 **MR. KHAN:** -- or fluoresced by --

1 **THE COURT:** Right.

2 **MR. KHAN:** -- the illuminated particle.

3 **THE COURT:** Right. In other words, what's

4 going on in the objective is the scattering and the

5 fluorescing of the light of the particle, correct?

6 **MR. KHAN:** Correct.

7 **THE COURT:** You call it illumination, if you

8 want to, as well.

9 **MR. KHAN:** Of the illuminated particle.

10 **THE COURT:** Right.

11 **MR. KHAN:** In tracking the language of the

12 claim --

13 **THE COURT:** Right.

14 **MR. KHAN:** -- if "detect" is understood to

15 mean just discover or find, right, if we go back to the

16 claim -- sorry. Here. "An optical element configured to

17 discover or find scattered light emitted by the particle

18 in the flow channel illuminated by a light source, that's

19 the composite microscope objective. That's what it's

20 doing. That's its function. It's clearly linked in the

21 specification.

22 The trick is, what my colleague on the other

23 side is saying is, no, no, no, detect means you have to

24 convert it, convert the light into a signal.

25 That's not necessarily what detect means.

1 Detect just means find or discover something. And
2 that's what the composite microscope objective is doing
3 in this context.
4 It is -- and it's doing it with exactly the
5 elements that are described in the claim. It is doing
6 it with respect to the scattered light emitted by the
7 particle in the flow channel and illuminated by the
8 light source.
9 **THE COURT:** So then, you're saying Claim 13...
10 Put up Figure 25. Or not Figure 25. Put up
11 the first figure in the patent.
12 All right. Now, 90. What's 90?
13 **MR. KHAN:** 90, I believe, is the fiber optic
14 cable to the WDM.
15 **THE COURT:** What's 852?
16 **MR. KHAN:** I'm sorry?
17 **THE COURT:** What's 852?
18 **MR. KHAN:** I believe that's a fiber optic
19 cable. That's the --
20 **THE COURT:** Yeah. I thought you just said
21 that's 90?
22 **MR. KHAN:** Oh. 852 is -- 90 appears to be
23 the -- oh, 90 is the WDM. Sorry.
24 **THE COURT:** The WDM.
25 **MR. KHAN:** Right.

1 **THE COURT:** What's the WDM do?
2 **MR. KHAN:** It is --
3 **THE COURT:** What's it called? What does "WDM"
4 mean?
5 **MR. KHAN:** I means wavelength division
6 multiplexer.
7 **THE COURT:** Okay. And what does it do?
8 **MR. KHAN:** It's basically the optical
9 components that are going to convert the optical signal
10 into an electrical signal to determine what is present in
11 the flow cell.
12 **THE COURT:** To determine what is present in
13 the what?
14 **MR. KHAN:** In the flow cell.
15 **THE COURT:** In the what? What did you say?
16 **MR. KHAN:** The flow cell. So the --
17 **THE COURT:** Flow cell. In the flow cell.
18 Yep. I know what you mean. I just wanted to get your
19 exact words. Okay.
20 **MR. KHAN:** The --
21 **THE COURT:** Hold up. Hold up.
22 **MR. KHAN:** Sure.
23 **THE COURT:** And just for definitions, what's a
24 cytometer?
25 **MR. KHAN:** What's that?

1 **THE COURT:** Cytometer?
2 **MR. KHAN:** A cytometer is an instrument to --
3 to analyze cells. A flow cytometer --
4 **THE COURT:** Hold on. I just want to --
5 **MR. KHAN:** Sure.
6 **THE COURT:** It's an instrument to analyze
7 cells.
8 **MR. KHAN:** So cyto means cell.
9 **THE COURT:** Yep.
10 **MR. KHAN:** And meter means, basically, an
11 instrument.
12 **THE COURT:** And is WDM a cytometer.
13 **MR. KHAN:** WDM would be a component of a
14 cytometer, yes.
15 **THE COURT:** And it, what it does is it
16 determines what's present in the flow cell?
17 **MR. KHAN:** It's giving you --
18 **THE COURT:** Literally, I wrote that down.
19 That's what you --
20 **MR. KHAN:** The electrical signals --
21 **THE COURT:** That's what you incidentally, and
22 the record will reflect this, I just read back what you
23 said to me. You said a WDM, it determines what is
24 present in the flow cell. That's your definition.
25 Are you backing off that?

1 **MR. KHAN:** No, no, no.
2 **THE COURT:** Okay.
3 **MR. KHAN:** What I'm saying is it's giving you
4 the electrical signals to tell you what's in the flow
5 cell, yes.
6 So that's why we need --
7 **THE COURT:** Hold up. Hold up.
8 **MR. KHAN:** Yeah.
9 **THE COURT:** Now, this figure that we're
10 pointing to, Figure 1, what does it depict? Does it
11 depict a cytometer?
12 **MR. KHAN:** The full flow cytometer, correct.
13 **THE COURT:** Okay. All right. Now, where is
14 there scattered light?
15 **MR. KHAN:** Scattered light is here. So --
16 **THE COURT:** Hold up. You're just doing that.
17 Just tell me just point. Is it in the objective?
18 **MR. KHAN:** Correct, Your Honor.
19 **THE COURT:** It's in the objective.
20 **MR. KHAN:** Yes.
21 **THE COURT:** Is it anywhere else?
22 **MR. KHAN:** I don't think there would be --
23 there might be -- there's going to be scattered light in
24 the system generally because light is, as we've talked
25 about, not perfect, right? So it's being scattered

1 everywhere.
2 But in the context of what the patent is
3 talking about when it's trying to capture the scattered
4 light, the scattered light --
5 **THE COURT:** When the objective is trying to
6 capture. So the objective captures the scattered light?
7 **MR. KHAN:** That's exactly what the
8 specification says, Your Honor.
9 **THE COURT:** Okay.
10 **MR. KHAN:** And I pointed --
11 **THE COURT:** Does the scattered light leave the
12 objective?
13 **MR. KHAN:** The scattered light is -- yeah,
14 it's captured and then it leaves the objective, yes.
15 **THE COURT:** Where does it go to?
16 **MR. KHAN:** It then -- the objective then leads
17 to the WDM.
18 **THE COURT:** Right.
19 **MR. KHAN:** To the fiber optic cable.
20 **THE COURT:** That's what I thought.
21 **MR. KHAN:** Right.
22 **THE COURT:** And the scattered light, though,
23 exists before the objective. Is that what you're saying?
24 It exists in the laser?
25 Like what precedes? There's a laser beam

1 going into the objective, right?
2 **MR. KHAN:** Right.
3 **THE COURT:** Yeah. You're saying there's
4 scattered light in the laser beam?
5 **MR. KHAN:** It's not going to be in the laser
6 beam.
7 **THE COURT:** Okay.
8 **MR. KHAN:** So when the laser hits a cell,
9 that -- and when it -- so there's a flow cell, so cells
10 are going through the flow cell.
11 **THE COURT:** Yep.
12 **MR. KHAN:** And when a laser beam hits a cell,
13 it's going to create scatter --
14 **THE COURT:** Right.
15 **MR. KHAN:** -- and fluoresces light.
16 **THE COURT:** I thought this, but maybe I'm
17 wrong. I thought the laser beam hit the cell when the
18 cell's in the objective?
19 **MR. KHAN:** Correct.
20 **THE COURT:** Okay.
21 **MR. KHAN:** Yes.
22 **THE COURT:** So the scattering occurs in the
23 objective?
24 **MR. KHAN:** The scattered light is occurring
25 inside the objective, which collects the scattered light,

1 yes. Gathers up the scattered light.
2 **THE COURT:** And then the scattered light
3 leaves the objective to go to the WDM, right?
4 **MR. KHAN:** Yes.
5 **THE COURT:** Okay. And then the WDM, now you
6 want to use the word "determines."
7 What in that, is in that scattered light in
8 order to determine what is present in the flow cell,
9 right?
10 **MR. KHAN:** Right. It's going to -- the WDM is
11 converting light into signals, electrical signals.
12 **THE COURT:** Yep.
13 **MR. KHAN:** That are telling you what's in the
14 cell, right.
15 **THE COURT:** Right. And you need that in order
16 to determine what's in the flow cell? You need that
17 change into electric signals, correct?
18 **MR. KHAN:** In a flow cytometer, yes, Your
19 Honor.
20 **THE COURT:** Right.
21 **MR. KHAN:** Right.
22 But in the first instance --
23 **THE COURT:** Hold on.
24 **MR. KHAN:** Oh, yes.
25 **THE COURT:** And where is the flow channel in

1 Figure 1?

2 **MR. KHAN:** Inside the microscope objective.

3 So it's this.

4 **THE COURT:** Does it leave it?

5 **MR. KHAN:** Does it leave?

6 **THE COURT:** You're saying and the flow channel

7 only exists within the objective? Is that what you are

8 saying?

9 **MR. KHAN:** In the exemplary embodiment, yes,

10 the flow channel is inside the composite microscope

11 objective.

12 **THE COURT:** All right. So doesn't include,

13 for instance, the 90, right?

14 **MR. KHAN:** It would not.

15 **THE COURT:** You don't think it does. All

16 right.

17 And then 852, how is 852 different than 90?

18 So you agreed, actually, 90 you agree is the

19 WDM?

20 **MR. KHAN:** The fiber optics plus the other

21 semiconductor components here and the --

22 **THE COURT:** Yes.

23 **MR. KHAN:** -- mirrors and the filters that we

24 spent a lot of time talking about, together those would

25 be qualified as the WDM.

1 90 is, Your Honor, if we look at -- it's 28,
2 Column 12.
3 **THE COURT:** Yeah.
4 **MR. KHAN:** It says Column 8, 9, a wavelength
5 division multiplexer 90.
6 **THE COURT:** Right. Okay.
7 **MR. KHAN:** For optically processing scattered
8 and/or fluoresced light received from the fiber, 852.
9 **THE COURT:** And it's received from the fiber,
10 which is 852.
11 **MR. KHAN:** Yes.
12 **THE COURT:** And so all the scattered light
13 that leaves the objective, goes through that 852 to the
14 WDM?
15 **MR. KHAN:** It should, yes.
16 **THE COURT:** Well, you're counting the 852 as
17 being part of the WDM, I guess. Are you?
18 **MR. KHAN:** The specification considers it as
19 part of the WDM, yes.
20 **THE COURT:** Okay.
21 Mr. Chen, why do you think the person
22 responsible for drafting this patent chose to use the
23 verb "to detect"?
24 **MR. CHEN:** I do think it's imprecise, Your
25 Honor. Your Honor is correct to focus on the claim

1 language which I have up here.
2 The parties agree that the functions are to
3 detect scattered light. Scattered light. And then also
4 the second function is that there needs to be an
5 outputting based on the detected scattered light, the
6 light to the WDM via the optical fiber, Your Honor.
7 And so Your Honor is correct to focus on the
8 claim language. And when we look at only the
9 specification, only the specification, the only
10 components that perform detecting are -- of scattered
11 light.
12 There's -- as I said at the beginning there's
13 both scattered light and fluoresced lights. The only
14 components that detect scattered light, as required in
15 the claim language, are 408 and 413. That's the forward
16 scatter light detector and the side scatter detector.
17 And that's in the specification passage at Column 53,
18 Lines 63 to Column 54 --
19 **THE COURT:** And you would agree, they're part
20 of the WDM?
21 **MR. CHEN:** They are not actually part of
22 the --
23 **THE COURT:** You don't think they are?
24 **MR. CHEN:** They are not, actually, Your Honor,
25 so I wanted to actually clarify that point.

1 I think what counsel said for Beckman Coulter
2 actually supports our position in that the -- there's
3 another set of detectors in the WDM that performs
4 detection. Not all the components, but for example, the
5 detectors that detect the fluoresced light --
6 **THE COURT:** Right.
7 **MR. CHEN:** -- the fluoresced light goes into
8 the WDM, into the optical fiber.
9 **THE COURT:** Not the scattered light?
10 **MR. CHEN:** That's right. Not the scattered
11 light. So --
12 **THE COURT:** So where does the scattered light
13 go? I mean, in Figure 1, where does it go?
14 **MR. CHEN:** Yeah. So Figure 1, which is
15 similar to Figure 31, so if you wouldn't mind, I'll just
16 use Figure 31, Your Honor. It's very similar to
17 Figure 1.
18 **THE COURT:** Okay.
19 **MR. CHEN:** Okay. So the scattered light, it
20 scatters, and it fluoresces. And the scattered light,
21 there's forward scattered light and side scattered light.
22 **THE COURT:** Right.
23 **MR. CHEN:** And it's not depicted on this
24 Figure 31, but if you go to Figure 38, it shows that the
25 forward scattered light is then going to be reflected off

1 of a relay element to the forward scatter detector 408,
2 and the side scattered light is going to be side
3 scattered to a detector 413.
4 **THE COURT:** Right. But, I mean, it seems to
5 me that this figure, is it 31? Where's Figure 31?
6 **MR. CHEN:** Yeah, Figure 31.
7 **THE COURT:** See, Figure 31, like that's what
8 they show on the front page of the patent.
9 **MR. CHEN:** Yeah.
10 **THE COURT:** I mean, you think that's the real
11 invention here.
12 **MR. CHEN:** Yeah.
13 **THE COURT:** But I don't see 408, I don't see
14 how they fit in. Where would they fit into this?
15 **MR. CHEN:** Yeah. I mean, where they would fit
16 in, Your Honor, and if -- you're right that it's
17 Figure 1, I believe, that's shown at the -- on the face
18 of the patent.
19 **THE COURT:** Oh, 31. Okay.
20 **MR. CHEN:** It's very similar to Figure 31.
21 It's exactly as Figure 38 describes it, right, the light
22 is coming from a laser source, 412, here.
23 **THE COURT:** Right.
24 **MR. CHEN:** The laser shines onto the flow
25 cell. The light, then, both scatters and fluoresces.

1 **THE COURT:** I get that, but I'm just curious,
2 like, why isn't it in the Figure 1 or the Figure 31?
3 **MR. CHEN:** Yeah, I'm know not sure why the
4 patentee didn't include it there.
5 I think because they're mainly focused on the
6 WDM as their alleged invention. They're not as focused
7 on the forward scatter detectors or side scatter
8 detectors, but the claim language says that there are
9 optic elements that perform the claimed functions to
10 detect scattered light, and then also to output that
11 scattered light to a fiber optic to the WDM, right?
12 That's what it says.
13 **THE COURT:** Uh-huh.
14 **MR. CHEN:** Uh-huh.
15 **THE COURT:** But to be clear, you don't
16 dispute...
17 I mean, like, because, for instance, Claim 1
18 talks about the WDM having a set of detectors.
19 **MR. CHEN:** Uh-huh.
20 **THE COURT:** Not only do you not dispute but
21 you're saying, you're telling me don't get misled.
22 That's got nothing to do with scattered light.
23 The detection of Claim 1 has nothing to do
24 with scattered light, right? I just want to be clear.
25 **MR. CHEN:** Yes, there's a separate -- there's

1 a separate claim element, for example, in Claim 18 of the
2 '443 patent, there is a separate recitation to detectors
3 that detect fluoresced lights.
4 To be clear, you can have some configurations
5 where the scattered light does actually go into the WDM.
6 I'm not saying that's not possible.
7 But at least based on this example, this
8 exemplary embodiment, this does not appear to be part of
9 the WDM. It appears to be outside. And there certainly
10 are real-world systems, including Beckman Coulter's,
11 where the scatter detectors are outside of the WDM.
12 But regardless, it's not the objective.
13 **THE COURT:** It's not. That's the point.
14 **MR. CHEN:** Yeah. That's the most important
15 point is the objective is not doing any detection
16 whatsoever. That's not possible.
17 Our position is that an optical element does
18 not detect, therefore, these terms are indefinite.
19 However, if there is any structure that performs the
20 claimed functions, it is these detectors, 408 and 413.
21 **THE COURT:** Okay.
22 All right. Do you want to say anything else?
23 **MR. CHEN:** No, thank you, Your Honor.
24 **THE COURT:** All right.
25 You can come up but give me a second.

1 **MR. KHAN:** Sure.
2 **THE COURT:** Go ahead.
3 **MR. KHAN:** Your Honor, I'm just going to put
4 Figure 1 back up. So if we can go to that.
5 **THE COURT:** By the way, I've been saying
6 Figure 1. And when I do it, I was referring to the front
7 page of the patent. I don't know if it's really called
8 Figure 1. I might be wrong.
9 **MR. KHAN:** It is Figure 1 --
10 **THE COURT:** It is? Okay.
11 **MR. KHAN:** -- of the '582 patent, right.
12 **THE COURT:** Okay. And it looks a lot like
13 Figure 31.
14 **MR. KHAN:** It is quite similar --
15 **THE COURT:** Okay.
16 **MR. KHAN:** -- in the overall layout.
17 So, Your Honor, this is the overall layout of
18 the system. And what's happening is there's a viewing
19 zone here on the flow cell. The composite microscope
20 objective surrounds it.
21 And what does the specification tell us?
22 Can we go to 83?
23 The specification tells us, and I am quoting
24 here, "The composite microscope objective further
25 includes a concave mirror configured to gather light

1 from -- scattered from or fluoresced by the illuminated
2 particle."
3 That is exactly the whole point of the
4 objective is to find the light, to collect the light,
5 including the scattered light. The specification
6 directly tells you that --
7 **THE COURT:** It actually doesn't. I'm sorry.
8 You know what? I mean, I'm not definitely saying you're
9 wrong.
10 **MR. KHAN:** Right.
11 **THE COURT:** Why did you use the word "detect"?
12 I just, I'm trying to figure out why you decided to use
13 "detect." Especially when, do you dispute 408 and 413
14 are detectors?
15 **MR. KHAN:** We don't dispute that they're
16 detectors, Your Honor, but I haven't --
17 **THE COURT:** I mean, isn't that a problem for
18 you?
19 **MR. KHAN:** Well --
20 **THE COURT:** Do they detect scattered light?
21 **MR. KHAN:** They are part of -- they are
22 forward scatter -- they are different components in the
23 system.
24 So if we can go back to the Elmo.
25 So here is 408. So exactly, Judge, as you

1 said, they're sort of an optional component in the
2 system that's basically --
3 **THE COURT:** What are you reading from, what
4 column?
5 **MR. KHAN:** I'm reading from Column 52.
6 **THE COURT:** Which patent are you on?
7 **MR. KHAN:** On the '582 patent.
8 **THE COURT:** All right. And you are on
9 Column 52?
10 **MR. KHAN:** Fifty-two.
11 **THE COURT:** Okay.
12 **MR. KHAN:** And just to discuss Figure 37,
13 which is, I think, what most of what they've been
14 pointing to. And the elements are 408 and --
15 **THE COURT:** Yeah, by the way, before you go
16 further, what's 45? I could not find 45 in the patent
17 anywhere. It says 45, right?
18 **MR. KHAN:** This is exactly what Figure 37 is,
19 what they have been pointing to.
20 **THE COURT:** Well, wait. So go look at...
21 You help me out. I don't see a 45 in
22 Figure 37. My clerk and I were, like, knocking our
23 heads.
24 **MR. KHAN:** Oh. I think it's just described as
25 including 408 and the other components.

1 **THE COURT:** Well, can you show me? We
2 couldn't find it.
3 **MR. KHAN:** Yeah.
4 **THE COURT:** Just go to Figure 37.
5 (Speaking simultaneously.)
6 **THE COURT:** I don't see a 45.
7 **MR. KHAN:** Yeah. I think you might be right,
8 Your Honor. There may not be --
9 **THE COURT:** How much do you guys pay your
10 patent examiners? I mean, you know...
11 **MR. KHAN:** I think you're right. You're
12 right, Your Honor.
13 **THE COURT:** So 45 doesn't mean anything even
14 though you referred to it a bunch of times?
15 **MR. KHAN:** Well, it's described insofar as it
16 needs a number, and so then it's used throughout to talk
17 about. But it's -- basically, Your Honor, it's an axial
18 loss detention system.
19 **THE COURT:** Right.
20 **MR. KHAN:** So it's separate from the gathering
21 of the scattered light that the composite microscope
22 objective.
23 It's not core to the -- to what's going on in
24 the patent, essentially. It's an optional system. In
25 fact, it's even described as "in accordance with some

1 embodiments of the --

2 **THE COURT:** Well, when you say it's optional,

3 maybe it's what's being claimed in Claim 13, I mean, for

4 all I know.

5 **MR. KHAN:** I think, Your Honor -- if we can go

6 back to the slide.

7 To me, Your Honor, it does just come down to

8 the word "detect." And I think if detection requires

9 conversion into a signal, it's true that the objective

10 doesn't do that.

11 But I don't think that's what detect means.

12 And indefiniteness is a really high bar.

13 **THE COURT:** Hold on. Hold on.

14 But you've got an actual disclosure in the

15 patent that you've just pointed to, which it actually

16 defines as a, quote, "axial light loss detection

17 system."

18 **MR. KHAN:** Yes, Your Honor.

19 **THE COURT:** You would think that light loss

20 might cover scattered light. Seems pretty reasonable to

21 infer, right?

22 **MR. KHAN:** No doubt, Your Honor.

23 **THE COURT:** Okay. So no doubt. That's good.

24 Then it says, so if you want to see a diagram

25 of that, that system, look at Page 37 and it's labeled

1 45.
2 I look at 37, I don't see anything.
3 But I'm guessing because Figure 37 is, in
4 fact, the axial light loss detection system that's being
5 discussed.
6 **MR. KHAN:** I believe it is, Your Honor.
7 **THE COURT:** Okay. And that apparently is in
8 accordance with some embodiments in the present
9 disclosure, right?
10 **MR. KHAN:** Yes.
11 **THE COURT:** Okay. Now, why isn't that what's
12 claimed in Claim 13 of the '443 patent?
13 **MR. KHAN:** Your Honor, that's because it's an
14 optical -- it needs to be an optical element.
15 **THE COURT:** Yeah. But, I mean, you said that
16 an optical element can include a concave mirror, right,
17 or lens, right?
18 I mean, can't an optical element include...
19 I mean, what doesn't it include? I mean,
20 what precludes it from including 408 and 412 in
21 Figure 37?
22 **MR. KHAN:** Because it's the element that's
23 core and responsible for gathering light in the first
24 instance. Gathering the scattered light --
25 **THE COURT:** No, it's detecting the scattered

1 light. It didn't say gathering, it says detecting it.
2 **MR. KHAN:** In the claim, yes, Your Honor,
3 right.
4 **THE COURT:** Yeah. But that's what I've got to
5 go by is what's in the claim.
6 All right. Defendant, are you good with the
7 corresponding structure? What do you think the
8 corresponding structure should be?
9 **MR. CHEN:** Our position, Your Honor, is that
10 it should be indefinite.
11 **THE COURT:** Yeah.
12 **MR. CHEN:** But if it's not indefinite, then
13 the corresponding structure has to be the specific 408
14 and 413 detectors disclosed in the specification for
15 detecting scattered light.
16 **THE COURT:** Yeah. All right. Hold on one
17 second.
18 **MR. KHAN:** Your Honor -- go ahead.
19 **THE COURT:** Hold on a second.
20 Go ahead, Mr. Khan.
21 **MR. KHAN:** Your Honor, it just can't be those
22 detectors. And I'm going to show you why. And here it
23 is.
24 Here's Claim 18, one of the claims that
25 they're seeking to construe, right. And one or more

1 optical fibers. Each optical fiber configured to
2 receive light from the optical element.
3 So the optical element is providing the light
4 to the fiber. If --
5 **THE COURT:** Well, time out. Time out.
6 So I'm construing Claim 13 right now, optical
7 element.
8 **MR. KHAN:** This is one of the terms that --
9 it's 13, 17, and 18.
10 **THE COURT:** No, time out.
11 Right. But I actually think we have to go
12 claim by claim. And I thought you even said that. You
13 said if I'm going to go means-plus-function, then we
14 have to go claim by claim. I actually agree with you.
15 **MR. KHAN:** I misunderstood.
16 **THE COURT:** I'm on Claim 13.
17 **MR. KHAN:** I see. I misunderstood, Your
18 Honor.
19 So I thought we were talking about 13, 17,
20 and 18 as a group. But --
21 **THE COURT:** I don't think so. I mean, I think
22 the whole point is, I think optical element is a nonce
23 word. I mean, well, element is.
24 And I think, that's why, precisely, I think
25 it's really a functional claim. They are all functional

1 claims, and I'm on Claim 13. And so I'm looking at the
2 corresponding structure to Claim 13.
3 I mean, maybe you don't dispute it. I mean,
4 it makes sense to me that it's 408 and it's 413 is the
5 corresponding structure to Claim 13.
6 Do you dispute that?
7 **MR. KHAN:** We do, Your Honor.
8 **THE COURT:** Okay. Well, then, I need to take
9 a little bit of a time out, and I will come back.
10 **MR. KHAN:** Okay.
11 **THE COURT:** But I am only, right now, looking
12 at Claim 13. And I am going to take like five minutes,
13 that's it, and then we're going to have to end pretty
14 soon and we're just not going to finish today. We'll
15 talk about what to do about that. All right.
16 (Whereupon, a recess was taken.)
17 **THE COURT:** Have a seat.
18 All right. So for Claim 13, I studied the
19 language. I think the only possible corresponding
20 structure for Claim 13 would be 408 and 413.
21 Did I get the numbers, right? Just to make
22 sure. Yes. Okay.
23 I have not been persuaded by the plaintiff
24 that collecting or gathering constitutes detection, but
25 the patent, the claims, distinguish... the claims, and

1 especially if you look at Claim 1, I think it's
2 undisputed that 408, 413, and the WDM detect. And so
3 that's the only possible corresponding structure I can
4 see with 413. Sorry, with Claim 13.
5 Okay. Now, the problem becomes, as I look at
6 the other claims, I can't even come up with a structure.
7 But, again, especially, you know, I'll give you a chance
8 to just brief that question only, the corresponding
9 structure on the remaining claims that claim an optical
10 element.
11 And I've got to say, from studying the
12 claims, I'm inclined to conclude there is no
13 corresponding structure that I see.
14 All right. Now, folks probably know, I
15 normally start my *Markman* hearings at 9:00 for a reason,
16 not 1:00, so we didn't finish.
17 Now, first of all, does my optical element
18 ruling that it's means-plus-function, how does that
19 affect some of the other disputed claim terms?
20 **MR. KHAN:** Your Honor, on the other disputed
21 claim terms, so we're just going to have to take it claim
22 by claim --
23 **THE COURT:** We are.
24 **MR. KHAN:** -- to figure out what the
25 corresponding structure is going to be, just as, Judge,

1 you suggested.
2 **THE COURT:** Okay. All right. And then, so
3 let's talk about what's the best way to proceed, given
4 this.
5 Where are you in terms of the case, Mr. Chen?
6 **MR. CHEN:** Your Honor, I don't think the rest
7 of the case schedule is going to be feasible given what
8 we have coming up.
9 So we are supposed to have a narrowing of
10 claims 21 days after a *Markman* order. We've got close
11 of fact discovery October 8. That's coming up quickly.
12 Expert reports are supposed to be November 5, and then
13 trial is August of 2026, Your Honor, so --
14 **THE COURT:** Well, that should not have to
15 move.
16 **MR. CHEN:** Yeah.
17 **THE COURT:** Now, hold on. Let's look at the
18 calendar.
19 You all can sit. Thank you, though.
20 All right. What about September 17, can we
21 pick up then, and then hopefully dispense with
22 everything else?
23 **MR. CHEN:** You mean for the claim
24 construction?
25 **THE COURT:** To finish this hearing, yep. And

1 you can brief this stuff beforehand, and I can have the
2 benefit of looking at what you wrote.
3 **MR. CHEN:** I'm supposed to take my parents,
4 who are in their late 70s, to Hawaii, Your Honor.
5 **THE COURT:** Oh, okay. Well, that's a good
6 thing. We don't do that. Won't risk all that.
7 Where are you from?
8 **MR. CHEN:** California. And I've got a jury
9 trial coming up between September 5th and the 11th here
10 in Delaware, Your Honor, before Judge Hall, the Netgear
11 case.
12 **THE COURT:** Where are you from, Mr. Khan?
13 **MR. KHAN:** New York, Your Honor.
14 **THE COURT:** All right. When are you taking
15 them to Hawaii? I mean, when do you get back?
16 **MR. CHEN:** It would be the -- it's a short
17 trip. It's the 7th -- oh, actually, I'm sorry, Your
18 Honor. The 17th. The 17th would work, Your Honor. I'm
19 taking them the following week, the 24th. The 17th would
20 work.
21 **THE COURT:** Just think about that, you'll have
22 that off your shoulders. It'll be incredible.
23 Which island are you going to?
24 **MR. CHEN:** We're going to go to the big
25 island.

1 **THE COURT:** All right. All right. Mr. Khan,
2 can you do the 17th?
3 **MR. KHAN:** Yes, Your Honor, that will work.
4 **THE COURT:** All right. Let's do the 17th,
5 9:00 a.m.
6 Okay. Now, the briefing, I'll leave it up to
7 you. You know, I think the sooner, the better. I could
8 have more time to look at it.
9 But remember, you can have experts at these
10 hearings, and I sometimes wonder why folks don't.
11 But nobody's stopping you from having experts
12 if you thought it was important. And what I would say
13 about that is, especially have them ready, so that if I
14 all of the sudden say, gee, I really could benefit from
15 an expert, you know, it's there.
16 So I'm not saying you need to bring your
17 experts, but I'm just saying if you thought it was
18 advantageous to do it, it's up to you.
19 Actually, we haven't had any depositions,
20 though, of experts, right?
21 **MR. CHEN:** We have not.
22 **MR. KHAN:** Correct, Your Honor.
23 **THE COURT:** Okay. But, and as I say, I'm not
24 saying I need any experts, right? But okay. Then we'll
25 continue on the 9th, but I've already ruled about

1 "optical element" is means-plus-function.
2 Corresponding structure for Claim 13 is to be
3 found in Figures 408 and 413.
4 If anybody can find what happened to
5 Number 45, let me know, in Figure 37.
6 Yes?
7 **MR. KHAN:** One clarification, Your Honor. I
8 think the 408 or -- it would be 408 or 413? Because it
9 would be alternative structures, each of them reciting a
10 curved mirror or optical element that would perform a
11 detection function, but I don't know if that's the way
12 the Court...
13 (Reporter clarification.)
14 **THE COURT:** Hold on.
15 **MR. KHAN:** I didn't understand -- I just
16 wanted to clarify how, Judge, you were ruling on that.
17 **THE COURT:** That's a good question.
18 **MR. CHEN:** Your Honor, one of them performs
19 forward scatter detection, the other one performs side
20 scatter detection.
21 **THE COURT:** And those, I think it's undisputed
22 that they're the only two types of detection that exist,
23 right?
24 **MR. CHEN:** For scattered light --
25 **THE COURT:** For scattered light that --

1 **MR. KHAN:** Right. But, Your Honor, the claim
2 just says detects scattered light. It doesn't say
3 forward or side.
4 And so I think the correct way to think about
5 408 or -- would be to be either 408 or 413, because both
6 of them in the axial loss system are described as
7 detecting scattered light. So it could be one or both.
8 It doesn't have to be both.
9 **THE COURT:** Oh, I see.
10 Yeah, well, actually...
11 **MR. KHAN:** It could be either one is kind of
12 what I'm saying.
13 **THE COURT:** What do you think?
14 **MR. CHEN:** I think it has to be both. The
15 embodiment talks about both. It collects both, forward
16 scattered light and side scattered light.
17 **MR. KHAN:** They're both scattered light. And
18 one is detecting --
19 **THE COURT:** All right. You know what? I'll
20 tell you what, we can address that September 17th.
21 **MR. KHAN:** Okay.
22 **THE COURT:** So, I mean, what I would say is
23 this. What I'm going to go back to decide that is I am
24 going to look at the patent, and if the patent discloses
25 a system that has both of them, it's got to be both.

1 But I'll look at the law too. You know,
2 that's what I'm saying.
3 So you can brief that. You've got
4 supplemental briefing. If you want to...
5 I told you to discuss the corresponding
6 structure, so if you want, you can discuss, only with
7 respect to Claim 13, whether it's one or both. That's
8 it. Nothing else. It's going to be one or both.
9 **MR. CHEN:** Understood, Your Honor.
10 **THE COURT:** It's going to be...
11 **MR. CHEN:** Either or both.
12 **THE COURT:** It's going to be either or both.
13 **MR. KHAN:** Yes.
14 **THE COURT:** Thank you.
15 **MR. CHEN:** Understood, Your Honor. Thank you.
16 **MR. KHAN:** And on the briefing, Your Honor,
17 given that these are their terms, we think we should have
18 the opportunity to respond.
19 Would it make sense to have them go first,
20 and then us to respond, and we can make a joint
21 submission to you together?
22 **THE COURT:** No.
23 **MR. KHAN:** Okay.
24 **THE COURT:** I want simultaneous. Then you've
25 really got to decide what you're going to do. So pick a

1 date. You want to pick it now, let's pick a date, and
2 we'll pick a time.
3 By the way, I mean, I think one thing for...
4 Like is Claim 13 no longer indefinite because
5 now that there is structure?
6 **MR. CHEN:** I think it's indefinite, Your
7 Honor.
8 **THE COURT:** Oh, you still think it's
9 indefinite?
10 **MR. CHEN:** That is our position is that we
11 think it's indefinite, Your Honor. Can we brief that
12 further?
13 **THE COURT:** Well, no, but what I wanted to
14 talk...
15 **MR. CHEN:** Because it's not an optical
16 element. A detector is not an optical element.
17 **MR. KHAN:** I think, Your Honor, the basis for
18 their argument that it was those detectors was that they
19 had optical elements in them, they had mirrors and things
20 like that, and so I think it wouldn't be indefinite,
21 but --
22 **THE COURT:** I mean, my question would be is,
23 on whether it's indefinite is who cares what it's called?
24 If it's a nonce word, and it's means-plus-functioning,
25 means-plus-function claiming, they could have called it a

1 zebra. I mean, they could have said it's a zebra
2 configured to do this and this, and you seem to be okay
3 with now that the functions are undisputed, and I agreed
4 with you that if I'm interpreting it this way,
5 means-plus-function, it's detection and the only
6 structure that corresponds is 408 and/or 413, that part,
7 and/or, to be decided.
8 I'm like why isn't it indefinite anymore?
9 Now, the other claims, you might be right.
10 **MR. CHEN:** Because one of ordinary skill in
11 the art looking at the term "optical element" wouldn't
12 understand that that can perform the function of
13 detecting --
14 **THE COURT:** I thought that's the whole part --
15 **MR. CHEN:** -- and that's -- that's the
16 confusion.
17 **THE COURT:** I thought the whole point of
18 functional claiming is that that they're allowed to claim
19 functionally, and I think, like, it seems to me, at that
20 stage, for you to prove it indefinite, assuming there's a
21 corresponding structure, you'd have to say it's
22 impossible.
23 See, I mean, it seems to me that if you want
24 to say that a means-plus-function claim is indefinite,
25 you've got to do it on the absence of a structure.

1 **MR. CHEN:** I understand what you are saying,
2 Your Honor.
3 **THE COURT:** You think about it, but I don't
4 know how you could pursue an indefiniteness claim if I'm
5 going to construe this means-plus-functioning and limit
6 the function to the 408 and 413.
7 **MR. CHEN:** For that particular element.
8 There's other elements with different functions --
9 **THE COURT:** That's a different story. In
10 fact, like I said, I actually have already volunteered,
11 I'm looking at them, and I'm thinking I don't know how
12 there's any corresponding structure to some of these
13 other ones.
14 **MR. CHEN:** Right. Understood.
15 **THE COURT:** So that's where it's fair, I
16 think, for you to say indefiniteness could still be
17 pursued.
18 **MR. CHEN:** Understood.
19 On the briefing, Your Honor.
20 **THE COURT:** Yeah, dates.
21 **MR. CHEN:** The dates. And then also you had
22 mentioned early summary judgment briefing on the issue of
23 indefiniteness --
24 **THE COURT:** Well, I think we should wait and
25 see what happens with these --

1 **MR. CHEN:** Okay.
2 **THE COURT:** -- with these claims. I mean,
3 pretty much, I think what's going to happen at this
4 hearing on September 17 is for the remaining claims for
5 "optical element," if we don't come up with a structure
6 that's corresponding, don't I then say it's indefinite?
7 **MR. CHEN:** Yes.
8 **THE COURT:** Isn't that what happens?
9 **MR. KHAN:** We think there is going to be a
10 corresponding structure.
11 **THE COURT:** I know you do. But, I mean --
12 **MR. KHAN:** Right.
13 **THE COURT:** -- in fairness, if I don't, if I
14 say I don't see that there's a corresponding structure
15 here, then I think we're on to indefiniteness. I mean, I
16 think it is indefinite at that point, right?
17 **MR. KHAN:** If there's no corresponding
18 structure to the means-plus-function term.
19 **THE COURT:** It's indefinite.
20 **MR. CHEN:** It is.
21 **THE COURT:** Okay. Good. We agree on that.
22 All right. So briefing, when do you want?
23 **MR. CHEN:** The 10th, Your Honor.
24 **THE COURT:** The 10th of what?
25 **MR. CHEN:** September. It's a week before.

1 **THE COURT:** Yeah. Does that work for you?
2 **MR. KHAN:** Yes, Your Honor. That works fine.
3 **THE COURT:** Okay. All right. Get it in.
4 **MR. CHEN:** Page limit, Your Honor?
5 **THE COURT:** Yeah, I mean, look, Ms. Upton
6 clerked for me. She'll tell you, if it's long, you know.
7 Look at the way I write my opinions. If you've got to
8 say so much, it's kind of shame on you. And you lose
9 stuff. I lost stuff with this briefing, in fairness. I
10 mean it's a good briefing, actually, but, I mean, I lost
11 stuff. I lost your...
12 You know, I was on Page 56 because I am
13 looking at 70. You repeat yourself a lot, it's
14 whatever. Short is better. So, I mean, the great
15 briefers are short briefers.
16 So I can set a limit if you want. What do
17 you think?
18 **MR. CHEN:** We'll be reasonable. Thank you,
19 Your Honor.
20 **MR. KHAN:** Yeah, we can work that out, Your
21 Honor.
22 **THE COURT:** Work it out.
23 **MR. KHAN:** Yes.
24 **THE COURT:** You're better off being short
25 because, I mean, you are going to hurt yourself if you're

1 not.

2 **MR. CHEN:** Understood.

3 **MR. KHAN:** Understood.

4 **THE COURT:** Okay. All right. Anything else?

5 **MR. CHEN:** We'll figure out the other dates.

6 September 17, Your Honor, just because there's the

7 October 8 fact discovery deadline and expert reports.

8 **THE COURT:** Right. By the way, is the claim

9 narrow destruction...

10 Destruction? Freudian slip that was very

11 worthwhile.

12 Is that moot? Do I have to resolve the

13 objections to Judge Tennyson's report?

14 **MR. CHEN:** It's moot.

15 **MR. KHAN:** Your Honor, I think --

16 **THE COURT:** We've got the claim narrow anyway.

17 As soon as I'm done, you know...

18 **MR. KHAN:** I think now it's moot.

19 **THE COURT:** Okay.

20 **MR. KHAN:** So I think you can -- Your Honor,

21 you don't have to rule on that.

22 **THE COURT:** Okay. Good. I'll enter an order

23 tomorrow saying, hearing from the parties, denied as

24 moot.

25 **MR. KHAN:** So, Your Honor, just to be clear on

1 what the briefing is supposed to cover --
2 **THE COURT:** Yeah, that's good. That's fine.
3 Let's be really clear. Go ahead.
4 **MR. KHAN:** So for Claim 13 of the '443 patent,
5 whether it's either or both --
6 **THE COURT:** Yep.
7 **MR. KHAN:** -- 408 and 413.
8 **THE COURT:** Yep.
9 **MR. KHAN:** And then for the other optical
10 element terms.
11 **THE COURT:** Yep.
12 **MR. KHAN:** And each claim, optical element,
13 collimating optical element, collecting optical element,
14 focusing optical element.
15 **THE COURT:** You need to identify corresponding
16 structure.
17 **MR. KHAN:** Corresponding structure.
18 **THE COURT:** Right. I think that's right.
19 I mean, is there anything...
20 And the reason why, to the extent you've
21 already done that in the briefing, I think you need
22 to... I'm giving you the opportunity to rethink. You
23 know now which way I've ruled. I mean, I've said it's
24 means-plus-function. So, you know...
25 In other words, are there any, were there any

1 other terms that you thought should be
2 means-plus-function that would not be encompassed by
3 optical element?
4 **MR. CHEN:** No, Your Honor.
5 **THE COURT:** Okay. All right. And then
6 collimating, that's plain and ordinary. I've construed
7 that.
8 And what else was there?
9 **MR. CHEN:** First and second.
10 **THE COURT:** Oh, first and second. Oh, so
11 first and second, I've construed that with regard to
12 filters, but then if there's follow-up, you want to
13 address that?
14 **MR. CHEN:** Yes, we do.
15 **THE COURT:** Okay. So then that's what they're
16 saying is --
17 **MR. KHAN:** That's what I was trying to clarify
18 is making sure that we understood that there was going to
19 be clarification on that.
20 **THE COURT:** Yep. First and second, you just
21 need to address the particulars elements.
22 **MR. KHAN:** Other than the filters.
23 **THE COURT:** Right. That should be really,
24 really short.
25 **MR. CHEN:** Understood, Your Honor.

1 **THE COURT:** Okay. Anything else?

2 **MR. CHEN:** No, Your Honor. Thank you.

3 **MR. KHAN:** That's it. Thank you.

4 **THE COURT:** Okay. Thanks, all.

5 (The proceedings concluded at 5:21 p.m.)

6

7

8 CERTIFICATE OF COURT REPORTER

9

10 I hereby certify that the foregoing is a true and

11 accurate transcript from my stenographic notes in the

12 proceeding.

13

14 /s/ Bonnie R. Archer
Bonnie R. Archer, RPR, FCRR
Official Court Reporter
15 U.S. District Court

16

17

18

19

20

21

22

23

24

25

[596]
MR. CHEN: [191] 3/10 18/13 18/19 19/2 19/6 19/8 21/20 21/23 22/4 22/10 22/14 22/17 22/23 23/2 23/5 23/8 23/11 23/16 23/19 23/24 24/2 24/6 24/10 24/17 24/20 24/23 24/25 25/7 32/4 32/16 33/1 33/7 33/9 33/13 33/17 33/20 34/1 34/11 34/22 34/25 35/6 36/1 36/4 36/8 36/13 36/17 36/20 36/22 37/18 37/22 38/2 38/4 38/11 38/14 44/21 45/2 45/7 45/9 45/11 45/20 45/25 46/3 46/10 46/15 46/20 46/24 47/1 47/3 47/11 48/3 48/7 48/10 48/12 48/14 48/16 49/8 49/15 49/20 50/3 50/19 50/24 51/5 51/11 51/14 51/17 52/3 52/7 52/21 52/23 53/2 53/5 53/13 53/16 53/19 54/14 54/20 54/23 55/7 55/11 64/11 64/18 64/25 65/3 65/8 65/17 65/23 66/4 67/23 68/12 68/15 68/20 68/22 68/25 69/11 69/18 69/21 69/24 70/2 70/5 70/8 70/10 70/18 70/22 75/17 147/22 147/25 148/3 148/20 149/5 149/25 164/24 165/21 165/24 166/7 166/10 166/14 166/19 166/23 167/6 167/9 167/12 167/15 167/20 167/24 168/3 168/14 168/19 168/25 169/14 169/23 176/9 176/12 180/6 180/16 180/23 181/3 181/8 181/16 181/24 182/21 183/18 183/24 184/14 185/9 185/11 185/15 186/6 186/10 186/15 187/10 187/15 188/1 188/7 188/14 188/18 188/21 189/1 189/7 189/20 189/23 189/25 190/4 190/18 191/2 191/5 191/14 193/4 193/9 193/14 193/25 194/2
MR. DENNHARDT: [58] 76/4 77/3 77/8 77/10 78/2 80/21 80/24 81/3 81/7 81/10 81/13 81/20 82/1 82/9 82/18 82/22 83/24 84/12 84/19 84/22 99/16 102/1 102/5 107/11 107/23 108/4 108/7 108/9 108/14 109/1 109/9 109/14 109/25 110/6 110/9 110/14 111/2 111/14 111/18 111/22 112/1 112/11 125/7 125/15 125/21 125/23 125/25 126/7 126/10 126/17 128/13 129/7 130/12 131/7 131/15 131/25 132/17 133/10
MR. KHAN: [303]
MR. PIVOVAR: [86] 85/1 85/3 85/10 85/14 85/16 86/2 91/7 93/20 94/4 94/7 94/10 94/15 94/25 95/2 95/8 95/15 95/25 96/6 96/13 96/21 97/9 97/17 97/21 98/7 98/10 98/15 98/18 99/20 99/25 100/16 101/23 102/9 102/20 102/24 103/8 103/10 103/15 104/1 104/6 106/1 106/13 106/18 106/23 107/6 113/3 113/7 113/14 114/13 114/18 115/3 115/7 115/11 115/14 115/23 116/1 116/12 116/15 117/3 118/9 118/19 118/24 119/4 119/7 119/16 119/19 120/12 120/20 122/10 122/15 122/23 123/5 123/8 123/13 123/18 123/23 124/21 125/1 126/19 126/21 127/14 127/21 127/25 128/4 128/17 128/25 129/4
MS. FLANIGAN: [1] 19/4
MS. HAYNES: [1] 2/24
MS. JACOBS: [2] 3/7 3/11
THE COURT: [630]
THE REPORTER: [2] 117/2 144/21

'

'076 [1] 103/5
'106 [5] 49/16 122/25 123/1 123/19 123/21
'107 [1] 123/20
'412 [7] 27/11 27/19 47/18 66/12 89/9 91/8 128/5
'443 [8] 36/17 63/20 137/21 143/18 153/9 169/2 175/12 192/4
'532 [2] 153/12 153/13
'582 [19] 8/8 8/15 10/21 11/9 11/12 13/17 33/9 33/16 33/17 35/18 66/8 66/21 78/10 86/6 102/17 153/14 153/15 170/11 172/7
'substantially [1] 133/6

-

-- 408 [1] 192/7
-- from [1] 57/6
-- in [1] 170/16
-- to [1] 179/24
-and [2] 1/21 2/10

/

/s [1] 194/13

1

1 [18] 39/3 49/15 66/7 66/21 159/10 163/1 166/13 166/14 166/17 167/17 168/2 168/17 168/23 170/4 170/6 170/8 170/9 179/1
10 [9] 36/17 39/2 39/4 40/17 40/17 41/19 42/6 45/4 85/21
100 [3] 67/3 67/14 83/7
101 [1] 53/2
10th [2] 189/23 189/24
11th [1] 181/9
12 [1] 164/2
12:58 [2] 1/10 2/22
13 [24] 137/21 141/18 143/18 153/5 153/8 153/9 156/9 174/3 175/12 177/6 177/9 177/16 177/19 178/1 178/2 178/5 178/12 178/18 178/20 179/4 183/2 185/7 186/4 192/4
1300s [1] 72/18
1313 [1] 72/15
1372 [1] 72/18
14 [6] 38/21 43/4 48/16 50/2 51/9 54/18
15 [1] 48/14
16 [3] 36/20 38/11 78/11
17 [8] 28/9 28/10 143/18 177/9 177/19 180/20 189/4 191/6
17th [6] 181/18 181/18 181/19 182/2 182/4 184/20
17th would [2] 181/18 181/19
18 [6] 28/12 143/18 169/1 176/24 177/9 177/20
19 [1] 28/19
1965 [1] 20/5
1990s [1] 20/7
1:00 [1] 179/16

2

2 [3] 122/13 134/17 134/18
20 [2] 28/23 63/19
2000s [1] 20/7
2017 [3] 27/12 27/15 27/15
2024 [1] 122/13
2025 [3] 1/10 38/21 43/4
2026 [1] 180/13
21 [2] 1/10 180/10
24 [3] 1/4 29/18 50/3
24-945-CFC [1] 1/4
24th [1] 181/19
25 [51] 9/7 9/23 11/19 14/19 14/21 15/3 15/14 15/20 15/21 16/9 16/13 25/15 30/5 30/14 30/24 30/25 34/10 35/23 37/11 45/24 46/19 47/7 47/19 48/1 48/5 50/13 52/20 54/13 54/19 55/5 55/8 56/14 58/2 58/20 60/8 64/24 65/8 66/6 66/7 66/13 66/15 66/22 68/4 68/17 69/5 73/5 73/17 74/7 78/14 156/10 156/10
26 [3] 30/20 58/21 134/17
27 [1] 31/8
28 [2] 86/7 164/1
29 [4] 27/12 86/7 100/10 134/17
2A [1] 103/5

3

3 [1] 4/1
30 [3] 117/6 120/2 120/15
31 [18] 25/11 67/7 117/22 117/22 118/14 120/3 121/6 166/15 166/16 166/24 167/5 167/5 167/6 167/7 167/19 167/20 168/2 170/13
32 [1] 76/19
34 [3] 103/5 103/12 103/13
350 [1] 72/17
37 [9] 172/12 172/18 172/22 173/4 174/25 175/2 175/3 175/21 183/5
38 [3] 21/6 166/24 167/21
3:30 [1] 103/20
3M [2] 28/19 72/16

4

4 [4] 68/20 68/22 120/15 120/17
406 [2] 21/9 23/21
408 [28] 21/9 21/10 23/20 23/21 23/22 149/8 150/2 165/15 167/1 167/13 169/20 171/13 171/25 172/14 172/25 175/20 176/13 178/4 178/20 179/2 183/3 183/8 183/8 184/5 184/5 187/6 188/6 192/7
409 [2] 21/6 22/2
412 [2] 167/22 175/20
413 [21] 21/15 23/24 24/8 25/4 149/8 150/2 165/15 167/3 169/20 171/13 176/14 178/4 178/20 179/2 179/4 183/3 183/8 184/5 187/6 188/6 192/7
413s [1] 24/9
414 [2] 25/2 149/2
415 [5] 24/12 24/15 24/25 72/15 149/1
44 [2] 86/19 127/17
45 [13] 57/1 78/11 78/12 149/21 150/6 172/16 172/16 172/17 172/21 173/6 173/13 175/1 183/5
49 [1] 103/3
4:46 [1] 118/3

5

5 [9] 49/15 59/9 59/10 67/8 67/9 150/13 151/8 153/11 180/12
50 [2] 57/1 150/6
501 [1] 20/24
503 [1] 20/25
51 [1] 56/25
52 [2] 172/5 172/9
53 [1] 165/17
54 [1] 165/18
56 [10] 147/14 150/15 150/16 150/17 150/21 151/1 151/5 151/8 152/5 190/12
57 [2] 68/20 68/22
5:21 [1] 194/5
5th [1] 181/9

6

6 [7] 33/10 33/17 35/18 35/21 36/11 81/14 120/4
60 [3] 21/1 21/2 148/25
601 [1] 25/11
602 [2] 25/11 53/6
62 [1] 150/13
63 [2] 118/3 165/18
65 [5] 86/19 150/13 150/17 151/8 152/5
67 [1] 86/20

7

7 [8] 68/20 68/22 85/20 98/23 98/24 106/3 116/20 120/2
70 [6] 147/13 148/7 151/1 151/6 151/6 190/13
703 [4] 29/22 51/9 52/2 52/5
70s [1] 181/4
71 [1] 147/13
7th [1] 181/17

8

8 [3] 164/4 180/11 191/7
83 [1] 170/22

8

844 [1] 1/13
852 [10] 25/13 156/15 156/17 156/22 163/17 163/17 164/8 164/10 164/13 164/16

9

9 [13] 39/3 41/6 41/7 41/9 41/10 43/21 62/16 62/16 62/19 62/19 63/19 85/20 164/4
90 [15] 22/6 22/8 22/10 22/11 156/12 156/12 156/13 156/21 156/22 156/23 163/13 163/17 163/18 164/1 164/5
90 degrees [3] 22/8 22/10 22/11
901 [1] 25/24
902 [6] 26/1 26/5 48/19 49/2 65/11 102/18
903 [4] 26/6 34/13 37/12 46/6
904 [1] 26/10
905 [3] 26/16 59/7 65/6
906 [2] 59/2 66/20
907 [7] 26/25 48/22 49/1 49/3 65/12 65/16 65/17
908 [8] 58/25 59/2 59/5 65/5 65/6 65/21 66/18 66/20
945 [1] 1/4
9:00 [2] 179/15 182/5
9:00 a.m [1] 182/5
9A [1] 73/7
9th [1] 182/25

A

a.m [1] 182/5
aberration [10] 25/1 25/10 53/6 54/5 54/8 67/2 67/10 67/14 145/8 149/2
aberrations [1] 79/1
ability [1] 77/17
able [7] 5/6 5/7 74/10 76/7 94/22 111/10 117/13
about [136] 3/21 3/23 4/4 6/6 14/8 14/11 16/6 16/14 16/17 23/3 25/2 27/18 27/23 29/15 30/8 32/14 32/25 33/21 35/14 37/11 40/1 40/5 40/8 44/3 44/5 47/9 49/14 50/4 50/5 50/6 50/7 50/10 50/11 50/12 50/14 51/19 52/15 52/17 52/23 52/25 53/5 53/7 53/24 53/25 54/2 55/23 56/14 56/20 58/1 58/4 59/13 63/17 63/18 64/2 65/10 65/12 65/19 70/16 75/12 78/13 78/25 79/25 80/1 80/4 80/13 81/22 82/3 82/16 82/19 83/3 87/12 88/2 88/7 93/11 94/24 98/14 100/21 101/4 102/11 103/20 103/24 108/10 112/3 113/3 113/4 113/6 115/4 115/15 116/20 118/17 119/6 120/22 121/18 125/8 126/1 126/25 130/13 130/15 131/4 132/24 133/15 135/4 135/8 136/7 136/24 138/24 139/11 140/18 140/21 143/13 145/15 145/18 145/19 146/23 148/25 149/9 151/2 152/17 153/2 153/4 159/25 160/3 163/24 168/18 173/17 177/19 178/15 178/15 180/3 180/20 181/21 182/13 182/25 184/4 184/15 188/3
absence [1] 187/25
absent [2] 10/24 11/16
absolute [3] 110/2 110/10 134/8
absolutely [7] 34/11 44/21 45/2 45/11 46/24 55/9 131/3
accept [1] 124/21
acceptable [5] 106/8 110/18 111/5 111/9 132/4
accepted [2] 110/24 135/12
accordance [2] 173/25 175/8
according [3] 12/15 37/9 43/3
accurate [2] 102/6 194/11
accurately [1] 19/19
accused [2] 27/13 27/14
achieve [3] 84/4 84/9 134/6
achieved [2] 82/14 82/20
achieving [1] 81/16
acknowledge [4] 55/21 55/22 78/22 79/16
acknowledging [1] 83/10
acknowledgment [3] 55/15 82/11 82/25
across [2] 42/14 74/25
acting [1] 139/13
Action [1] 122/14
active [2] 115/4 115/7
acts [1] 139/25
actual [2] 128/11 174/14
actually [66] 8/20 19/14 19/20 20/8 24/13 25/21 27/8 30/25 32/6 32/11 33/23 35/25 36/2 37/9 38/8 38/17 44/23 46/4 47/4 47/12 47/25 48/10 48/16 49/21 51/19 51/20 55/5 55/22 55/25 56/23 57/8 64/9 65/7 69/13 78/23 79/3 81/11 81/21 87/22 88/22 88/24 89/2 91/14 93/7 106/14 107/19 131/20 132/12 148/4 148/5 151/21 163/18 165/21 165/24 165/25 166/2 169/5 171/7 174/15 177/11 177/14 181/17 182/19 184/10 188/10 190/10
ADAM [2] 2/12 3/11
adapted [1] 20/17
add [2] 77/18 109/20
added [1] 123/20
additional [5] 27/9 31/15 45/13 71/7 77/22
address [16] 32/8 32/9 47/13 49/21 55/1 65/23 71/8 87/1 95/9 114/10 114/17 141/12 148/1 184/20 193/13 193/21
addressed [4] 37/22 71/17 114/20 120/20
addressing [1] 122/20
adjust [1] 128/22
admission [1] 90/15
admit [1] 38/20
admittedly [2] 91/8 126/13
admitting [2] 121/3 122/2
admonition [1] 75/4
adopt [1] 118/12
advanced [1] 6/8
advantageous [1] 182/18
affect [1] 179/19
affidavit [1] 142/22
afforded [1] 76/18
after [17] 26/4 33/3 34/3 45/13 46/23 74/23 77/19 98/7 98/11 103/2 117/12 122/11 123/6 123/24 130/16 133/17 180/10
afternoon [8] 2/23 2/24 3/7 3/10 18/20 30/8 73/2 76/4
again [29] 6/10 6/12 6/15 30/17 31/6 37/1 39/7 47/15 48/24 51/18 52/1 53/20 65/13 73/7 78/12 79/25 80/2 80/16 83/16 97/6 103/22 104/17 107/20 125/16 130/23 132/7 132/18 153/8 179/7
against [2] 100/7 143/11
agent [1] 4/22
agnostic [2] 46/1 46/12
ago [4] 37/10 111/9 130/18 133/19
agree [41] 7/8 13/25 15/4 25/17 33/1 34/16 34/19 35/1 44/2 44/4 44/25 46/15 47/7 51/24 52/14 58/17 60/1 61/4 71/6 72/23 73/12 73/24 83/20 87/9 91/22 91/23 104/22 108/24 113/15 126/14 128/18 128/23 131/14 137/12 146/1 149/25 163/18 165/2 165/19 177/14 189/21
agreed [9] 10/1 11/1 58/15 117/13 134/1 138/12 141/16 163/18 187/3
agreement [1] 113/23
agrees [2] 78/25 80/9
ahead [15] 16/11 18/22 33/6 34/21 35/5 36/15 49/13 52/19 63/12 70/9 78/1 170/2 176/18 176/20 192/3
albeit [4] 55/17 100/19 101/20 106/5
algorithms [1] 20/2
all [155] 3/5 3/12 4/23 6/2 10/16 16/7 16/11 18/10 21/25 22/2 22/4 25/17 27/2 27/25 28/6 28/8 29/3 29/11 31/18 32/4 33/5 33/8 34/19 36/11 38/8 39/22 43/16 44/11 51/4 55/10 55/12 55/25 56/9 56/17 57/23 58/22 59/25 62/4 63/9 64/10 66/23 70/20 71/2 71/20 74/17 75/3 75/7 75/9 75/10 75/13 81/1 81/12 82/23 84/17 84/21 85/4 88/6 88/9 90/3 90/8 91/9 91/16 93/9 93/12 93/17 93/18 95/3 97/10 98/1 98/4 98/20 99/4 99/12 100/11 100/19 101/18 101/19 102/8 102/9 102/25 104/1 105/15 106/4 106/25 107/1 107/6 107/9 107/12 109/18 112/22 112/23 114/3 114/16 116/24 121/2 121/7 121/8 122/4 123/22 123/23 124/2 125/3 126/19 127/1 130/7 130/13 133/8 133/11 133/20 134/6 135/17 137/2 140/10 140/12 141/5 143/1 147/17 147/18 148/21 149/14 149/23 150/17 151/7 156/12 159/13 163/12 163/15 164/12 166/4 169/22 169/24 172/8 174/4 176/6 176/16 177/25 178/15 178/18 179/14 179/17 180/2 180/19 180/20 181/6 181/14 182/1 182/1 182/4 182/14 184/19 189/22 190/3 191/4 193/5 194/4
allegation [2] 124/7 124/12
alleged [1] 168/6
allow [3] 51/6 125/6 132/6
allowed [4] 15/24 15/25 26/9 187/18
allowing [1] 110/23
allows [3] 26/6 145/9 152/2
almost [3] 103/20 143/4 152/25
along [1] 40/23
already [13] 11/1 17/20 45/22 64/9 73/2 103/20 117/12 120/6 138/5 138/11 182/25 188/10 192/21
also [30] 3/2 5/3 5/15 20/6 22/17 22/17 25/8 32/9 48/7 48/18 49/9 58/11 64/20 71/24 72/13 86/18 90/12 91/21 100/23 102/10 112/18 116/10 133/15 134/8 146/22 149/6 151/11 165/3 168/10 188/21
alternative [3] 99/11 111/7 183/9
although [1] 151/6
always [1] 140/19
am [21] 14/23 62/1 63/23 75/7 75/12 77/15 97/11 103/22 118/7 122/24 123/11 126/13 134/4 135/14 137/7 137/9 170/23 178/11 178/12 184/23 190/12
ambiguity [2] 92/10 92/21
ambiguous [1] 86/15
amend [1] 121/12
amount [10] 11/19 95/20 95/21 95/21 112/24 113/8 116/2 116/8 126/11 132/3
analogous [1] 52/2
analogue [4] 52/5

A

analogue... [3] 52/6 52/8 52/9
analogy [2] 52/15 83/2
analyze [5] 19/10 20/2 92/2 158/3 158/6
Andrews [1] 133/4
angle [8] 125/24 126/1 126/2 126/6 128/24 129/3 131/19 134/23
angles [1] 134/14
annotations [3] 25/15 25/17 25/19
announced [1] 72/9
another [12] 15/20 27/3 32/22 36/14 49/1 103/24 120/16 127/19 141/2 151/17 152/4 166/3
answer [4] 9/1 10/15 60/11 99/18
any [61] 7/6 7/16 15/10 15/11 29/23 37/5 37/8 37/8 39/16 40/20 41/9 41/10 49/5 59/18 60/7 61/16 62/20 64/7 67/18 74/12 75/1 84/7 91/2 92/22 103/19 106/25 109/17 110/4 110/5 110/6 110/11 112/4 112/9 114/21 114/22 114/24 114/24 118/21 121/9 124/16 125/4 125/10 129/19 131/23 132/3 132/4 135/1 139/23 141/6 141/20 141/20 142/5 143/4 154/9 169/15 169/19 182/19 182/24 188/12 192/25 192/25
anybody [1] 183/4
anyhow [1] 113/22
anymore [1] 187/8
anything [20] 24/18 24/19 45/8 47/7 55/10 70/20 89/6 110/3 121/9 125/14 139/22 141/6 141/11 147/4 169/22 173/13 175/2 191/4 192/19 194/1
anyway [6] 32/18 33/6 43/22 45/16 121/11 191/16
anywhere [3] 125/3 159/21 172/17
APDs [6] 5/5 5/7 5/13 6/2 6/9 6/21
apologies [3] 38/4 45/12 55/7
Apologize [1] 153/15
apparently [2] 150/22 175/7
appeal [1] 75/2
appear [2] 131/23 169/8
APPEARANCES [2] 1/18 2/1
appears [4] 72/13 74/6 156/22 169/9
applicable [1] 143/9
application [2] 33/3 115/15
applied [1] 59/25
apply [1] 91/13
approach [3] 19/4 33/23 132/5
appropriate [2] 133/1 136/5
Archer [2] 194/13 194/14
architecture [1] 5/13
are [222]
Aren't [1] 115/19
argue [3] 36/24 75/3 84/3
arguing [2] 9/23 93/22
argument [30] 29/14 29/15 33/13 35/18 39/2 39/14 42/7 42/24 44/16 47/14 47/16 49/23 50/13 51/8 51/19 54/4 65/24 66/2 66/9 66/11 66/15 74/10 77/16 85/23 117/7 120/25 146/6 147/21 151/5 186/18
arguments [5] 3/14 32/14 37/17 87/2 91/2
around [5] 6/17 84/3 86/7 97/10 105/13
arrangement [1] 30/15
ARSHT [1] 2/8
art [18] 4/14 4/21 15/17 72/2 72/5 72/11 89/13 89/14 89/24 92/18 100/18 101/12 116/23 129/19 136/3 144/16 144/16 187/11
article [1] 140/21
articulate [1] 56/24
as [143] 3/21 5/5 6/5 6/7 6/14 7/2 7/3 8/5 8/9 9/8 10/10 10/12 10/13 15/7 16/13 16/20 16/21 16/23 16/25 17/20 17/24 19/8 19/14 19/14 20/2 20/2 21/5 22/18 23/22 27/18 31/5 31/11 38/9 40/5 44/19 44/19 45/13 45/22 46/5 46/6 46/13 47/20 47/20 48/21 49/10 49/15 49/17 52/2 57/16 59/5 61/6 61/10 65/6 65/12 65/21 67/22 74/22 76/15 76/19 76/21 76/22 76/24 77/4 77/17 77/22 78/19 79/2 79/16 79/17 80/12 82/7 82/21 85/14 85/16 85/16 86/3 88/10 88/15 89/15 89/20 90/2 90/5 90/12 90/23 91/9 91/9 92/6 93/7 93/12 98/23 103/11 105/25 108/24 109/13 110/24 118/24 118/24 121/24 124/13 124/13 125/13 126/5 128/6 128/24 130/5 132/2 134/12 136/3 136/16 136/17 136/21 137/12 139/17 140/1 142/17 142/18 145/15 146/25 151/5 152/7 155/8 159/24 163/25 164/16 164/18 165/12 165/14 167/21 168/6 168/6 171/25 172/24 173/15 173/25 174/16 177/20 179/5 179/25 182/23 184/6 191/17 191/17 191/23
aside [3] 9/25 39/8 151/7
ask [7] 10/14 12/12 74/1 77/20 95/12 104/24 132/7
asked [8] 64/9 67/4 71/12 71/13 71/16 88/2 103/22 107/14
asking [2] 13/10 70/15
aspect [2] 59/18 115/7
aspects [4] 14/16 15/13 59/10 139/19
aspheric [1] 30/9
asserted [13] 20/10 27/19 74/3 89/10 100/7 122/20 122/25 123/2 123/3 123/15 123/16 123/19 128/15
assume [2] 126/1 126/3
assuming [1] 187/20
attached [1] 103/6
attorney [3] 32/19 39/8 120/24
attorneys [1] 77/17
August [3] 1/10 27/12 180/13
August 29 [1] 27/12
Avalanche [2] 5/5 6/9
avoid [1] 110/4
away [4] 88/20 89/1 93/17 104/15
axial [4] 173/17 174/16 175/4 184/6

B

bachelor's [1] 94/10
back [51] 6/2 6/10 6/20 22/18 24/13 24/22 36/10 40/13 42/9 44/7 44/9 48/1 51/2 57/11 57/23 61/22 61/24 67/14 70/24 74/2 74/14 75/9 77/24 81/7 86/3 87/22 96/21 103/13 105/5 105/6 109/12 111/3 113/5 117/10 117/12 120/5 123/14 124/4 132/18 138/5 143/2 144/7 149/1 155/15 158/22 170/4 171/24 174/6 178/9 181/15 184/23
background [1] 18/23
backing [1] 158/25
band [4] 26/9 26/12 51/6 51/7
band-pass [1] 26/12
bands [3] 20/1 26/25 27/2
bar [1] 174/12
based [9] 36/24 77/21 91/12 96/19 122/18 133/25 135/19 165/5 169/7
baseline [1] 72/6
basic [3] 3/23 28/17 43/23
basically [17] 15/2 19/12 26/13 46/1 63/15 64/6 69/3 83/23 96/24 105/15 139/10 139/14 142/18 157/8 158/10 172/2 173/17
basis [1] 186/17
battle [4] 132/2 132/6 132/13 135/16
battling [1] 96/16
be [244]
beam [85] 16/19 26/2 30/16 55/2 76/9 78/9 79/19 79/21 80/11 82/10 86/8 86/22 86/25 87/7 87/8 88/4 88/25 90/21 91/23 92/3 92/12 92/15 92/17 92/23 92/24 93/7 93/8 93/14 93/23 95/17 97/1 97/5 98/5 98/12 99/4 99/4 100/20 100/22 101/1 101/2 104/4 104/8 104/9 104/14 104/20 104/21 104/23 105/6 109/2 109/4 109/13 109/15 113/9 113/10 113/25 114/1 114/5 114/6 114/7 114/8 115/17 116/2 116/4 117/1 119/21 121/23 122/6 124/18 124/19 126/3 126/4 126/12 126/12 126/23 129/11 134/14 134/19 134/21 134/24 135/13 160/25 161/4 161/6 161/12 161/17
beams [7] 78/16 93/1 118/25 121/8 121/9 134/16 141/1
bearings [1] 34/8
bears [1] 88/1
BEC [2] 47/3 148/8
BEC's [4] 20/10 20/23 25/15 27/8
became [2] 5/16 10/11
because [92] 19/20 20/19 21/22 21/24 22/20 23/20 23/25 27/9 31/21 32/4 32/13 32/18 32/22 35/22 37/16 39/1 39/2 40/25 41/18 42/23 43/15 46/13 48/5 48/20 52/16 61/8 66/11 67/20 67/23 69/1 69/2 69/12 77/16 78/4 80/15 80/24 84/1 84/4 84/8 87/3 87/16 88/19 88/25 88/25 92/15 96/23 97/11 97/25 100/16 101/14 103/16 105/1 107/24 109/1 113/8 114/8 114/14 115/8 118/2 119/5 120/5 121/12 132/24 133/5 133/24 135/7 137/10 138/9 141/15 143/6 144/7 144/7 145/19 146/1 150/20 151/22 151/23 152/1 159/24 168/5 168/17 175/3 175/13 175/22 183/8 184/5 186/4 186/15 187/10 190/12 190/25 191/6
BECKMAN [10] 1/3 2/25 3/20 5/16 5/21 27/21 35/6 76/5 166/1 169/10
Beckman's [1] 58/21
become [1] 16/24
becomes [3] 90/25 90/25 179/5
been [8] 5/17 6/5 30/19 152/20 170/5 172/13 172/19 178/23
before [24] 1/15 40/10 42/11 42/13 44/20 67/18 73/22 73/22 83/5 84/23 97/11 112/20 116/21 121/2 123/7 123/21 134/1 142/1 150/16 151/13 160/23 172/15 181/10 189/25
beforehand [1] 181/1
begin [3] 3/17 18/22 72/6
beginning [3] 2/21 4/24 165/12
begs [1] 134/25
behalf [1] 2/25
behaves [2] 78/24 79/3
being [38] 5/6 5/6 6/21 9/7 16/13 23/21 23/21 26/22 31/7 35/12 35/14 37/12 47/22 47/22 48/22 64/2 65/12 65/21 66/18 69/6 87/2 91/24 100/7 109/24 121/14

B

being... [13] 121/15 122/16 138/10 142/17 143/7 145/15 145/16 151/14 159/25 164/17 174/3 175/4 190/24
belabor [1] 96/23
belied [1] 90/5
believe [19] 7/18 13/13 33/7 34/17 37/22 41/22 48/20 115/8 125/25 126/7 128/4 128/8 128/13 129/19 143/1 156/13 156/18 167/17 175/6
bends [1] 80/13
benefit [4] 85/25 151/4 181/2 182/14
besides [5] 49/6 60/8 141/21 143/9 147/4
best [4] 66/2 111/12 111/12 180/3
BETSY [2] 2/13 3/12
better [4] 37/17 182/7 190/14 190/24
between [14] 6/17 9/12 10/2 11/11 31/13 79/11 98/3 100/13 111/8 117/19 121/18 127/8 136/1 181/9
beyond [1] 126/3
big [6] 87/12 88/15 100/24 128/20 147/20 181/24
bigger [9] 89/21 90/17 90/23 90/23 90/24 101/1 116/8 127/4 151/3
biggest [1] 65/4
Bio's [1] 53/2
BIOSCIENCES [3] 1/6 3/8 18/21
bit [11] 3/23 22/11 83/12 83/15 87/21 88/1 89/12 90/11 120/22 148/25 178/9
blocking [1] 85/16
blue [1] 34/25
board [6] 85/19 98/23 100/1 105/7 108/11 116/20
boil [1] 135/10
boiling [1] 110/16
boils [2] 111/1 146/2
Bonnie [2] 194/13 194/14
book [3] 97/18 97/21 97/24
borrowed [1] 20/12
both [39] 18/17 19/14 21/4 21/6 23/17 23/17 46/2 48/1 50/22 50/23 67/21 73/5 73/8 76/14 78/10 79/5 91/22 91/23 115/1 115/2 129/25 133/21 134/1 165/13 167/25 184/5 184/7 184/8 184/14 184/15 184/15 184/17 184/25 184/25 185/7 185/8 185/11 185/12 192/5
bothers [1] 32/20
bottle [6] 83/3 83/3 83/4 83/8 83/9 84/18
bottom [7] 30/14 80/2 86/19 140/12 142/25 149/24 151/7
bounced [2] 24/21 24/22
bouncing [4] 6/17 25/1 57/11 57/12
box [3] 22/21 54/22 54/25
branch [40] 30/16 30/17 33/14 33/21 33/22 34/2 34/3 35/7 35/8 35/10 35/10 46/13 46/13 51/19 51/20 52/11 52/13 52/14 54/4 54/4 54/10 54/10 54/15 54/15 55/2 55/2 57/24 58/14 58/15 58/16 59/23 68/11 68/17 68/18 69/12 69/12 70/14 71/11 71/11 71/12
branches [12] 35/25 46/14 55/5 56/7 59/15 64/15 64/18 73/1 73/4 73/6 73/11 73/12
branching [1] 69/8
break [4] 43/23 70/23 70/24 71/5
brief [23] 18/22 37/21 37/23 38/7 44/17 48/17 60/22 91/2 93/18 103/6 103/11 120/19 142/6 147/10 148/8 148/9 148/14 150/15 150/21 179/8 181/1 185/3 186/11
briefed [1] 62/24
briefers [2] 190/15 190/15
briefing [29] 14/14 39/2 45/12 47/16 48/10 49/11 71/7 75/9 85/22 87/12 87/21 89/5 90/4 91/17 93/3 93/18 100/2 104/18 142/7 182/6 185/4 185/16 188/19 188/22 189/22 190/9 190/10 192/1 192/21
briefly [3] 87/1 87/1 87/16
bring [3] 89/7 116/17 182/16
bringing [1] 101/19
brings [4] 100/18 105/15 106/4 116/24
broad [1] 98/13
broader [2] 93/2 124/10
broker [1] 118/13
buildup [1] 145/9
bulky [2] 4/16 4/19
bunch [2] 13/16 173/14
button [1] 139/8

C

C [1] 2/19
C.A [1] 1/4
cable [4] 57/18 156/14 156/19 160/19
calendar [1] 180/18
calibrated [1] 97/10
California [1] 181/8
call [9] 34/6 35/10 35/24 68/1 69/11 94/2 94/14 123/10 155/7
called [8] 19/16 19/18 26/12 98/12 157/3 170/7 186/23 186/25
calling [1] 14/16
calls [1] 130/8
came [9] 32/23 33/2 87/21 87/23 117/10 117/12 120/12 122/11 133/24
can [154] 6/20 7/14 9/8 10/2 14/17 16/7 16/8 16/15 16/18 17/8 18/15 18/15 20/17 32/8 32/9 32/10 33/5 33/7 35/22 37/8 39/10 39/18 41/10 41/21 43/7 43/22 44/2 44/3 44/15 45/13 47/4 49/25 53/8 56/17 58/20 60/5 60/7 61/16 61/19 62/20 62/22 64/7 64/11 65/8 65/17 67/13 71/8 71/18 74/17 75/3 77/1 77/3 78/4 78/24 80/5 80/9 82/20 83/1 84/24 85/3 86/5 87/10 87/16 88/15 88/22 89/8 89/12 89/24 90/22 91/5 92/2 92/12 93/11 95/3 95/8 95/10 96/9 96/25 97/1 97/3 98/3 99/21 99/23 100/9 101/22 101/25 102/4 104/12 104/17 105/5 105/11 105/17 106/25 108/6 108/7 112/23 113/2 113/19 114/14 114/17 114/19 115/2 116/17 117/2 118/23 119/14 119/15 124/18 124/19 125/3 129/8 129/11 130/9 132/8 132/10 132/23 132/24 134/11 134/22 134/23 139/18 141/11 143/3 144/21 145/24 148/4 149/21 151/17 153/21 169/4 169/25 170/4 170/22 171/24 173/1 174/5 175/16 179/3 180/19 180/20 181/1 181/1 182/2 182/9 183/4 184/20 185/3 185/6 185/20 186/11 187/12 190/16 190/20 191/20
can't [28] 9/20 9/20 11/25 12/1 12/17 12/18 13/5 13/11 84/4 84/8 84/8 89/6 90/5 100/22 105/4 105/12 105/12 105/17 105/18 108/24 110/11 110/24 131/5 131/9 132/12 175/18 176/21 179/6
candid [1] 130/7
cannot [2] 87/7 134/6
capable [1] 134/18
capture [2] 160/3 160/6
captured [1] 160/14
captures [1] 160/6
cares [1] 186/23
case [51] 3/21 6/25 7/4 7/16 7/18 7/25 9/11 9/12 9/22 10/1 10/5 10/11 12/4 12/21 13/9 13/10 13/14 13/25 15/19 15/23 27/18 27/20 28/11 28/19 31/16 31/17 43/4 72/19 72/20 80/12 81/5 83/18 83/20 84/6 94/3 112/21 122/22 123/14 123/16 123/20 128/15 133/3 133/7 133/23 134/2 139/6 141/2 144/24 180/5 180/7 181/11
cases [10] 13/4 132/23 140/10 140/18 140/21 140/24 144/18 144/23 144/24 145/17
catch [1] 126/19
categories [1] 98/14
category [1] 86/21
causes [1] 38/22
cell [37] 4/7 4/8 4/8 5/25 6/16 21/1 21/2 21/4 21/5 57/6 57/15 57/16 57/22 88/4 149/6 154/10 154/11 154/13 157/11 157/14 157/16 157/17 157/17 158/8 158/16 158/24 159/5 161/8 161/9 161/10 161/12 161/17 162/8 162/14 162/16 167/25 170/19
cell's [1] 161/18
cells [8] 4/6 4/8 4/9 19/10 19/13 158/3 158/7 161/9
certain [7] 10/9 26/6 95/20 95/21 95/21 108/17 122/24
certainly [6] 45/13 66/12 76/1 127/21 128/9 169/9
CERTIFICATE [1] 194/8
certify [1] 194/10
CFC [1] 1/4
challenge [1] 112/13
chance [2] 36/9 179/7
change [2] 71/2 162/17
changed [2] 117/14 117/14
changes [1] 117/22
channel [10] 19/11 137/25 143/20 153/25 154/14 155/18 156/7 162/25 163/6 163/10
characterizing [1] 124/1
chart [1] 84/24
CHEN [13] 2/11 3/9 3/13 5/10 18/20 44/8 58/15 88/2 89/9 147/20 150/22 164/21 180/5
Chen's [1] 57/8
choosing [2] 102/2 108/17
chose [1] 164/22
CHRISTINE [2] 1/20 2/25
Circuit [11] 28/18 71/21 72/10 77/13 77/25 77/25 81/4 139/5 139/7 140/10 144/25
circular [1] 86/8
circumstances [2] 12/3 12/20
citation [2] 120/9 135/6
cite [2] 122/1 150/15
cited [6] 49/10 97/24 97/25 139/2 149/18 150/5
cites [1] 129/21
claim [179] 3/24 6/25 7/7 11/24 12/2 12/16 12/19 13/5 13/11 13/18 13/22 14/1 14/2 14/8 15/15 15/19 15/20 15/21 16/1 16/2 16/3 16/8 17/1 17/2 25/22 26/11 29/2 31/8 32/21 33/10 33/17 35/18 35/21 36/11 36/14 36/17 36/22 36/24 37/4 38/18 39/2 39/3 39/3 39/4 40/17 40/17 41/6 41/7 41/9 41/10 41/19 42/6 43/8 43/21 45/4 45/16 46/16 47/18 47/21 48/17 49/10 49/12 49/13 49/18 50/8 52/18 53/22 53/23 53/23 54/14 54/14 54/16 61/23 62/16 62/16 62/19 62/19 63/16

C

claim... [101] 63/19 63/19 63/23 64/5 66/4 66/7 66/19 66/20 66/21 68/2 68/14 68/15 71/22 71/25 72/5 72/6 72/11 72/12 73/10 73/19 77/15 78/6 78/11 82/23 83/16 86/10 86/24 96/4 103/6 103/11 103/21 105/13 107/18 134/2 136/9 136/17 137/19 137/21 138/2 138/13 138/22 141/9 141/18 143/18 148/7 153/1 153/4 153/5 153/8 153/9 153/22 153/23 155/12 155/16 156/5 156/9 164/25 165/8 165/15 168/8 168/17 168/23 169/1 169/1 174/3 175/12 176/2 176/5 176/24 177/6 177/12 177/12 177/14 177/14 177/16 177/25 178/1 178/2 178/5 178/12 178/18 178/20 179/1 179/4 179/9 179/19 179/21 179/21 179/22 180/23 183/2 184/1 185/7 186/4 187/18 187/24 188/4 191/8 191/16 192/4 192/12
Claim 1 [6] 39/3 66/7 66/21 168/17 168/23 179/1
Claim 10 [7] 39/2 39/4 40/17 40/17 41/19 42/6 45/4
Claim 13 [21] 137/21 141/18 143/18 153/5 153/9 156/9 174/3 175/12 177/6 177/16 178/1 178/2 178/5 178/12 178/18 178/20 179/4 183/2 185/7 186/4 192/4
Claim 16 [1] 78/11
Claim 18 [2] 169/1 176/24
Claim 6 [5] 33/10 33/17 35/18 35/21 36/11
Claim 9 [10] 39/3 41/6 41/9 41/10 43/21 62/16 62/16 62/19 62/19 63/19
claimed [12] 39/7 39/9 59/20 64/3 64/5 68/2 143/7 144/19 168/9 169/20 174/3 175/12
claiming [3] 135/2 186/25 187/18
claims [91] 9/19 11/25 12/4 12/17 12/21 13/15 14/6 15/9 18/1 18/8 27/22 28/21 28/23 28/24 29/4 29/4 31/10 31/14 32/2 32/3 32/4 32/8 32/12 32/13 32/15 32/18 33/2 33/18 38/16 42/14 44/19 49/15 53/24 53/24 59/22 60/25 63/17 64/1 66/10 66/12 68/12 74/3 74/22 75/5 77/5 77/7 77/7 77/13 77/15 77/18 77/18 77/21 77/22 86/12 100/8 103/20 117/14 121/12 121/24 135/3 135/4 136/15 137/11 137/14 137/17 141/8 141/15 141/16 141/21 141/23 141/24 141/25 142/11 142/16 143/6 143/9 145/14 152/18 153/1 153/20 176/24 178/1 178/25 178/25 179/6 179/9 179/12 180/10 187/9 189/2 189/4
clarification [4] 108/13 183/7 183/13 193/19
clarify [6] 12/12 41/19 67/1 165/25 183/16 193/17
class [4] 140/4 140/5 140/7 142/24
classes [1] 139/9
clean [2] 52/8 52/9
clear [28] 9/6 10/5 14/1 21/11 29/9 38/25 49/16 58/7 59/16 71/24 72/10 83/25 87/11 97/15 105/20 107/2 113/24 121/12 128/9 142/10 142/16 143/6 150/1 168/15 168/24 169/4 191/25 192/3
clearly [4] 7/2 29/4 101/13 155/20
clerk [1] 172/22
clerked [1] 190/6
client [6] 3/3 20/8 40/19 106/12 106/12 106/13
close [2] 101/23 180/10
closer [1] 85/10
coarse [3] 37/6 39/16 40/20
cocounsel [1] 3/2
code [1] 144/20
coffee [1] 94/21
coined [1] 76/12
colleague [1] 155/22
colleagues [1] 106/16
collect [3] 57/15 152/23 171/4
collected [1] 154/20
collecting [11] 57/4 57/22 88/3 121/13 136/22 146/7 146/18 147/2 152/8 178/24 192/13
collection [1] 93/12
collectively [1] 90/10
collects [2] 161/25 184/15
collimate [2] 90/21 138/25
collimated [64] 26/2 26/5 76/9 78/9 78/16 82/17 82/20 82/21 82/23 83/15 83/21 84/11 84/25 86/8 86/9 86/11 86/12 86/20 86/22 86/23 86/25 88/23 88/25 92/2 92/17 92/23 93/7 93/22 93/23 95/17 97/6 98/8 98/16 99/4 102/16 102/22 104/4 104/9 104/14 104/20 104/21 104/23 105/9 109/2 113/10 113/25 114/1 114/8 116/4 117/5 119/23 121/8 121/14 121/15 121/19 122/6 124/11 124/17 129/11 134/13 134/14 134/16 134/24 135/13
collimates [5] 26/1 100/12 100/17 117/17 121/21
collimating [45] 48/18 48/21 65/11 75/17 75/25 76/3 76/8 76/15 79/13 80/7 80/10 80/11 86/11 86/24 87/15 92/6 92/18 93/22 94/23 100/5 100/13 101/7 101/13 101/19 102/13 102/18 102/20 107/15 108/12 108/16 108/22 108/25 109/22 110/20 111/17 111/17 111/18 122/2 125/5 127/10 134/9 134/19 136/20 192/13 193/6
collimation [30] 26/1 40/23 41/11 76/20 78/8 79/11 79/12 79/18 80/5 81/14 81/22 82/2 83/13 84/2 84/15 95/20 96/2 96/4 96/10 110/25 110/25 117/18 117/19 121/3 125/5 129/16 129/19 130/24 131/4 138/25
collimator [1] 80/13
Collins [1] 149/19
collminate [1] 76/8
colloquial [1] 14/25
colloquially [1] 14/24
COLM [1] 1/15
color [5] 19/25 26/25 27/2 51/6 51/7
colored [1] 26/9
colors [1] 55/3
column [18] 56/25 78/11 78/12 86/7 86/19 127/17 134/17 134/18 150/13 151/8 153/11 164/2 164/4 165/17 165/18 172/4 172/5 172/9
Column 12 [1] 164/2
Column 2 [2] 134/17 134/18
Column 28 [1] 86/7
Column 44 [2] 86/19 127/17
Column 45 [2] 78/11 78/12
Column 5 [3] 150/13 151/8 153/11
Column 51 [1] 56/25
Column 52 [2] 172/5 172/9
Column 53 [1] 165/17
Column 54 [1] 165/18
Column 8 [1] 164/4
combination [1] 5/11
combines [1] 5/12
come [24] 8/15 36/10 44/7 44/9 44/14 57/23 61/22 61/24 74/15 77/20 83/5 86/3 93/17 110/17 111/8 111/11 127/3 127/5 138/6 169/25 174/7 178/9 179/6 189/5
comes [13] 5/13 32/19 60/2 74/7 77/24 92/23 101/10 107/17 112/13 113/25 113/25 116/5 130/15
coming [18] 5/25 6/15 6/21 24/19 25/25 57/12 57/15 88/9 88/16 88/25 104/11 115/16 136/21 142/6 167/22 180/8 180/11 181/9
comma [1] 119/9
commenced [1] 2/21
commercial [6] 4/14 5/16 5/20 6/8 6/13 10/11
common [3] 28/19 76/11 95/16
communication [2] 20/17 89/16
communications [1] 20/13
comparable [2] 51/4 113/18
compelling [10] 32/14 36/15 37/15 39/1 39/14 42/3 42/6 45/17 74/22 77/16
competing [1] 28/10
complete [1] 27/9
completely [3] 33/1 85/22 124/7
complex [1] 126/10
complicate [1] 128/21
complicated [1] 88/13
component [10] 20/25 26/1 26/10 65/11 65/11 65/12 69/3 139/12 158/13 172/1
components [17] 6/5 20/12 25/20 30/6 48/8 64/19 65/14 68/5 68/7 76/14 157/9 163/21 165/10 165/14 166/4 171/22 172/25
composite [17] 30/7 57/3 57/9 57/14 57/20 143/24 143/25 144/4 145/7 152/22 154/22 155/19 156/2 163/10 170/19 170/24 173/21
comprise [1] 17/15
compromise [1] 109/23
computer [3] 18/15 20/1 28/2
computers [1] 18/17
concave [18] 16/18 16/22 24/12 24/25 25/10 57/12 57/24 65/16 65/17 67/10 69/22 69/25 70/2 139/17 145/8 149/1 170/25 175/16
concede [1] 32/2
concept [5] 126/21 127/7 127/11 128/17 134/9
concepts [1] 3/23
conceptual [4] 4/3 4/5 4/11 4/23
concerned [4] 16/21 44/3 44/5 119/6
concerns [2] 133/15 137/9
conclude [1] 179/12
concluded [1] 194/5
conducted [3] 145/12 148/12 149/12
cone [4] 88/10 88/18 127/3 127/6
confer [3] 74/15 106/11 106/15
confers [1] 137/1
configuration [3] 20/11 25/22 68/4
configurations [1] 169/4
configure [1] 145/2
configured [11] 121/22 135/25 136/17 136/25 137/24 143/7 153/23 155/16 170/25 177/1 187/2
confirms [1] 139/14
confronted [1] 116/21
confusion [1] 187/16
conjunction [1] 121/6
connection [3] 29/1 63/16 133/2

C

CONNOLLY [1] 1/15
connote [2] 142/19 142/23
consequences [1] 137/2
considered [1] 90/15
considers [1] 164/18
consistent [14] 15/19 15/22 35/23 72/8 74/24 78/7 79/24 87/3 92/3 93/6 99/8 124/2 131/9 134/22
constitutes [1] 178/24
construct [2] 87/23 90/5
construction [46] 3/24 7/1 11/24 12/3 12/16 12/20 15/1 25/23 26/12 42/21 42/24 48/17 69/19 70/11 71/19 72/8 73/24 76/25 84/2 86/16 87/3 87/9 87/14 87/18 87/18 90/8 91/14 91/15 92/7 93/8 99/8 99/12 103/6 103/11 103/21 104/8 105/11 106/19 108/25 113/10 124/22 129/5 134/3 136/6 148/8 180/24
constructions [5] 18/24 28/11 75/16 76/10 91/20
constructs [1] 91/12
construe [32] 13/11 64/13 69/16 70/15 71/4 71/17 73/19 73/20 74/16 74/18 79/15 82/25 83/17 87/13 96/8 96/18 99/6 101/19 102/6 104/10 105/1 105/2 111/17 124/15 132/6 133/12 133/16 133/20 133/24 135/15 176/25 188/5
construed [8] 71/12 71/14 84/11 99/14 136/3 136/22 193/6 193/11
construing [3] 111/4 131/24 177/6
contact [1] 145/9
contend [1] 136/4
contention [5] 40/16 40/19 41/20 44/6 45/4
contentions [17] 37/4 38/21 39/15 39/23 43/3 43/7 44/8 44/22 45/1 61/23 62/5 62/11 62/15 63/7 103/17 104/7 124/14
contest [1] 73/3
context [12] 30/24 72/12 72/13 79/13 90/12 100/4 100/7 103/1 136/9 152/12 156/3 160/2
contingent [1] 103/20
continuations [1] 27/10
continue [1] 182/25
CONTINUED [1] 2/1
continues [1] 27/18
contracting [1] 114/5
convention [1] 28/20
converge [5] 16/18 98/3 98/4 102/22 131/22
convergence [63] 16/15 16/23 76/20 78/24 79/21 80/2 80/5 80/10 81/23 109/2 109/5 109/16 109/17 109/19 110/4 110/6 110/7 110/9 110/11 110/19 110/23 111/15 111/22 111/24 112/4 112/9 112/14 112/25 113/8 113/17 113/20 114/1 114/9 114/12 114/13 114/22 114/24 115/1 116/11 116/16 118/16 118/25 119/2 119/6 119/8 119/15 121/16 125/6 125/10 126/6 128/24 129/8 129/11 129/17 129/20 130/19 131/14 131/20 132/3 132/9 132/11 132/21 135/12
convergences [1] 121/14
convergent [2] 105/18 134/14
converges [1] 121/23
converging [22] 93/14 97/3 97/4 101/9 101/15 102/18 102/21 104/3 104/8 104/14 106/7 106/7 107/3 118/25 119/10 119/23 119/24 121/9 121/20 122/3 122/6 124/18
conversion [1] 174/9
convert [3] 155/24 155/24 157/9
converting [1] 162/11
converts [1] 144/12
COOLEY [2] 2/11 3/12
core [2] 173/23 175/23
corner [2] 19/22 25/15
correct [59] 9/4 9/14 13/14 13/20 22/5 23/2 23/5 23/8 23/12 24/10 24/17 24/23 25/7 33/4 36/1 36/4 45/7 45/9 45/11 46/20 47/1 50/3 50/24 51/11 52/21 54/23 55/7 55/9 65/18 67/6 67/23 68/22 70/3 70/4 70/5 74/6 137/14 137/15 137/21 137/22 138/16 138/17 141/17 142/2 142/13 147/22 153/6 154/12 154/19 155/5 155/6 159/12 159/18 161/19 162/17 164/25 165/7 182/22 184/4
corrector [11] 25/2 25/10 53/6 54/5 54/8 57/25 67/2 67/10 67/14 145/9 149/2
corresponding [29] 141/13 143/13 143/16 143/17 143/22 144/5 145/3 145/21 147/19 176/7 176/8 176/13 178/2 178/5 178/19 179/3 179/8 179/13 179/25 183/2 185/5 187/21 188/12 189/6 189/10 189/14 189/17 192/15 192/17
corresponds [1] 187/6
COTTRELL [2] 1/20 3/1
could [52] 10/18 14/3 17/4 18/6 23/9 23/11 27/1 45/8 61/2 63/10 67/7 69/5 70/19 75/15 75/22 82/14 95/6 95/13 95/15 95/15 96/2 96/9 99/7 99/20 105/18 107/25 108/2 108/4 113/9 113/23 115/1 125/9 133/17 134/3 134/13 135/12 138/25 139/15 139/16 139/22 142/20 144/19 150/2 172/16 182/7 182/14 184/7 184/11 186/25 187/1 188/4 188/16
couldn't [2] 95/16 173/2
COULTER [9] 1/3 3/1 3/20 5/17 5/21 27/21 35/6 76/5 166/1
Coulter's [1] 169/10
counsel [9] 2/5 2/15 19/8 26/19 37/10 107/14 117/11 118/10 166/1
counting [1] 164/16
couple [2] 3/25 134/4
coupling [1] 29/22
course [3] 9/20 38/14 84/4
court [26] 1/1 1/15 4/3 7/19 12/7 12/14 12/23 14/14 18/17 40/10 42/11 42/13 44/3 62/23 70/15 70/24 71/23 72/9 72/19 77/20 136/25 137/4 183/12 194/8 194/14 194/15
Court's [1] 3/22
courtroom [1] 2/21
cover [5] 13/11 16/3 16/9 174/20 192/1
create [1] 161/13
created [3] 6/17 29/22 129/22
creation [1] 72/21
credible [1] 152/3
credit [1] 38/22
cross [1] 131/16
crux [1] 29/13
crystal [1] 10/5
curious [3] 24/3 24/4 168/1
curve [2] 53/17 53/18
curved [10] 6/19 69/22 69/25 70/2 70/11 70/19 74/6 74/8 74/12 183/10
customary [2] 71/23 71/25
cut [1] 41/18
cutouts [1] 53/9
cutting [1] 31/21
CYTEK [13] 1/6 3/8 9/23 17/24 18/20 20/8 31/9 53/2 55/15 76/22 78/19 79/9 129/21
Cytek's [4] 27/13 45/23 76/24 103/4
cyto [1] 158/8
CytoFLEX [2] 5/17 6/7
cytometer [15] 4/5 5/22 6/8 20/5 20/14 97/22 157/24 158/1 158/2 158/3 158/12 158/14 159/11 159/12 162/18
cytometers [10] 3/22 4/16 4/21 5/7 19/9 19/10 20/4 20/6 20/9 20/11
Cytometry [1] 97/19

D

D [2] 1/20 2/19
date [3] 74/18 186/1 186/1
dates [3] 188/20 188/21 191/5
day [2] 110/15 145/18
days [1] 180/10
de [1] 50/10
de-multiplexer [1] 50/10
deadline [1] 191/7
deal [4] 52/16 87/12 118/13 137/6
dealing [2] 86/11 100/6
dealt [1] 54/21
debate [1] 96/3
December [1] 123/16
decide [3] 133/25 184/23 185/25
decided [3] 133/3 171/12 187/7
decision [1] 72/17
declaration [1] 97/16
deemed [1] 72/11
defendant [6] 1/7 2/15 73/3 134/5 142/22 176/6
defendant's [1] 73/24
defer [1] 126/13
defined [2] 139/2 140/8
defines [1] 174/16
defining [1] 105/13
definite [1] 135/2
definitely [2] 57/21 171/8
definition [8] 17/22 41/1 98/25 105/19 115/20 116/4 126/15 158/24
definitional [2] 7/6 93/20
definitions [6] 93/6 95/4 139/16 139/18 140/3 157/23
deflects [1] 141/1
defocus [1] 98/12
degree [10] 22/7 86/14 86/15 92/20 94/11 96/3 96/10 110/18 135/10 135/11
degrees [5] 22/8 22/10 22/11 95/24 95/25
DELAWARE [7] 1/2 1/13 133/3 140/22 140/24 141/2 181/10
demonstrates [1] 142/23
demonstratives [2] 4/2 53/3
demultiplexers [1] 19/20
denied [1] 191/23
DENNHARDT [3] 2/4 3/3 76/5
denote [1] 55/19
department [1] 94/9
dependent [3] 33/10 33/17 36/17
depends [2] 39/3 39/3
depict [2] 159/10 159/11
depicted [4] 4/4 4/12 9/8 166/23
depiction [3] 6/13 103/4 128/6
depositions [1] 182/19
describe [8] 8/1 20/23 61/17 68/7 68/10 76/14 78/8 127/15
described [18] 6/24 7/2 7/3 7/24 8/9 15/6 16/13 35/4 65/6 67/22 139/19 145/15 146/25 156/5 172/24 173/15 173/25 184/6

D

describes [3] 23/22 30/9 167/21
describing [7] 64/14 64/15 68/17 73/1 73/11 89/13 106/20
description [49] 7/9 8/4 10/21 11/10 29/8 29/9 29/16 29/17 30/6 30/15 31/4 32/24 44/20 45/19 45/21 45/23 49/6 55/4 61/1 61/3 61/10 61/13 61/16 64/22 65/5 65/20 66/3 66/5 66/6 66/15 66/23 73/13 74/21 75/6 78/4 78/7 97/23 103/24 122/19 122/22 122/24 125/4 125/19 127/20 127/22 130/6 132/19 135/6 153/13
design [2] 6/23 23/11
designated [1] 65/21
designation [1] 74/3
destruction [2] 191/9 191/10
detect [37] 19/25 89/14 135/25 136/17 136/25 137/24 144/9 144/10 144/15 144/15 144/16 145/19 145/20 146/3 149/18 152/7 152/15 152/18 153/24 154/2 155/14 155/23 155/25 156/1 164/23 165/3 165/14 166/5 168/10 169/3 169/18 171/11 171/13 171/20 174/8 174/11 179/2
detected [9] 4/10 6/21 19/15 21/9 21/14 23/21 151/17 152/9 165/5
detecter [4] 25/4 89/14 150/3 150/3
detecters [2] 5/4 146/23
detecting [9] 148/21 152/21 165/10 175/25 176/1 176/15 184/7 184/18 187/13
detection [26] 20/18 145/10 146/16 146/19 146/25 147/21 148/2 148/11 148/22 149/8 149/9 149/11 149/15 152/2 166/4 168/23 169/15 174/8 174/16 175/4 178/24 183/11 183/19 183/20 183/22 187/5
detector [26] 4/22 4/23 6/4 21/9 21/10 21/15 23/22 23/24 26/20 26/21 26/21 26/22 26/23 27/5 54/1 54/1 70/13 149/21 150/2 150/4 150/6 165/16 165/16 167/1 167/3 186/16
detectors [19] 4/10 19/16 19/23 19/25 53/25 57/18 166/3 166/5 168/7 168/8 168/18 169/2 169/11 169/20 171/14 171/16 176/14 176/22 186/18
detects [5] 143/19 151/21 152/5 152/19 184/2
detention [1] 173/18
determination [1] 142/21
determine [7] 74/11 112/14 144/17 157/10 157/12 162/8 162/16
determines [3] 158/16 158/23 162/6
developed [1] 20/5
device [4] 59/18 134/18 143/4 150/6
diagram [3] 34/8 49/20 174/24
diagrams [1] 57/8
diameter [15] 78/10 78/15 78/21 82/11 83/14 84/16 107/16 107/20 114/6 125/9 125/10 125/11 132/20 134/21 135/5
dichroic [31] 26/5 26/6 26/10 27/3 30/15 34/3 34/13 34/22 35/15 35/16 37/12 46/5 46/5 46/6 46/7 48/6 48/7 48/8 48/24 48/25 51/5 52/1 52/15 53/24 64/24 68/8 68/8 69/3 69/7 69/7 70/12
dictionaries [6] 139/2 139/3 149/19 149/19 149/20 150/5
dictionary [11] 93/6 95/4 95/6 129/15 129/21 131/17 132/8 132/10 140/3 140/8 149/20
did [26] 31/2 41/17 41/18 43/12 62/10 62/11 62/14 67/1 86/2 86/18 89/6 91/17 113/22 114/14 116/14 116/18 118/1 119/17 121/7 128/4 128/7 133/19 150/23 157/15 171/11 178/21
didn't [16] 37/23 77/10 93/17 93/24 104/24 124/12 125/10 126/19 133/23 134/2 144/3 151/5 168/4 176/1 179/16 183/15
difference [7] 10/21 11/11 56/16 91/21 98/2 100/13 136/1
different [38] 7/23 8/1 8/2 14/3 16/25 19/25 28/14 35/13 40/9 41/1 41/5 53/21 54/7 54/7 59/10 79/15 86/10 90/9 90/11 92/2 95/3 95/9 96/24 106/19 106/20 108/16 108/23 109/22 117/13 121/1 127/6 130/24 139/8 150/15 163/17 171/22 188/8 188/9
differentiate [2] 100/5 101/12
differentiating [1] 101/11
differentiation [1] 36/25
differentiations [2] 77/15 100/11
differently [3] 79/16 95/4 136/19
differing [1] 135/11
difficult [2] 90/25 90/25
direct [1] 24/13
directed [3] 14/3 19/9 20/10
direction [4] 21/25 22/15 24/14 112/12
directions [7] 21/25 22/1 22/3 22/5 50/22 50/23 88/6
directly [5] 21/12 143/23 146/15 146/19 171/6
disagree [5] 66/11 79/12 108/15 108/22 109/21
disagreement [1] 26/18
discern [1] 11/12
disclaimer [2] 7/5 17/22
disclosed [5] 7/24 10/10 11/9 146/7 176/14
discloses [1] 184/24
disclosure [5] 9/7 73/16 73/20 174/14 175/9
disclosures [1] 8/2
discover [4] 144/17 155/15 155/17 156/1
discovery [2] 180/11 191/7
discuss [4] 134/18 172/12 185/5 185/6
discussed [11] 4/12 9/7 57/17 58/6 59/9 61/6 73/2 73/4 131/10 151/15 175/5
discusses [1] 134/15
discussing [4] 11/18 58/8 78/15 82/10
discussion [14] 11/20 15/5 16/14 46/19 62/19 62/21 74/24 94/22 95/7 95/13 96/3 135/4 136/21 152/13
discussions [2] 102/11 135/20
dispense [2] 56/17 180/21
displaying [1] 144/19
dispute [24] 28/13 36/5 40/4 40/8 40/9 42/10 76/19 78/5 78/18 83/23 84/13 92/1 94/1 130/25 145/19 145/21 146/2 151/18 168/16 168/20 171/13 171/15 178/3 178/6
disputed [9] 17/1 17/2 71/3 71/3 71/6 72/13 134/13 179/19 179/20
disputes [1] 123/24
distance [1] 134/20
distinction [1] 127/8
distinctive [1] 55/3
distinguish [7] 9/18 29/4 33/6 35/18 37/2 108/11 178/25
distinguishable [2] 32/6 35/17
distinguishes [3] 9/12 10/1 79/10
distinguishing [2] 117/18 121/18
DISTRICT [4] 1/1 1/2 1/15 194/15
diverge [1] 126/3
divergence [64] 76/21 78/24 79/22 80/1 81/23 89/1 92/16 100/20 101/1 101/2 101/20 106/5 107/3 109/5 109/16 109/19 110/8 110/10 110/11 110/18 110/23 111/23 111/25 112/4 112/9 112/15 112/25 113/9 113/17 113/19 114/9 114/11 114/22 114/24 114/25 115/2 116/2 116/5 116/9 117/1 118/17 118/21 119/15 119/21 124/19 125/13 125/24 125/25 126/2 126/23 129/2 129/11 129/17 130/20 131/12 131/19 131/19 132/3 132/22 134/12 134/24 134/25 135/8 135/12
divergent [4] 92/13 92/14 92/14 134/22
diverging [7] 93/1 93/15 97/1 98/11 98/12 104/3 116/7
diverting [1] 24/18
diverts [1] 141/1
division [9] 5/12 19/19 25/13 37/6 39/16 40/21 50/9 157/5 164/5
divorced [1] 124/8
do [158] 5/10 7/16 8/3 8/14 9/15 9/17 10/20 11/12 11/15 11/15 11/15 11/15 13/15 13/21 14/15 14/15 17/25 18/11 18/12 18/13 18/14 18/25 19/2 19/20 23/13 23/13 23/14 23/14 23/14 23/15 28/6 29/7 31/9 31/22 32/4 32/6 32/12 34/15 34/15 35/24 36/5 41/20 44/7 44/19 44/21 47/6 47/9 47/12 49/9 49/25 50/8 51/22 52/22 53/12 53/13 55/23 62/25 71/9 71/11 74/1 74/14 74/19 74/20 74/21 74/25 75/13 75/14 75/20 75/23 76/2 77/1 78/6 82/21 84/4 84/17 86/14 87/1 87/8 88/6 88/9 90/22 91/15 91/24 94/14 94/21 95/12 100/9 100/23 103/2 103/10 105/23 107/9 109/12 112/14 112/19 112/20 113/20 114/9 115/1 115/14 115/14 117/9 120/1 121/11 125/14 126/20 128/23 129/7 132/14 132/24 133/14 133/17 133/18 137/7 137/8 139/23 139/24 141/6 143/8 143/14 143/15 151/18 151/19 151/23 153/20 153/21 154/21 157/1 157/7 164/21 164/24 168/20 168/22 168/23 169/22 170/6 171/13 171/20 173/9 174/10 176/7 178/6 178/7 178/15 181/6 181/15 182/2 182/4 182/18 184/13 185/25 187/2 187/25 189/11 189/22 190/16 191/12 193/14
document [5] 86/5 89/8 95/10 114/19 128/12
does [57] 9/15 9/17 9/18 10/3 22/19 24/4 24/6 26/6 41/7 52/10 57/1 78/18 79/3 80/19 80/21 81/6 81/8 82/2 87/9 88/20 106/6 115/22 124/22 124/23 126/11 131/23 142/18 142/23 144/8 145/19 146/2 148/3 148/17 148/24 149/18 152/22 152/23 157/3 157/7

D

does... [18] 158/15 159/10 159/10 160/11 160/15 163/4 163/5 163/15 166/12 166/13 169/5 169/8 169/17 170/21 174/7 179/17 179/18 190/1
doesn't [45] 8/15 8/20 9/3 9/5 11/22 24/4 35/21 45/5 46/17 51/18 61/10 62/16 64/16 66/20 67/20 69/12 73/3 79/20 80/14 80/16 80/24 84/8 86/12 87/18 89/5 91/3 95/6 99/13 105/9 115/1 118/25 122/1 122/3 129/1 129/1 129/23 132/21 145/1 163/12 171/7 173/13 174/10 175/19 184/2 184/8
doing [21] 9/23 12/13 22/12 23/17 23/17 23/19 60/17 84/7 89/3 97/10 98/1 100/3 104/2 107/1 117/20 155/20 156/2 156/4 156/5 159/16 169/15
don't [116] 4/17 8/7 8/17 10/18 12/25 13/9 13/13 14/8 14/23 14/25 15/8 15/10 17/8 18/2 18/11 18/14 23/10 25/17 29/10 29/15 31/17 33/10 34/15 36/10 38/6 38/12 41/3 41/22 43/6 43/14 45/18 51/3 52/6 53/11 57/2 60/10 60/11 60/17 61/20 61/21 62/5 62/23 63/7 63/17 64/4 64/13 68/24 71/9 74/9 74/13 77/16 79/12 83/16 84/4 85/1 90/4 96/7 96/10 96/19 96/22 96/23 99/11 99/12 101/18 102/5 103/19 105/24 106/11 106/15 107/20 108/7 108/15 108/22 109/10 109/21 110/2 110/10 113/4 120/17 128/8 128/25 130/12 130/13 130/25 132/5 132/12 135/7 136/14 142/14 151/13 159/22 163/15 165/23 167/13 167/13 168/15 168/21 170/7 171/15 172/21 173/6 174/11 175/2 177/21 178/3 180/6 181/6 182/10 183/11 188/3 188/11 189/5 189/6 189/13 189/14 191/21
done [7] 27/21 63/15 82/8 120/6 145/16 191/17 192/21
double [1] 120/14
double-spaced [1] 120/14
doubt [4] 8/17 43/11 174/22 174/23
down [21] 16/25 22/16 22/17 23/4 23/5 27/2 50/21 51/1 57/17 86/19 99/21 110/16 111/1 112/21 116/19 121/20 135/10 146/2 147/17 158/18 174/7
downstream [1] 57/19
dozen [1] 139/3
Dr [1] 5/10
Dr. [1] 80/6
Dr. Ilkov [1] 80/6
drafted [1] 77/22
drafting [1] 164/22
drawing [1] 4/3
drawn [1] 26/19
due [1] 143/1
DUSTIN [4] 2/12 3/11 102/24 116/17
dyes [1] 4/9

E

E [2] 2/19 2/19
each [24] 6/4 6/10 14/1 14/2 14/7 17/3 17/16 74/4 93/13 94/21 94/23 99/5 100/19 101/20 105/16 106/4 110/1 116/25 119/20 137/6 139/12 177/1 183/9 192/12
earlier [10] 45/22 47/17 57/17 67/4 67/13 130/6 130/11 149/1 149/10 150/14
earliest [1] 27/11
early [3] 20/7 20/8 188/22
easier [1] 33/24
easily [1] 143/12
easy [2] 90/21 91/17
Edmond [1] 82/3
effect [1] 125/5
effectively [7] 86/20 102/16 102/21 107/23 117/4 119/23 143/2
efficient [1] 5/4
either [11] 9/20 17/3 22/23 61/21 110/24 115/2 184/5 184/11 185/11 185/12 192/5
electric [1] 162/17
electrical [8] 144/13 144/14 150/7 150/8 157/10 158/20 159/4 162/11
element [103] 16/16 21/14 26/25 31/5 48/19 48/21 48/22 49/1 49/1 49/2 49/3 56/13 58/23 58/24 59/6 59/6 59/15 66/17 66/18 68/9 68/9 70/12 70/17 70/19 75/18 76/1 79/14 79/14 80/8 80/10 88/3 102/18 121/13 135/21 135/24 135/25 136/2 136/10 136/16 136/17 136/19 136/21 136/23 136/23 136/25 137/1 137/5 137/19 137/24 138/23 139/1 139/4 139/9 139/15 140/13 140/13 140/17 140/17 140/19 140/22 140/25 140/25 141/9 141/19 141/21 142/12 142/15 142/17 142/23 143/7 143/10 148/11 152/19 152/21 153/23 155/16 167/1 169/1 169/17 175/14 175/16 175/18 175/22 177/2 177/3 177/7 177/22 177/23 179/10 179/17 183/1 183/10 186/16 186/16 187/11 188/7 189/5 192/10 192/12 192/13 192/13 192/14 193/3
elements [12] 28/14 28/21 31/1 56/13 59/25 141/3 156/5 168/9 172/14 186/19 188/8 193/21
eliminate [1] 109/17
eliminating [1] 81/23
Elmo [2] 149/22 171/24
else [21] 36/16 44/19 47/7 55/10 70/20 73/17 96/15 125/14 127/18 141/6 141/11 142/8 147/4 152/2 159/21 169/22 180/22 185/8 191/4 193/8 194/1
emanate [1] 22/19
emanates [1] 151/16
emanating [1] 127/2
embodiment [48] 5/16 7/1 7/2 7/7 7/9 8/21 9/4 9/8 9/13 10/12 10/22 10/23 11/13 11/14 11/25 12/1 12/5 12/17 12/18 12/22 13/6 13/12 14/4 14/9 14/17 15/4 15/7 16/4 23/16 30/22 46/3 47/10 47/12 47/15 47/16 47/17 47/21 58/5 60/12 60/17 60/18 60/19 60/23 64/8 66/11 163/9 169/8 184/15
embodiments [21] 4/15 6/24 7/11 7/15 7/23 8/2 8/5 8/23 9/9 9/21 10/9 10/16 10/17 11/9 11/18 12/2 12/19 15/11 15/11 174/1 175/8
embossed [1] 72/22
emit [1] 4/9
emits [1] 88/6
emitted [7] 89/15 137/24 143/20 153/24 154/16 155/17 156/6
emitting [1] 127/6
encompass [2] 12/5 12/22
encompassed [1] 193/2
end [10] 6/3 6/19 6/22 102/15 102/25 110/15 112/22 113/9 145/18 178/13
engine [1] 8/16
enough [4] 13/18 74/10 74/10 85/8
enter [1] 191/22
entire [6] 22/25 24/15 26/2 26/3 41/20 72/14
entirely [1] 81/24
entitled [1] 74/25
equate [1] 152/11
especially [6] 33/2 65/1 171/13 179/1 179/7 182/13
ESQ [10] 1/20 1/20 2/3 2/4 2/8 2/11 2/12 2/12 2/13 2/13
essentially [20] 4/6 5/11 5/12 5/24 9/23 11/25 12/17 17/16 28/25 29/11 29/14 29/21 31/9 57/18 61/25 63/14 136/1 142/25 144/10 173/24
established [1] 20/16
etendue [12] 89/21 90/17 126/9 126/15 126/17 126/20 126/21 127/4 127/7 127/13 128/2 128/7
even [21] 7/25 10/13 11/21 14/25 92/3 102/15 102/21 104/13 114/25 115/20 121/16 121/17 121/25 124/8 134/7 140/22 151/18 173/13 173/25 177/12 179/6
event [1] 67/18
ever [3] 84/7 114/5 128/25
every [8] 6/11 13/19 13/22 14/6 16/3 64/5 87/7 95/19
everybody [2] 114/8 153/12
everything [2] 25/5 180/22
everywhere [2] 88/5 160/1
evidence [24] 15/16 17/18 72/20 72/24 74/7 77/2 79/8 79/25 81/2 81/4 82/7 84/14 96/19 96/20 103/23 114/4 122/8 123/11 129/14 129/25 142/21 149/23 150/1 150/4
exact [1] 157/19
exactly [27] 10/5 12/14 13/7 17/19 59/2 69/8 86/3 94/10 95/25 98/15 104/9 111/2 119/19 133/7 140/8 144/18 145/14 145/17 146/11 150/21 152/25 156/4 160/7 167/21 171/3 171/25 172/18
examiner [5] 116/22 117/8 117/12 120/5 124/1
examiners [1] 173/10
example [14] 26/22 49/11 49/15 54/9 61/20 79/13 109/5 118/2 143/25 147/14 149/21 166/4 169/1 169/7
examples [2] 55/22 55/23
exception [1] 71/19
excerpt [4] 79/22 85/20 121/25 124/9
excerpts [1] 43/15
exclude [1] 13/5
excluded [2] 47/22 47/22
excludes [1] 119/8
excluding [3] 47/14 47/17 119/10
exclusively [2] 59/17 84/13
excuse [2] 129/9 132/18
exemplary [30] 7/2 8/10 8/22 9/9 9/12 9/21 10/2 10/16 10/22 11/11 11/13 12/2 12/8 12/19 12/24 13/11 14/4 14/17 14/18 14/22 15/7 15/10 16/13 46/3 47/11 58/4 60/19 66/10 163/9 169/8
exhibit [14] 45/13 81/14 85/20 91/9 98/23 98/24 103/5 103/12 103/13 106/3 116/20 120/2 120/4 149/21
Exhibit 34 [3] 103/5 103/12 103/13
Exhibit 45 [1] 149/21
Exhibit 6 [2] 81/14 120/4
Exhibit 7 [6] 85/20 98/23 98/24 106/3 116/20 120/2
exhibits [3] 91/9 92/3 150/6
Exhibits 45 [1] 150/6
exist [9] 80/16 82/2 84/8 89/5 90/4

E

exist... [4] 91/3 122/2 129/1 183/22
exists [3] 160/23 160/24 163/7
expand [2] 27/21 117/24
expanding [2] 114/7 134/21
expect [1] 140/9
expensive [1] 5/1
experience [1] 94/11
expert [20] 78/25 80/4 80/6 80/9 82/1 83/22 96/9 110/21 110/22 120/20 126/13 131/3 131/13 131/16 132/11 133/17 133/24 180/12 182/15 191/7
expert's [1] 83/21
experts [21] 85/5 96/8 96/16 110/16 110/16 110/17 111/5 128/18 131/4 132/2 132/6 134/10 135/10 135/16 138/25 139/16 182/9 182/11 182/17 182/20 182/24
experts' [1] 139/17
explain [16] 20/19 50/15 85/3 87/5 87/10 87/16 89/20 91/11 92/25 98/2 98/20 99/23 102/7 103/17 106/25 141/11
explains [1] 148/10
expressly [4] 16/17 81/18 104/13 105/8
extended [3] 128/19 134/19 134/20
extent [19] 12/6 12/23 31/12 42/9 44/3 63/6 110/7 112/4 112/10 112/14 112/15 112/25 114/22 115/9 115/12 115/17 115/22 118/22 192/20
extreme [1] 110/22
extrinsic [10] 77/2 79/6 79/24 81/2 97/14 114/4 129/14 129/25 149/23 150/4
eye [1] 114/6

F

F [1] 1/15
F.3d [2] 72/15 72/17
face [1] 167/17
faced [2] 73/10 100/4
fact [20] 32/21 43/18 60/24 65/24 73/3 74/23 78/25 79/10 80/4 82/4 82/10 95/5 96/1 151/15 152/9 173/25 175/4 180/11 188/10 191/7
fair [3] 11/21 13/18 188/15
fairness [3] 99/13 189/13 190/9
falling [1] 110/24
falls [1] 70/2
family [4] 27/8 27/9 122/16 122/21
far [8] 10/18 16/21 44/19 88/20 89/1 112/21 126/3 126/25
fashioned [1] 28/7
fast [2] 121/5 151/2
fastener [3] 139/8 140/6 140/9
fasteners [2] 139/6 139/7
favor [2] 38/17 44/7
FCRR [1] 194/14
feasible [1] 180/7
February [3] 38/21 43/4 62/11
February 14 [2] 38/21 43/4
Federal [10] 28/18 71/21 72/9 77/13 77/25 81/4 139/5 139/7 140/10 144/25
feeder [2] 140/22 140/22
feel [1] 109/11
few [6] 12/9 37/10 79/6 94/11 111/9 130/15
fiber [24] 5/25 25/13 25/24 25/25 57/18 89/16 89/25 129/14 129/20 131/17 132/8 140/2 144/1 156/13 156/18 160/19 163/20 164/8 164/9 165/6 166/8 168/11 177/1 177/4
fibers [1] 177/1
field [2] 134/10 140/14
Fifty [2] 147/15 172/10
Fifty-six [1] 147/15
Fifty-two [1] 172/10
fight [2] 85/6 120/22
figure [94] 4/24 9/7 9/23 11/19 14/19 14/21 15/3 15/14 15/20 16/9 16/13 17/10 18/3 18/15 21/6 21/19 25/3 25/11 25/15 30/24 30/25 34/10 35/23 37/11 44/17 45/24 46/19 47/7 47/19 47/25 48/1 48/5 50/2 51/9 54/13 54/18 55/5 56/14 56/23 58/2 59/9 59/10 60/8 64/24 64/25 65/8 66/13 66/22 67/7 68/4 69/5 73/5 73/7 73/17 74/7 78/14 103/5 156/10 156/10 156/11 159/9 159/10 163/1 166/13 166/14 166/15 166/16 166/17 166/24 166/24 167/5 167/5 167/6 167/7 167/17 167/20 167/21 168/2 168/2 170/4 170/6 170/8 170/9 170/13 171/12 172/12 172/18 172/22 173/4 175/3 175/21 179/24 183/5 191/5
Figure 1 [10] 159/10 163/1 166/13 166/17 167/17 168/2 170/4 170/6 170/8 170/9
Figure 14 [3] 50/2 51/9 54/18
Figure 25 [39] 9/7 9/23 11/19 14/19 14/21 15/3 15/14 15/20 16/9 16/13 25/15 30/24 30/25 34/10 35/23 37/11 45/24 46/19 47/7 47/19 48/1 48/5 54/13 55/5 56/14 58/2 60/8 64/24 65/8 66/13 66/22 68/4 69/5 73/5 73/17 74/7 78/14 156/10 156/10
Figure 2A [1] 103/5
Figure 31 [8] 25/11 67/7 166/15 166/16 166/24 167/5 168/2 170/13
Figure 37 [6] 172/12 172/18 172/22 173/4 175/3 175/21
Figure 38 [3] 21/6 166/24 167/21
Figure 5 [2] 59/9 59/10
Figure 9A [1] 73/7
Figures [1] 183/3
Figures 408 [1] 183/3
file [52] 79/9 79/10 81/3 81/8 81/14 82/8 85/20 85/21 89/11 91/4 91/6 91/7 93/6 100/1 100/4 104/13 105/7 106/3 108/9 108/18 109/3 109/18 116/16 116/19 117/11 118/6 118/11 120/2 120/10 120/10 120/14 120/18 120/22 122/15 122/25 123/8 123/10 123/21 124/3 124/9 125/16 125/18 128/5 128/11 128/14 129/24 130/2 130/4 130/9 130/10 130/14 132/18
filter [73] 26/5 26/6 26/10 26/13 27/3 30/15 34/4 34/10 34/12 34/13 34/18 34/23 35/15 35/16 37/5 37/7 37/12 39/4 39/5 39/10 39/11 39/17 40/1 40/2 40/6 40/9 40/18 40/18 40/21 40/25 41/7 41/11 41/15 42/11 42/21 43/9 43/13 43/24 46/5 46/5 46/6 46/6 46/7 48/6 48/7 48/8 48/25 48/25 51/5 52/1 52/15 58/11 60/7 61/17 62/2 62/17 62/20 62/21 63/2 63/24 64/13 64/24 68/8 68/8 69/4 69/7 69/8 70/12 70/12 70/13 73/19 73/22 73/23
filters [38] 6/1 6/18 6/19 19/24 26/12 26/13 35/22 37/6 39/16 40/2 40/18 40/20 40/22 41/10 43/9 43/13 43/25 53/25 58/10 59/13 59/14 59/24 60/2 60/8 61/5 62/2 63/2 63/21 63/25 64/2 64/14 71/19 73/16 73/21 73/25 163/23 193/12 193/22
Final [1] 122/13
find [18] 18/17 32/24 43/8 74/21 77/16 107/20 132/14 135/5 136/25 137/4 144/16 155/15 155/17 156/1 171/4 172/16 173/2 183/4
fine [10] 64/18 85/17 91/14 106/9 106/21 109/14 119/1 119/10 190/2 192/2
FINGER [1] 1/19
fingertips [1] 125/16
finish [4] 141/14 178/14 179/16 180/25
first [188] 3/18 6/7 17/5 20/4 27/13 27/14 27/14 28/1 28/8 28/9 28/14 28/20 28/25 29/5 29/10 29/20 29/22 29/23 29/24 30/10 30/11 30/12 30/16 30/25 31/1 31/2 31/5 31/6 33/14 33/21 34/2 34/6 34/9 34/11 34/13 34/18 35/7 35/10 35/15 35/15 35/21 35/23 35/24 37/2 37/7 37/9 37/11 39/4 39/10 39/17 39/22 39/23 40/1 40/1 40/8 40/18 40/21 41/6 41/10 41/15 42/14 42/21 43/2 43/2 43/5 43/12 43/24 45/5 45/6 46/4 46/5 46/13 46/21 46/22 48/24 49/2 49/6 49/17 50/1 50/4 50/7 50/14 51/14 51/16 51/17 51/19 52/10 52/11 52/13 53/25 54/3 54/6 54/10 54/15 54/17 54/21 54/22 55/2 55/16 55/18 55/23 56/2 56/5 56/7 56/12 56/17 58/8 58/11 58/12 58/15 58/24 59/5 59/12 59/14 59/17 59/21 59/23 59/23 59/24 59/24 60/2 60/9 60/13 61/6 61/8 61/11 61/13 61/17 62/3 62/20 63/3 63/21 63/22 63/24 63/25 64/12 64/13 64/14 64/20 64/23 65/6 65/21 66/17 67/16 67/25 68/1 68/2 68/8 68/10 68/17 69/6 69/11 71/9 71/11 71/13 71/15 72/18 72/25 73/11 73/12 73/16 73/19 73/21 73/21 73/25 74/3 74/5 74/24 75/7 82/23 85/4 87/23 90/8 107/12 116/21 130/12 134/6 136/10 138/3 156/11 162/22 175/23 179/17 185/19 193/9 193/10 193/11 193/20
fit [3] 167/14 167/14 167/15
five [2] 148/6 178/12
FLANAGAN [2] 2/13 3/12
flexibility [2] 83/1 83/15
flow [60] 3/22 3/24 4/5 4/7 4/8 4/8 4/16 4/21 5/7 5/21 5/25 6/8 6/16 19/9 19/9 19/11 19/11 20/4 20/5 20/6 20/9 20/11 20/13 21/1 21/2 21/4 21/5 35/14 57/6 57/16 57/22 97/19 97/22 137/25 143/20 149/6 153/25 154/14 155/18 156/7 157/11 157/14 157/16 157/17 157/17 158/3 158/16 158/24 159/4 159/12 161/9 161/10 162/8 162/16 162/18 162/25 163/6 163/10 167/24 170/19
flowing [3] 57/9 154/13 154/15
fluoresce [1] 19/15
fluoresced [12] 25/8 25/9 145/11 149/12 152/24 154/25 164/8 165/13 166/5 166/7 169/3 171/1
fluorescence [1] 4/9

F

fluorescent [14] 19/17 20/2 20/18 21/16 21/17 101/7 101/8 101/13 102/13 102/14 121/21 121/22 121/23 149/15
fluoresces [5] 21/4 149/6 161/15 166/20 167/25
fluorescing [2] 149/12 155/5
focal [1] 89/2
focus [10] 10/9 29/8 32/2 97/5 98/5 105/9 117/17 121/22 164/25 165/7
focused [21] 68/3 86/25 102/21 104/8 104/14 105/6 115/17 119/10 121/9 121/13 121/19 122/3 122/6 124/11 146/23 147/17 147/23 150/25 151/6 168/5 168/6
focuses [4] 26/17 80/8 100/12 141/1
focusing [51] 26/17 26/19 27/4 31/1 31/5 58/22 58/23 58/23 58/24 59/6 59/6 59/15 61/8 66/16 66/17 70/11 70/17 75/4 79/11 79/14 93/1 100/6 100/14 101/8 101/14 102/14 105/8 105/18 106/6 107/3 108/11 108/16 108/22 108/25 109/6 109/16 109/21 109/22 110/5 112/2 117/1 117/4 117/18 117/19 119/22 121/3 124/18 130/24 136/23 145/23 192/14
folks [2] 179/14 182/10
follow [4] 50/17 120/1 120/4 193/12
follow-up [3] 120/1 120/4 193/12
followed [2] 63/21 63/25
following [2] 31/15 181/19
follows [2] 46/22 62/21
forced [1] 96/11
foregoing [1] 194/10
form [2] 101/12 124/23
fortunately [1] 76/5
forward [19] 19/16 21/6 21/8 21/10 21/25 23/13 23/19 23/20 23/22 96/20 165/15 166/21 166/25 167/1 168/7 171/22 183/19 184/3 184/15
forward-scatter [1] 21/10
found [2] 42/2 183/3
fraction [14] 29/24 29/25 50/4 50/4 50/7 50/8 51/14 51/16 51/17 51/18 52/11 52/12 54/17 54/17
fractions [1] 56/2
fragile [1] 4/25
frankly [2] 18/2 112/18
Fred [1] 3/1
FREDERICK [1] 1/20
frequently [1] 71/21
Freudian [1] 191/10
friend [2] 111/8 129/23
front [5] 22/22 43/7 149/2 167/8 170/6
full [10] 83/3 83/5 83/7 83/9 83/10 83/11 83/12 84/18 84/20 159/12
function [32] 48/20 136/4 136/5 136/8 136/12 137/10 138/16 141/13 143/8 143/12 143/19 144/19 145/3 145/4 145/15 146/25 147/21 152/16 155/20 165/4 177/13 179/18 183/1 183/11 186/25 187/5 187/12 187/24 188/6 189/18 192/24 193/2
functional [4] 143/6 177/25 177/25 187/18
functionally [1] 187/19
functioning [2] 186/24 188/5
functions [6] 143/23 165/2 168/9 169/20 187/3 188/8
funneling [1] 25/5
further [11] 26/12 26/13 26/14 75/9 82/25 121/20 135/7 151/13 170/24 172/16 186/12

G

G [1] 2/19
game [1] 105/20
gather [3] 24/13 152/23 170/25
gathered [2] 25/9 154/23
gathering [10] 146/7 146/18 147/2 152/8 152/24 173/20 175/23 175/24 176/1 178/24
gathers [2] 148/11 162/1
Gaussian [1] 86/8
gave [2] 38/22 135/6
gee [1] 182/14
general [1] 95/18
generally [9] 14/10 71/22 79/18 109/4 109/15 112/11 126/15 154/9 159/24
generates [1] 150/7
generic [1] 142/17
generous [1] 138/10
get [40] 18/15 24/3 34/8 36/10 44/20 47/8 48/19 85/24 86/17 87/17 88/22 91/14 93/7 95/16 96/23 97/11 98/19 99/9 102/10 103/21 104/15 106/19 114/25 117/14 118/16 123/12 124/5 128/18 130/5 130/5 131/5 131/9 138/6 151/2 157/18 168/1 168/21 178/21 181/15 190/3
gets [4] 24/21 88/13 90/23 126/24
getting [5] 10/15 24/21 30/20 30/21 142/4
Ghose [1] 3/4
give [18] 3/16 26/22 35/19 36/9 44/23 49/13 49/24 54/10 70/23 83/2 94/5 96/15 111/12 133/12 135/14 147/7 169/25 179/7
given [8] 65/1 71/22 81/15 140/11 144/23 180/3 180/7 185/17
giving [3] 158/17 159/3 192/22
glad [1] 148/4
glass [2] 22/23 149/17
glitch [1] 17/11
glossary [2] 98/25 140/1
go [107] 3/18 6/12 9/25 10/18 16/11 16/25 18/7 18/22 24/4 24/5 24/6 28/23 30/2 30/5 33/6 33/15 33/16 34/21 35/5 36/15 47/4 49/13 50/22 50/22 52/19 63/12 67/1 67/7 67/13 68/22 69/5 69/19 70/9 74/2 74/4 74/14 74/25 75/9 75/11 75/13 76/2 77/4 77/5 78/1 78/3 79/6 81/7 81/10 86/5 89/8 91/5 95/10 96/8 96/21 97/1 97/17 98/8 98/11 98/20 102/24 103/13 105/5 105/6 111/4 112/21 113/5 113/20 114/15 114/19 120/3 123/14 124/4 133/18 133/20 135/7 137/16 138/18 143/16 144/7 148/5 151/13 153/19 155/15 160/15 162/3 166/13 166/13 166/24 169/5 170/2 170/4 170/22 171/24 172/15 172/20 173/4 174/5 176/5 176/18 176/20 177/11 177/13 177/14 181/24 184/23 185/19 192/3
goes [13] 21/5 21/12 21/21 21/23 21/25 22/2 22/4 22/6 24/11 88/5 101/5 164/13 166/7
going [135] 3/23 7/4 7/6 10/5 10/8 12/12 14/15 14/15 16/24 18/7 18/16 22/13 22/14 22/16 22/17 23/4 24/19 30/7 32/21 34/6 37/14 39/19 50/14 50/15 50/21 51/2 51/6 51/6 52/24 56/14 57/13 57/16 62/2 63/2 67/15 71/4 71/5 74/1 74/1 74/20 75/8 83/19 83/21 83/22 83/22 85/5 85/6 85/12 87/22 88/17 89/23 90/1 92/25 93/3 94/8 96/16 96/20 97/11 99/18 100/25 101/2 102/11 103/1 103/2 103/15 104/11 109/12 110/17 111/3 112/22 113/15 115/19 116/1 116/2 116/7 116/8 120/25 121/5 121/11 121/12 127/1 127/3 127/5 127/6 128/21 131/13 131/14 132/2 133/11 133/12 135/14 135/15 135/18 136/13 138/5 138/15 140/5 140/6 141/5 144/7 146/21 151/24 155/4 157/9 159/23 161/1 161/5 161/10 161/13 162/10 166/25 167/2 170/3 173/23 176/22 177/13 178/12 178/13 178/14 179/21 179/25 180/7 181/23 181/24 184/23 184/24 185/8 185/10 185/12 185/25 188/5 189/3 189/9 190/25 193/18
good [24] 2/23 2/24 3/7 3/10 4/18 12/15 18/20 29/3 36/12 44/16 64/10 64/17 76/4 85/15 115/23 126/15 174/23 176/6 181/5 183/17 189/21 190/10 191/22 192/2
got [31] 31/22 33/12 38/20 41/1 41/3 44/17 48/25 52/20 61/12 63/24 76/6 84/10 84/24 85/11 94/20 96/9 103/21 139/23 147/16 168/22 174/14 176/4 179/11 180/10 181/8 184/25 185/3 185/25 187/25 190/7 191/16
great [4] 3/15 19/3 108/24 190/14
greater [1] 51/21
greatest [1] 15/5
green [1] 104/3
group [1] 177/20
guess [5] 75/2 83/25 96/11 99/18 164/17
guessing [2] 74/20 175/3
guideposts [1] 96/15
guy [2] 50/20 94/14
guys [3] 3/17 28/3 173/9

H

had [21] 4/21 4/24 6/8 20/8 37/21 38/17 45/17 96/11 117/7 117/12 120/21 127/12 128/1 133/21 138/19 150/21 151/4 182/19 186/19 186/19 188/21
hadn't [1] 147/23
Hale [1] 3/3
half [2] 4/20 139/3
Hall [1] 181/10
hand [4] 19/22 25/14 44/24 85/12
handed [1] 4/2
happen [2] 134/3 189/3
happened [1] 183/4
happening [3] 51/20 84/1 170/18
happens [11] 21/3 21/16 24/11 26/4 51/3 51/12 88/3 88/12 130/4 188/25 189/8
happy [7] 7/19 32/7 49/20 77/4 77/5 79/6 102/6
hard [1] 62/24
hardest [1] 66/1
has [50] 6/4 16/15 26/19 26/24 27/16 27/21 30/9 35/6 47/18 50/8 50/22 51/22 52/16 64/14 67/14 67/16 71/21 71/23 78/9 78/21 83/11 85/7 89/21 90/17 91/15 91/24 92/10 93/2 100/23 116/3 116/5 118/3 118/4 120/5 120/24 122/6 127/10 129/16 131/1 136/2 139/23 142/22 144/12 149/1 149/2 153/13 168/23 176/13 184/14 184/25
have [208]
haven't [3] 74/10 171/16 182/19
having [13] 4/17

H

having... [12] 40/4 79/25 80/1 100/5 102/11 113/24 114/1 139/22 139/24 149/14 168/18 182/11
Hawaii [2] 181/4 181/15
HAYNES [2] 1/20 2/25
he [10] 34/14 77/13 78/25 107/16 108/10 108/11 118/10 121/1 131/1 133/4
he's [4] 108/17 121/1 121/2 150/25
heads [1] 172/23
hear [11] 27/23 30/8 31/17 31/24 31/25 103/19 106/16 107/5 144/3 147/18 150/18
heard [5] 8/24 19/8 37/10 55/25 74/10
hearing [7] 1/11 45/14 133/17 142/7 180/25 189/4 191/23
hearings [2] 179/15 182/10
held [1] 72/19
help [9] 13/3 18/23 38/23 46/17 57/1 69/18 78/4 137/8 172/21
helpful [6] 18/2 25/18 71/9 75/14 107/21 131/24
helps [1] 46/18
here [125] 3/9 4/14 6/1 6/2 7/1 7/7 17/12 20/20 25/18 25/23 26/9 28/5 28/13 33/11 34/2 34/8 35/11 36/22 38/9 39/20 39/23 40/1 43/16 43/21 47/23 49/1 50/5 50/9 50/11 50/16 51/21 52/17 52/18 52/23 52/24 53/8 53/17 53/22 62/1 69/8 72/23 75/15 76/10 78/4 78/6 79/17 81/10 81/22 83/13 85/18 85/19 86/21 86/24 89/6 89/10 89/12 90/6 90/16 90/20 91/4 91/12 91/20 92/22 93/4 96/11 97/23 98/1 99/18 100/3 100/23 101/4 103/3 104/2 104/4 104/6 105/8 106/12 106/13 109/24 111/6 113/24 113/24 116/16 118/8 118/9 120/1 120/8 120/23 122/21 125/8 130/14 130/15 132/1 133/7 134/3 136/24 138/8 138/23 139/9 140/13 143/5 143/24 144/8 144/25 145/6 146/13 148/4 149/22 152/5 152/13 152/22 154/5 154/9 155/16 159/15 163/21 165/1 167/11 167/22 170/19 170/24 171/25 176/22 181/9 189/15
here's [12] 29/20 35/11 80/5 81/13 95/2 99/25 116/18 139/14 143/25 145/6 153/22 176/24
hereby [1] 194/10
hey [4] 95/17 101/10 104/12 139/14
high [2] 4/5 174/12
high-level [1] 4/5
highlighted [1] 78/17
highlights [1] 100/10
highly [1] 92/8
him [2] 94/14 131/16
his [3] 67/19 108/11 130/1
histories [1] 130/4
history [50] 79/9 79/10 81/4 81/8 81/14 82/8 85/20 85/21 89/11 91/4 91/6 91/7 93/6 100/1 100/4 104/13 105/7 106/3 108/10 108/18 109/3 109/18 116/16 116/19 117/11 118/6 118/12 120/2 120/10 120/10 120/14 120/18 120/22 122/15 122/25 123/9 123/10 123/21 124/3 124/9 125/16 125/18 128/5 128/11 128/14 129/24 130/3 130/9 130/10 130/15
hit [3] 52/10 67/15 161/17
hits [9] 21/3 21/24 22/2 25/3 50/21 88/4 149/5 161/8 161/12
hitting [7] 4/7 53/20 54/4 67/20 69/3 69/13 73/8
hold [55] 12/10 30/3 33/12 33/15 33/16 34/7 35/19 36/19 38/5 48/13 49/4 59/20 65/15 69/17 69/20 70/7 97/8 97/8 99/9 99/21 99/22 108/20 109/8 109/8 109/8 111/16 111/20 114/16 114/17 125/22 131/20 133/8 146/5 147/5 147/7 148/18 150/9 150/24 151/23 153/3 153/18 154/4 157/21 157/21 158/4 159/7 159/7 159/16 162/23 174/13 174/13 176/16 176/19 180/17 183/14
holes [2] 21/22 22/22
honest [2] 10/6 147/24
Honor [255]
HONORABLE [1] 1/15
hood [1] 5/24
hope [1] 85/8
hopefully [2] 63/5 180/21
how [61] 5/21 7/21 9/15 9/17 9/18 10/2 10/20 11/15 11/17 13/15 15/15 16/17 18/3 18/3 19/12 25/19 30/15 57/2 60/5 68/4 72/4 82/16 82/19 83/19 83/23 92/2 92/25 93/3 93/4 97/23 99/3 100/23 102/12 103/17 107/9 112/3 112/14 116/15 116/19 126/2 126/15 126/22 126/23 126/25 127/9 127/14 129/5 130/9 132/25 138/24 140/18 145/1 145/2 154/21 163/17 167/14 173/9 179/18 183/16 188/4 188/11
However [1] 169/19
huh [5] 65/3 122/10 168/13 168/14 168/19
hurt [1] 190/25

I

I [662]
I'd [2] 74/14 96/12
I'll [11] 18/22 32/12 44/8 96/18 124/4 166/15 179/7 182/6 184/19 185/1 191/22
I'm [120] 3/22 9/16 10/14 12/12 13/9 14/24 15/2 22/20 24/3 29/3 29/5 29/6 31/21 32/7 32/21 33/19 35/9 44/5 45/15 50/14 50/20 52/7 52/8 53/11 56/14 56/23 60/24 63/1 64/18 65/19 65/25 71/4 71/5 71/17 74/1 74/1 74/20 75/3 75/8 77/4 77/5 77/6 77/7 77/14 78/2 79/6 90/1 92/24 97/9 99/18 100/4 102/6 103/1 104/1 108/14 113/3 113/7 115/3 115/3 115/4 115/14 115/15 115/24 116/1 116/2 117/3 119/7 121/5 121/16 127/25 133/11 133/12 135/15 137/10 138/5 138/10 139/11 141/5 142/4 142/7 144/7 147/13 148/4 151/7 151/24 156/16 159/3 161/16 168/1 168/3 169/6 170/3 171/7 171/8 171/12 172/5 175/3 176/22 177/6 177/13 177/16 178/1 178/1 179/12 181/3 181/17 181/18 182/16 182/17 182/23 184/12 184/23 185/2 187/4 187/8 188/4 188/11 188/11 191/17 192/22
I've [25] 17/20 33/12 38/20 41/3 44/17 63/24 64/9 85/11 92/16 94/20 96/9 103/21 103/22 114/20 128/25 151/4 170/5 176/4 179/11 181/8 182/25 192/23 192/23 193/6 193/11
i.e [1] 135/11
idea [6] 6/10 10/7 87/24 89/4 120/12 129/22
identified [2] 60/8 76/15
identifies [1] 8/22
identify [6] 8/21 9/3 28/14 43/12 104/25 192/15
ignored [2] 77/13 85/22
ignoring [1] 108/18
III [1] 1/20
Ilkov [1] 80/6
illuminated [9] 137/25 143/21 150/7 152/25 155/2 155/9 155/18 156/7 171/1
illumination [2] 145/10 155/7
illustrate [1] 14/14
illustrated [1] 54/12
illustrating [1] 31/9
illustrative [1] 7/3
image [2] 17/5 70/13
imaged [1] 152/23
images [2] 103/16 148/11
imaging [4] 146/7 146/19 152/8 152/23
immediately [1] 40/22
impermissible [1] 16/1
implemented [1] 144/20
implication [2] 12/7 12/23
implications [2] 12/9 127/10
important [11] 8/20 16/24 25/21 37/13 41/25 67/5 71/13 71/14 75/18 169/14 182/12
importantly [3] 6/25 19/17 102/15
impose [1] 72/25
impossibility [4] 80/17 80/23 87/14 114/2
impossible [3] 81/9 87/8 187/22
imprecise [1] 164/24
improves [1] 6/5
INC [2] 1/3 1/6
incidentally [1] 158/21
inclined [3] 137/7 137/9 179/12
include [8] 80/5 82/14 106/6 163/12 168/4 175/16 175/18 175/19
included [1] 148/14
includes [4] 63/21 133/2 145/8 170/25
including [9] 40/21 45/12 72/14 109/4 140/24 169/10 171/5 172/25 175/20
incoming [1] 80/14
incomplete [2] 39/23 39/25
inconsistent [4] 129/20 130/2 130/11 130/23
incorporate [1] 150/17
incorporating [1] 62/18
incorrect [1] 66/16
incredible [2] 5/17 181/22
indefinite [25] 85/4 93/23 96/12 105/3 111/1 112/18 115/20 115/21 133/5 136/6 169/18 176/10 176/12 186/4 186/6 186/9 186/11 186/20 186/23 187/8 187/20 187/24 189/6 189/16 189/19
indefiniteness [7] 112/20 133/15 174/12 188/4 188/16 188/23 189/15
independent [9] 13/22 14/6 14/6 15/20 15/21 16/2 16/3 16/8 47/21
indicate [2] 78/9 78/12
indicated [1] 93/3
indication [1] 118/3
indirectly [1] 97/25
individual [1] 6/20
indulgence [1] 3/22
industry [5] 5/2 5/6 17/17 20/13 20/17
infer [1] 174/21
inform [1] 18/23
information [1] 144/19
informs [1] 25/22
infringe [1] 132/12
infringement [17] 18/3 18/4 37/3 38/21 39/15 39/22 40/16 42/10 43/3 45/4 61/23 62/11

I

infringement... [5] 63/7 103/17 104/7 124/7 124/13
infringement's [1] 42/17
initial [32] 31/6 31/11 36/25 37/4 39/4 39/10 40/2 40/5 40/18 40/25 41/1 41/7 41/15 42/3 42/5 42/11 42/24 43/1 43/5 43/9 43/23 43/24 45/5 46/6 58/23 59/6 62/1 62/2 62/17 62/21 63/2 66/16
initially [1] 132/1
inject [1] 86/14
injection [1] 92/20
inquiry [1] 72/4
inside [5] 30/11 30/12 161/25 163/2 163/10
insofar [1] 173/15
instance [20] 17/16 43/12 46/12 60/15 61/9 61/16 61/25 68/25 71/9 71/20 72/24 73/4 74/5 77/12 134/17 139/12 162/22 163/13 168/17 175/24
instances [3] 49/5 61/12 134/15
instead [6] 28/15 76/21 101/8 101/14 121/14 121/15
instrument [4] 95/19 158/2 158/6 158/11
Intel [1] 144/24
intended [1] 78/22
intending [1] 61/11
interact [1] 96/25
interest [2] 7/20 49/21
interested [4] 77/4 77/6 77/7 129/13
interpret [3] 13/5 77/20 89/6
interpretation [2] 72/7 119/12
interpreted [2] 12/4 12/21
interpreting [2] 14/7 187/4
Interrogatories [1] 43/15
intervals [1] 6/11
intrinsic [34] 15/16 17/18 72/20 72/24 79/5 79/8 81/4 82/7 84/14 92/22 96/14 96/19 96/20 97/12 97/18 97/24 97/25 98/21 98/22 98/24 99/7 101/16 102/2 103/23 105/10 107/2 107/13 114/4 118/5 122/8 123/11 129/25 142/21 149/25
introduced [1] 20/7
invalidity [1] 18/4
invented [1] 5/10
invention [13] 4/16 7/5 9/24 14/1 14/2 16/22 17/21 32/24 72/3 77/19 77/21 167/11 168/6
inventions [2] 20/20 20/21
inventors [2] 77/18 80/7
involve [1] 118/25
involves [3] 101/8 101/14 119/22
irrelevant [5] 34/5 35/9 62/6 67/23 67/25
is [744]
island [2] 181/23 181/25
isn't [15] 11/4 11/8 26/11 51/2 53/23 82/23 92/21 96/5 99/15 107/21 168/2 171/17 175/11 187/8 189/8
issuance [1] 123/6
issue [21] 18/16 39/20 42/11 42/13 42/18 42/20 46/16 54/12 59/21 63/6 63/14 67/24 72/20 75/2 76/23 95/19 142/1 143/19 144/8 151/3 188/22
issued [5] 27/10 27/11 122/12 123/15 123/21
issues [5] 4/18 18/4 76/6 113/21 136/10
it [474]
It'll [1] 181/22
it's [297]
its [19] 20/15 27/13 27/16 27/16 46/19 76/18 79/21 109/5 109/15 111/15 111/19 112/18 123/6 131/23 133/12 135/14 137/6 140/13 155/20
Its' [1] 125/8
itself [6] 8/4 9/24 83/10 125/17 129/21 154/22

J

JACOBS [3] 2/8 3/6 3/8
JEFFREY [3] 2/4 3/3 76/5
Joe [1] 35/20
joint [6] 48/14 48/16 103/6 103/10 103/11 185/20
Judge [26] 1/15 3/21 13/23 30/20 76/4 78/2 82/22 111/2 111/14 125/23 125/25 128/13 129/7 129/13 130/12 131/15 131/25 132/17 133/4 133/10 153/16 171/25 179/25 181/10 183/16 191/13
Judge Andrews [1] 133/4
judgment [2] 112/20 188/22
jump [2] 97/11 99/21
junction [1] 29/21
June [1] 27/15
jury [7] 17/4 18/2 96/15 110/18 133/25 134/2 181/8
just [174] 3/16 3/23 3/24 3/25 5/19 5/20 9/1 9/17 10/6 16/12 18/6 20/19 21/18 23/4 23/10 24/3 28/17 28/20 29/16 29/23 30/23 31/8 32/2 32/13 32/20 34/7 38/25 42/9 48/8 49/24 50/6 50/17 51/1 51/25 52/9 54/6 54/21 54/25 55/14 55/18 56/13 56/18 57/2 58/4 61/8 61/15 64/11 64/13 67/1 69/2 71/9 74/4 74/13 74/14 74/17 74/20 75/3 77/24 78/3 78/12 81/11 85/17 85/19 85/24 87/1 87/11 88/5 88/21 91/1 91/11 91/14 92/11 92/19 93/25 95/8 95/16 96/7 96/16 97/9 97/15 99/6 100/11 102/9 102/12 103/15 104/2 106/23 107/1 108/20 108/21 109/10 111/17 113/5 113/8 113/14 113/24 115/14 116/3 116/14 118/12 118/15 118/16 118/17 119/17 120/11 120/23 121/16 125/2 125/11 125/12 125/18 127/16 128/9 129/7 130/15 132/18 132/22 135/6 135/9 135/14 138/18 138/24 139/5 139/15 139/17 140/6 140/9 140/9 141/5 142/10 144/16 145/3 145/4 146/18 147/2 147/7 147/7 149/21 150/10 151/5 153/2 155/15 156/1 156/20 157/18 157/23 158/4 158/22 159/16 159/17 159/17 166/15 168/1 168/24 170/3 171/12 172/12 172/24 173/4 174/7 174/15 176/21 178/14 178/21 179/8 179/21 179/25 181/21 182/17 183/15 184/2 191/6 191/25 193/20

K

KAHN [1] 2/3
KAREN [2] 2/8 3/8
keep [4] 60/17 60/21 60/22 109/12
kept [1] 117/15
key [6] 20/20 20/21 101/6 123/25 143/5 148/15
Khan [12] 3/2 3/19 35/1 36/5 38/12 38/16 55/12 75/20 143/1 176/20 181/12 182/1
kind [22] 13/14 18/12 38/17 74/12 87/21 88/1 88/10 88/10 88/10 88/18 92/20 93/4 94/12 97/2 97/10 97/25 98/19 123/23 126/24 139/23 184/11 190/8
King [1] 1/13
KNIGHT [5] 2/12 3/11 3/13 67/3 67/7
knocking [1] 172/22
know [92] 3/21 4/17 8/11 10/4 12/25 13/9 14/25 15/13 16/13 16/14 16/20 17/4 27/5 32/19 32/20 32/22 40/7 41/24 42/2 44/14 46/13 51/3 52/6 53/11 62/6 74/9 74/13 77/4 83/25 84/23 86/7 89/1 91/12 91/20 93/24 94/23 96/10 96/24 97/2 97/13 98/2 99/12 104/2 104/16 105/14 105/21 105/24 106/23 106/24 112/15 112/17 113/23 114/3 115/16 120/5 121/5 123/11 127/16 127/23 128/25 129/2 129/13 129/23 133/6 135/1 138/6 139/7 139/11 154/21 154/22 157/18 168/3 170/7 171/8 173/10 174/4 179/7 179/14 182/7 182/15 183/5 183/11 184/19 185/1 188/4 188/11 189/11 190/6 190/12 191/17 192/23 192/24
known [3] 5/3 5/5 76/17
knows [1] 132/25

L

L [1] 1/20
label [1] 48/21
labeled [1] 174/25
labeling [2] 48/6 66/16
labels [1] 46/5
language [42] 28/24 33/10 36/22 45/3 49/10 49/12 49/13 50/9 52/18 53/22 53/23 54/14 54/16 59/21 66/5 66/19 66/20 68/2 68/12 68/14 68/15 73/10 86/10 86/24 132/15 138/19 142/5 143/5 146/13 150/22 151/9 152/5 153/1 153/19 153/22 153/23 155/11 165/1 165/8 165/15 168/8 178/19
large [5] 4/16 4/19 5/1 85/8 126/22
larger [2] 127/9 135/25
laser [16] 4/6 4/7 20/24 20/24 53/14 88/4 154/6 160/24 160/25 161/4 161/5 161/8 161/12 161/17 167/22 167/24
last [5] 75/13 83/19 90/16 116/14 133/19
late [1] 181/4
later [15] 25/2 30/8 48/19 50/15 52/25 74/18 117/12 117/24 130/5 130/6 130/18 136/21 136/22 146/22 147/17
later-to-be-construed [1] 136/22
law [20] 7/16 7/18 9/11 9/12 10/1 10/6 12/4 12/21 13/25 15/19 15/23 28/20 31/16 31/17 80/12 81/5 137/12 138/6 138/6 185/1
lawyer [1] 32/23
lawyers [1] 77/23
layers [1] 5/14
layout [2] 170/16 170/17
lays [1] 28/12
LAYTON [1] 1/19
lead [1] 3/14
leading [1] 123/9
leads [1] 160/16
learn [1] 27/18
least [11] 14/5 16/8 30/24 32/14 55/21 60/1 71/4 74/8 134/7 139/2 169/7
leave [6] 75/8 75/14 160/11 163/4 163/5 182/6
leaves [3] 160/14 162/3 164/13
leaving [1] 121/23
left [3] 24/22 133/20 148/15
legal [1] 9/25
length [2] 73/3 89/3
lens [13] 26/17 27/4 30/9 40/23 41/11 97/2 100/11 100/16 100/18 115/16 116/24 139/15 175/17
lenses [7] 58/22 58/23 76/16 88/24 89/3 96/25 141/4
less [8] 32/18 83/12 89/21 90/17 92/14 101/1 129/13 135/3

L

let [21] 10/14 20/19 32/12 38/12 41/5 48/1 68/22 75/8 81/10 83/2 95/8 95/10 95/12 96/8 107/12 108/9 133/25 134/4 147/18 150/18 183/5
let's [31] 3/17 13/17 31/17 33/9 44/24 70/23 75/11 76/2 76/2 87/24 98/20 99/9 101/5 102/24 106/16 107/5 111/16 112/20 115/16 118/12 137/16 138/6 138/18 143/15 148/5 151/2 180/3 180/17 182/4 186/1 192/3
letter [1] 62/22
letting [1] 111/4
level [2] 4/5 55/14
Levy [1] 3/4
Licenses [1] 144/24
light [271]
light's [1] 69/3
lights [2] 165/13 169/3
like [94] 4/12 5/19 19/1 22/8 22/13 25/9 28/2 31/15 31/16 32/8 39/14 45/14 47/12 47/20 49/21 51/13 53/17 74/14 76/6 81/21 87/24 87/25 88/5 88/21 89/5 90/20 91/16 92/13 93/25 94/5 94/6 94/10 95/8 95/17 95/17 96/22 96/24 97/2 97/22 98/11 99/11 99/12 99/17 104/2 104/24 105/24 106/9 109/10 109/11 113/12 113/13 113/15 113/15 113/19 115/7 115/9 115/17 117/17 120/7 121/9 124/2 124/9 124/11 126/24 127/3 127/11 128/20 129/23 130/16 130/17 131/13 138/24 139/5 139/15 139/17 139/19 140/6 140/9 140/10 141/12 143/4 144/13 160/25 167/7 168/2 168/17 170/12 172/22 178/12 186/4 186/20 187/8 187/19 188/10
likely [1] 135/9
limit [10] 7/6 17/21 17/22 17/25 18/1 60/11 132/21 188/5 190/4 190/16
limitation [10] 29/2 29/11 41/7 72/21 73/14 73/14 74/9 74/12 100/20 100/23
limitations [6] 31/13 31/14 100/21 101/3 101/21 106/6
limited [24] 9/20 12/1 12/2 12/18 12/19 15/10 29/10 32/2 59/17 75/15 110/7 110/9 111/22 111/24 112/4 112/10 112/15 112/25 114/22 115/10 115/11 118/22 125/12 130/19
limiting [9] 40/24 81/22 109/5 109/15 109/19 111/15 111/19 114/7 115/9
limits [1] 79/21
line [8] 86/7 86/19 120/15 140/12 142/25 149/24 150/16 151/7
Line 29 [1] 86/7
Line 30 [1] 120/15
Line 56 [1] 150/16
Line 65 [1] 86/19
lines [9] 57/1 83/23 120/17 134/18 151/8 151/15 152/5 153/11 165/18
Lines 45 [1] 57/1
Lines 63 [1] 165/18
linked [3] 143/23 145/4 155/20
linking [1] 145/6
links [1] 146/15
liquid [10] 50/5 50/7 50/12 50/18 50/21 51/12 51/16 52/17 56/3 56/18
list [1] 74/15
litany [1] 71/10
Literally [1] 158/18
little [17] 3/23 22/10 33/24 53/9 75/12 83/11 83/15 87/21 88/1 88/13 89/12 90/11 92/14 120/22 124/5 148/25 178/9
live [11] 84/24 101/22 101/25 102/4 107/25 108/2 108/4 108/6 112/23 113/2 118/23
LLP [1] 2/11
long [5] 47/20 85/16 118/24 130/13 190/6
longer [1] 186/4
look [55] 37/3 43/8 43/23 44/14 44/16 54/19 58/20 61/19 62/16 62/19 66/6 74/2 74/19 74/21 78/13 81/10 86/6 86/13 87/17 88/7 88/14 88/19 88/20 88/23 89/10 91/19 91/22 95/3 96/9 101/5 101/7 103/23 104/17 104/17 104/18 105/7 117/21 120/15 121/4 121/6 134/17 150/10 164/1 165/8 172/20 174/25 175/2 179/1 179/5 180/17 182/8 184/24 185/1 190/5 190/7
looked [2] 102/17 149/10
looking [19] 28/22 41/10 53/11 60/24 78/13 84/13 90/10 97/3 103/22 107/1 108/18 147/13 151/8 178/1 178/11 181/2 187/11 188/11 190/13
looks [6] 5/19 19/1 28/2 39/14 76/6 170/12
lose [1] 190/8
losing [1] 118/7
loss [5] 173/18 174/16 174/19 175/4 184/6
lost [3] 190/9 190/10 190/11
lot [9] 28/2 31/22 45/16 79/9 120/21 142/6 163/24 170/12 190/13
lots [2] 61/12 139/8
love [1] 131/16

M

made [10] 40/19 42/24 51/8 71/24 72/10 87/2 92/15 120/11 129/12 130/2
main [3] 114/14 118/7 118/9
mainly [1] 168/5
maintain [1] 110/2
maintaining [4] 79/18 81/15 109/4 114/6
maintains [1] 79/20
make [23] 47/14 49/16 63/11 64/11 66/25 71/3 87/7 87/12 90/10 92/14 97/9 100/22 106/9 113/14 120/6 120/8 120/23 121/12 130/22 142/20 178/21 185/19 185/20
makes [5] 21/11 80/15 143/6 150/1 178/4
making [3] 102/10 124/12 193/18
manipulate [2] 68/5 77/18
manipulated [1] 25/20
manipulation [3] 32/19 39/8 130/8
manner [1] 59/19
many [3] 13/15 76/13 110/23
map [1] 66/12
mapped [1] 129/6
mapping [1] 66/21
maps [2] 47/18 47/21
marketed [1] 6/7
marketplace [1] 5/18
Markman [4] 1/11 72/9 179/15 180/10
matter [5] 51/18 69/12 79/17 137/12 148/17
matters [5] 9/11 12/6 12/23 30/22 102/12
may [19] 12/14 15/14 19/4 30/19 33/23 49/9 55/17 58/10 70/10 85/10 96/3 109/2 122/13 128/10 133/15 145/11 148/12 149/12 173/8
May 2 [1] 122/13
maybe [19] 17/12 18/11 18/16 37/13 38/22 41/18 59/13 69/18 74/15 76/10 96/12 96/23 96/23 99/19 142/6 142/8 161/16 174/3 178/3
me [91] 3/1 3/2 3/16 8/3 9/18 10/2 10/14 11/11 13/3 20/19 29/8 29/9 29/16 32/13 32/17 32/20 32/25 35/19 37/19 38/22 38/23 41/5 43/7 44/7 48/1 49/13 49/24 56/24 64/22 68/22 69/15 72/16 73/18 74/16 75/3 75/9 77/20 81/10 83/2 83/25 84/1 84/2 85/12 94/5 95/10 95/12 96/2 96/12 96/17 97/16 99/17 105/25 107/12 108/9 110/17 111/10 111/12 113/16 124/5 125/3 129/9 131/18 132/18 134/4 134/23 137/8 137/9 141/12 142/16 147/7 147/18 147/20 150/18 151/1 151/14 151/20 152/11 152/15 158/23 159/17 167/5 168/21 169/25 172/21 173/1 174/7 178/4 183/5 187/19 187/23 190/6
mean [75] 8/12 11/4 12/13 13/16 22/8 32/3 32/17 41/20 44/16 45/5 50/22 53/12 56/23 57/12 61/10 77/10 82/20 90/7 93/25 105/19 105/24 107/22 110/16 112/18 115/22 116/13 124/2 126/9 129/1 129/4 134/4 144/9 145/19 146/3 148/1 148/24 151/17 155/15 157/4 157/18 166/13 167/4 167/10 167/15 168/17 171/8 171/17 173/10 173/13 174/3 175/15 175/18 175/19 175/19 177/21 177/23 178/3 178/3 180/23 181/15 184/22 186/3 186/22 187/1 187/23 189/2 189/11 189/15 190/5 190/10 190/10 190/14 190/25 192/19 192/23
meaning [12] 18/17 71/17 71/23 71/25 72/1 76/18 77/21 95/13 133/13 134/1 135/15 136/3
means [57] 15/1 44/18 48/20 79/18 83/11 83/14 84/15 87/6 87/15 90/19 92/11 95/18 100/5 102/12 107/15 111/18 126/20 133/6 136/4 136/4 136/5 136/8 137/10 138/16 139/1 140/25 141/13 142/18 143/1 143/12 144/10 144/11 144/15 144/16 145/20 149/14 152/18 154/3 154/9 155/23 155/25 156/1 157/5 158/8 158/10 174/11 177/13 179/18 183/1 186/24 186/25 187/5 187/24 188/5 189/18 192/24 193/2
means-plus-function [17] 48/20 136/4 136/5 136/8 137/10 138/16 141/13 143/12 177/13 179/18 183/1 186/25 187/5 187/24 189/18 192/24 193/2
means-plus-functioning [2] 186/24 188/5
meant [3] 43/2 82/5 92/18
measure [3] 23/9 89/2 126/22
measured [3] 23/4 89/19 90/1
measures [1] 23/12
meet [2] 74/15 96/4
mentioned [4] 52/1 87/20 89/9 188/22
mentioning [1] 52/1
meter [1] 158/10
micrometers [3] 89/19 90/1 90/14
microns [1] 90/24
microscope [29] 30/7 57/3 57/10 57/14 57/20 143/24 144/1 144/4 145/8 145/12 145/16 146/15 146/24 146/24 148/13 148/16 148/23 148/24 149/13 149/16 152/22 154/22 155/19 156/2 163/2 163/10 170/19 170/24 173/21
mid [1] 27/15
middle [1] 117/21
might [14] 8/16 10/12 13/10 19/1 28/5 33/24 56/22

M

might... [7] 84/3 126/3 159/23 170/8 173/7 174/20 187/9
Mike [1] 3/4
milliliters [1] 90/24
mind [7] 32/17 37/14 38/18 96/12 112/13 136/14 166/15
minimize [3] 113/8 113/19 116/2
minimized [1] 116/6
minimizing [3] 113/16 113/17 116/8
minimum [2] 80/1 129/16
minutes [7] 3/25 37/10 70/24 99/23 111/9 116/14 178/12
mirror [37] 6/18 6/18 6/19 16/18 16/22 21/9 24/12 24/16 24/22 24/25 25/10 27/1 27/1 57/12 57/24 63/22 63/25 65/16 65/17 67/10 69/22 69/23 69/25 70/1 70/2 70/3 70/11 70/19 74/6 74/8 74/13 139/17 145/8 149/1 170/25 175/16 183/10
mirrors [4] 6/2 64/2 163/23 186/19
mischaracterizing [1] 77/11
misleading [2] 148/15 150/12
misled [1] 168/21
misquote [1] 150/20
misunderstood [2] 177/15 177/17
mode [2] 89/15 89/25
modify [1] 145/1
months [2] 130/16 130/21
Mony [1] 3/4
moot [4] 191/12 191/14 191/18 191/24
more [33] 5/4 5/4 13/18 13/21 19/19 27/18 27/23 30/8 36/15 52/25 58/4 61/2 63/11 83/15 90/25 90/25 92/5 92/8 92/11 92/12 92/15 93/2 93/5 101/2 102/15 103/20 104/12 135/5 141/3 147/6 151/6 176/25 182/8
MORRIS [2] 2/8 3/8
most [10] 14/16 14/18 14/22 42/6 45/17 58/6 75/14 75/18 169/14 172/13
mostly [3] 11/17 17/5 17/25
move [3] 45/18 85/10 180/15
moving [1] 45/21
Mr [14] 3/13 3/13 35/1 36/5 38/12 38/16 55/12 67/3 67/7 75/20 143/1 180/5 181/12 182/1
Mr. [10] 3/13 44/8 57/8 58/15 88/2 89/9 147/20 150/22 164/21 176/20
Mr. Chen [8] 3/13 44/8 58/15 88/2 89/9 147/20 150/22 164/21
Mr. Chen's [1] 57/8
Mr. Khan [1] 176/20
Ms [1] 3/6
Ms. [1] 190/5
Ms. Upton [1] 190/5
much [17] 11/17 38/22 75/1 89/21 90/17 93/2 120/21 130/9 132/25 134/13 135/8 145/23 146/22 151/6 173/9 189/3 190/8
multi [3] 16/1 16/1 16/2
multi-claim [1] 16/1
multi-independent [1] 16/2
multi-patent [1] 16/1
multiple [5] 7/14 8/5 24/9 72/22 150/5
multiplexer [8] 25/14 37/6 39/17 40/21 50/10 50/10 157/6 164/5
multiplexers [1] 19/19
multiplexing [1] 5/12
multiplied [1] 126/22
multiplier [3] 4/22 4/25 6/9
must [4] 76/23 137/13 137/13 150/17
my [31] 3/1 3/2 8/15 9/1 32/2 34/5 34/8 37/14 38/4 45/3 45/11 50/15 53/14 54/3 55/7 93/16 95/17 96/12 102/3 102/4 118/19 125/16 129/23 155/22 172/22 179/15 179/17 181/3 186/22 190/7 194/11

N

N [1] 2/19
named [1] 80/7
namely [1] 141/3
narrow [3] 18/1 191/9 191/16
narrowing [1] 180/9
narrows [1] 26/14
near [2] 86/19 102/25
nearly [24] 79/25 80/2 82/17 82/21 82/23 83/9 83/11 83/14 84/18 84/19 86/8 86/9 86/12 86/23 92/5 92/9 92/11 92/15 92/24 99/12 104/12 105/24 122/24 132/15
necessarily [6] 26/21 42/23 55/23 81/15 124/22 155/25
necessary [2] 83/17 96/14
need [30] 21/13 23/10 31/17 31/24 31/24 32/23 58/3 71/2 74/19 74/19 74/21 80/25 82/14 82/24 93/13 102/14 124/15 134/2 137/8 145/3 145/4 159/6 162/15 162/16 178/8 182/16 182/24 192/15 192/21 193/21
needs [3] 165/4 173/16 175/14
negative [4] 30/10 53/7 53/9 53/16
neither [1] 93/14
Netgear [1] 181/10
never [4] 82/20 87/5 122/6 124/18
new [3] 20/4 20/6 181/13
newly [1] 123/19
news [1] 85/11
Newton [1] 87/22
next [10] 26/4 52/19 75/11 75/18 76/3 76/8 83/4 101/6 135/17 135/20
nice [2] 84/24 88/10
NICHOLS [2] 2/8 3/8
night [1] 88/20
nine [1] 17/2
no [101] 1/4 7/9 12/25 16/2 16/21 17/20 17/21 17/22 21/13 23/16 29/25 29/25 36/6 37/23 39/15 39/15 39/15 39/15 40/11 40/11 40/11 42/15 43/11 47/11 51/9 51/9 51/24 51/24 53/11 54/14 55/11 60/4 64/4 65/23 66/5 66/9 66/14 66/16 68/2 69/24 70/14 70/22 73/5 73/13 80/24 81/3 82/14 85/2 89/1 93/20 93/25 94/25 95/2 95/15 104/4 107/16 114/9 115/14 116/12 116/16 119/4 119/4 119/4 119/4 119/7 119/7 119/7 119/14 120/9 120/12 120/24 123/6 129/8 131/13 136/5 140/16 141/23 143/8 145/21 148/2 150/23 151/11 154/13 155/23 155/23 155/23 159/1 159/1 159/1 169/23 174/22 174/23 175/25 177/10 179/12 185/22 186/4 186/13 189/17 193/4 194/2
nobody's [1] 182/11
non [4] 18/4 60/9 110/20 123/24
non-after [1] 123/24
non-collimating [1] 110/20
non-infringement [1] 18/4
non-sequentially [1] 60/9
nonce [5] 140/19 142/15 142/17 177/22 186/24
noncovergent [1] 108/6
none [2] 62/23 121/3
nonlimiting [1] 7/3
nonsequential [2] 59/12 60/14
normally [1] 179/15
not [269]
Notably [2] 27/15 27/19
note [3] 71/11 125/16 129/7
notes [1] 194/11
nothing [11] 50/8 51/22 72/19 73/17 77/9 114/4 120/16 142/5 168/22 168/23 185/8
noticing [1] 55/8
notion [7] 30/21 110/25 126/24 129/8 129/10 129/18 150/19
November [1] 180/12
November 5 [1] 180/12
now [54] 4/3 14/16 18/8 20/4 25/11 27/7 30/5 40/10 42/18 47/24 52/19 54/9 55/15 59/20 71/21 72/4 72/16 74/1 74/19 84/18 92/6 96/3 103/23 105/14 105/21 117/7 117/10 120/25 122/9 125/19 137/20 137/21 140/12 146/12 151/4 151/8 156/12 159/9 159/13 162/5 175/11 177/6 178/11 179/5 179/14 179/17 180/17 182/6 186/1 186/5 187/3 187/9 191/18 192/23
number [8] 7/23 8/1 8/22 16/25 75/15 144/6 173/16 183/5
Number 45 [1] 183/5
numbers [2] 66/20 178/21
numerous [3] 79/5 132/23 149/18

O

O [1] 2/19
object [2] 89/18 145/11
objections [1] 191/13
objective [68] 21/2 30/7 57/4 57/10 57/14 57/20 57/24 67/9 72/6 100/11 100/18 116/24 121/23 143/24 144/1 144/4 145/13 145/16 146/6 146/16 146/24 146/24 148/10 148/13 148/17 148/20 148/23 148/25 149/13 149/16 149/17 151/16 151/20 152/2 152/4 152/16 152/22 154/12 154/17 154/20 154/23 155/4 155/19 156/2 159/17 159/19 160/5 160/6 160/12 160/14 160/16 160/23 161/1 161/18 161/23 161/25 162/3 163/2 163/7 163/11 164/13 169/12 169/15 170/20 170/24 171/4 173/22 174/9
obvious [1] 56/25
obviously [2] 12/13 98/3
occur [3] 36/3 73/6 73/22
occurred [1] 54/12
occurring [3] 55/6 69/8 161/24
occurs [3] 148/22 154/17 161/22
October [2] 180/11 191/7
October 8 [2] 180/11 191/7
off [17] 5/14 20/25 21/8 22/11 23/21 24/6 24/11 37/14 41/18 57/12 57/15 120/5 144/20 158/25 166/25 181/22 190/24
offense [1] 12/25
offer [1] 71/18
offered [1] 142/22
office [7] 3/1 89/24 99/3 101/12 122/14 124/8 131/10
Official [1] 194/14
often [3] 4/3 4/12 4/19
oh [31] 8/19 14/18 22/23 36/4 46/8 46/15 53/13 53/18 54/23 54/23 56/8 60/19 65/23 77/13 89/5 93/18 104/19 130/19 132/12 149/25 156/22 156/23 162/24 167/19 172/24 181/5 181/17 184/9 186/8 193/10 193/10
okay [182] 3/15 3/17 8/19 8/25 10/20 11/7 13/8

O

okay... [175] 13/15 13/24 14/12 14/18 16/11 17/13 17/14 18/5 22/12 23/7 23/18 24/24 29/5 29/19 31/19 33/20 34/1 34/14 34/19 35/3 35/6 35/19 35/20 36/7 36/11 36/13 37/23 38/2 38/3 38/6 41/17 44/1 44/10 45/10 45/20 46/25 48/4 49/5 50/1 51/16 52/19 52/22 53/4 53/18 54/9 55/10 56/8 59/20 60/1 61/15 63/4 64/7 65/19 65/25 69/15 70/9 75/11 75/20 75/24 76/2 77/7 77/8 81/19 81/25 84/10 84/14 84/21 85/2 85/10 86/1 87/4 88/8 90/19 94/18 94/19 96/17 96/21 98/13 99/25 100/1 100/4 100/6 100/12 101/18 101/25 102/8 102/23 103/4 103/13 103/19 104/5 104/6 106/11 106/15 106/22 107/4 107/14 107/25 108/21 109/6 109/16 109/21 110/12 112/2 114/18 118/15 118/20 120/25 123/17 124/25 125/14 126/14 133/9 135/22 137/16 138/18 141/10 142/3 142/14 146/5 146/17 147/16 148/19 150/9 150/13 150/16 150/18 150/25 151/8 152/10 153/10 154/7 157/7 157/19 159/2 159/13 160/9 161/7 161/20 162/5 164/6 164/20 166/18 166/19 167/19 169/21 170/10 170/12 170/15 172/11 174/23 175/7 175/11 178/8 178/10 178/22 179/5 180/2 181/5 182/6 182/23 182/24 184/21 185/23 187/2 189/1 189/21 190/3 191/4 191/19 191/22 193/5 193/15 194/1 194/4
old [1] 28/7
old-fashioned [1] 28/7
OMAR [3] 2/3 3/2 3/19
omitted [1] 150/23
once [2] 107/24 131/22
one [99] 4/20 5/8 6/23 7/10 7/13 9/10 9/19 12/8 13/10 13/18 13/21 14/8 15/19 15/19 16/8 17/15 23/14 24/1 24/2 24/4 24/8 25/6 27/7 32/21 33/18 34/6 34/24 34/25 35/10 37/9 37/17 40/5 40/8 40/10 41/15 41/15 45/17 47/21 48/25 49/11 49/15 49/24 50/1 51/18 55/21 56/13 58/3 60/14 62/20 63/11 63/13 66/24 68/1 68/16 69/11 71/4 71/19 74/5 74/8 80/6 82/24 85/5 87/23 88/16 88/22 92/10 101/3 101/6 103/4 105/21 122/20 122/25 123/1 123/3 123/19 127/12 131/13 131/21 134/6 135/23 140/24 141/3 151/3 152/1 152/6 176/16 176/24 176/25 177/8 183/7 183/18 183/19 184/7 184/11 184/18 185/7 185/8 186/3 187/10
ones [3] 88/17 142/1 188/13
only [43] 12/8 15/6 22/21 23/14 23/14 24/1 24/2 24/4 24/8 30/23 31/24 42/13 60/6 61/5 68/12 68/14 72/12 73/16 75/15 88/12 96/20 106/2 114/25 118/17 133/17 141/18 149/7 149/8 150/1 151/9 163/7 165/8 165/9 165/9 165/13 168/20 178/11 178/19 179/3 179/8 183/22 185/6 187/5
open [2] 5/23 83/5
opened [1] 45/15
operates [1] 142/18
operation [1] 4/5
opinions [1] 190/7
opportunity [2] 185/18 192/22
opposed [3] 77/17 82/7 109/13
opposite [2] 37/10 43/19
optic [8] 25/24 57/18 140/2 156/13 156/18 160/19 168/9 168/11
optical [144] 6/1 6/4 20/13 20/16 20/19 20/21 21/13 21/14 25/12 25/19 25/25 30/6 30/10 30/11 31/1 34/9 34/11 40/23 48/19 48/21 48/22 48/25 49/1 49/2 49/2 50/6 50/11 51/22 52/5 52/16 56/20 56/21 57/7 57/10 57/21 58/15 58/16 63/16 63/20 63/24 64/3 65/5 65/10 65/11 65/12 65/22 67/6 67/17 67/24 68/8 68/9 70/12 70/12 70/16 70/17 70/19 75/17 75/25 79/13 79/14 80/8 80/10 88/3 89/16 89/25 94/11 94/16 94/18 94/20 102/18 121/13 126/11 135/20 135/24 135/25 136/2 136/10 136/16 136/17 136/18 136/21 136/22 136/23 136/24 137/1 137/4 137/19 137/23 138/23 139/1 139/3 139/9 139/15 140/2 140/17 140/17 140/24 141/3 141/9 141/19 141/21 142/11 142/23 143/7 143/9 144/1 144/11 148/10 149/19 149/20 152/19 152/21 153/23 155/16 157/8 157/9 165/6 166/8 169/17 175/14 175/14 175/16 175/18 177/1 177/1 177/2 177/3 177/6 177/22 179/9 179/17 183/1 183/10 186/15 186/16 186/19 187/11 189/5 192/9 192/12 192/13 192/13 192/14 193/3
optically [1] 164/7
optician [1] 94/13
optics [21] 76/12 82/3 87/17 87/22 87/23 94/11 94/14 95/13 98/25 106/25 129/15 129/20 131/3 131/17 132/8 139/23 139/24 140/14 143/3 143/4 163/20
optimizer [1] 22/20
optional [3] 172/1 173/24 174/2
oral [1] 151/4
order [15] 29/1 30/13 30/18 31/2 31/6 55/19 56/12 58/19 73/1 90/14 90/24 162/8 162/15 180/10 191/22
ordered [2] 31/5 59/19
ordering [3] 28/16 29/25 63/15
ordinary [14] 71/23 71/25 72/2 72/5 72/11 76/18 100/17 116/23 133/5 133/13 134/1 135/15 187/10 193/6
organized [1] 64/2
original [2] 33/3 111/3
originally [2] 116/13 123/14
originate [1] 76/24
originating [1] 93/9
other [82] 14/7 17/6 17/14 22/20 24/6 24/12 26/8 26/25 27/2 28/24 29/4 31/14 31/15 35/20 40/24 41/2 48/7 49/5 49/9 51/4 51/7 60/7 63/17 64/19 64/23 65/14 71/6 75/10 82/3 87/17 87/20 88/17 93/13 94/21 94/23 98/19 99/5 100/19 101/20 105/16 106/4 106/25 108/18 111/7 117/1 117/16 119/20 120/24 121/4 122/19 124/16 127/19 129/23 136/18 136/20 139/18 140/10 140/23 141/6 141/14 141/20 141/21 141/25 142/4 143/9 146/23 155/3 155/22 163/20 172/25 179/6 179/19 179/20 183/19 187/9 188/8 188/13 191/5 192/9 192/25 193/1 193/22
ought [6] 32/18 40/13 74/8 111/10 112/19 112/19
our [51] 3/3 15/9 17/2 17/16 17/24 20/8 36/20 48/10 49/10 66/24 69/2 69/19 69/21 70/10 82/1 85/22 87/3 87/9 87/14 87/17 87/18 88/5 90/7 91/14 91/15 93/8 100/2 100/10 101/11 103/3 106/13 106/19 113/9 117/22 120/3 120/20 121/12 122/5 124/4 124/17 124/17 124/21 129/4 129/5 136/21 148/5 166/2 169/17 172/22 176/9 186/10
ours [1] 99/8
out [73] 13/3 13/4 14/8 17/10 17/11 18/3 18/3 18/15 18/17 22/19 24/14 24/19 25/25 27/7 28/10 28/12 30/23 31/14 32/24 38/23 42/15 42/15 44/17 46/16 54/11 54/18 55/4 56/23 59/11 60/23 62/7 62/7 62/8 67/5 75/10 83/5 83/20 85/22 86/3 86/18 88/9 91/1 92/20 103/7 103/7 104/19 114/14 116/15 116/18 117/25 118/1 118/16 119/13 119/17 121/16 127/3 129/6 132/6 133/23 137/8 138/9 138/9 148/15 171/12 172/21 177/5 177/5 177/10 178/9 179/24 190/20 190/22 191/5
outcome [1] 12/9
outlet [2] 29/24 29/25
output [2] 25/12 168/10
outputting [1] 165/5
outset [3] 108/15 108/22 130/23
outside [2] 169/9 169/11
over [8] 17/12 42/10 85/6 122/16 124/23 134/20 144/6 151/5
overall [4] 9/6 91/18 170/16 170/17
overcome [2] 143/12 143/13
overly [2] 17/25 18/1
overstate [1] 77/10
overview [3] 4/11 18/12 18/14
own [10] 20/15 27/16 66/21 80/4 80/9 90/5 90/14 91/4 91/4 137/6
owner [1] 99/1

P

P [1] 2/19
p.m [3] 1/10 2/22 194/5
pack [1] 35/20
page [18] 48/14 48/16 50/13 72/15 72/18 120/15 120/17 147/13 147/14 148/7 150/21 151/1 151/1 167/8 170/7 174/25 190/4 190/12
Page 1313 [1] 72/15
Page 14 [1] 48/16
Page 15 [1] 48/14
Page 25 [1] 50/13
Page 37 [1] 174/25
Page 4 [2] 120/15 120/17
Page 56 [4] 147/14 150/21 151/1 190/12
Page 70 [3] 147/13 148/7 151/1
Pages [1] 85/20
parallel [50] 79/25 80/3 80/14 80/15 81/16 83/23 87/8 87/15 91/25 92/5 92/9 92/11 92/15 92/24 93/13 97/7 98/7 98/18 99/5 100/19 100/22 101/20 104/20 104/21 104/22 105/16 106/4 107/3 107/9 107/21 108/3 108/5 109/13 111/19 111/21 112/6 112/9 112/24 114/21 116/25 117/7 118/21 119/20 126/4 126/12 131/5 132/15 133/3 133/4 134/8
parallel' [1] 133/6
parallelism [1]

P

parallelism... [1] 81/15
parallelization [7] 76/22 78/19 79/4 80/16 82/13 87/4 126/2
parallelizing [1] 109/15
parent [2] 47/18 66/12
parents [1] 181/3
parse [1] 18/3
part [31] 16/23 40/17 55/8 67/5 67/6 88/18 91/9 94/16 94/17 97/24 98/23 108/24 118/10 118/11 122/16 123/8 123/13 123/23 124/10 124/13 124/13 128/5 129/5 164/17 164/19 165/19 165/21 169/8 171/21 187/6 187/14
particle [16] 88/5 137/25 143/20 152/25 153/24 154/7 154/8 154/8 154/9 154/16 155/2 155/5 155/9 155/17 156/7 171/2
particles [3] 19/10 19/13 21/24
particular [8] 15/14 17/17 20/12 21/6 23/16 68/25 72/12 188/7
particularly [3] 16/20 18/2 26/11
particulars [2] 75/10 193/21
parties [3] 76/14 165/2 191/23
parties' [3] 28/10 91/19 135/20
partner [1] 113/5
pass [3] 26/10 26/12 27/3
passage [9] 51/21 68/16 146/23 147/23 148/21 149/10 150/11 150/16 165/17
passages [4] 47/3 49/22 146/22 149/9
passed [1] 57/17
passes [1] 149/5
passing [2] 4/6 6/1
past [1] 86/22
patent [108] 7/25 8/8 8/15 8/20 10/21 11/12 13/16 13/19 13/22 14/6 15/1 15/4 15/21 16/1 16/8 16/9 16/17 16/25 23/22 27/8 27/9 27/11 27/11 27/19 28/19 33/9 33/17 37/1 47/10 47/18 49/16 58/5 63/20 66/8 66/12 66/21 72/14 78/10 79/6 80/6 80/19 80/21 82/10 82/17 86/6 89/9 89/23 90/22 91/8 93/17 93/19 96/4 99/1 99/2 100/7 101/12 102/17 103/5 103/9 103/14 103/25 105/13 122/19 123/1 123/21 124/8 125/20 127/14 127/18 127/20 127/22 128/3 128/5 128/14 131/10 131/20 131/22 133/19 134/15 135/2 137/11 137/21 143/18 151/15 152/12 153/11 153/12 153/13 153/14 156/11 160/2 164/22 167/8 167/18 169/2 170/7 170/11 172/6 172/7 172/16 173/10 173/24 174/15 175/12 178/25 184/24 184/24 192/4
patentee [1] 168/4
patents [25] 5/8 13/16 19/9 20/10 20/15 20/23 27/16 27/21 68/7 74/25 76/13 78/8 103/4 122/11 122/20 122/21 122/25 123/2 123/4 123/15 123/15 123/20 130/5 130/6 131/11
path [22] 20/20 20/21 25/19 50/6 50/11 51/23 52/16 56/20 56/21 57/7 57/10 57/21 58/15 58/16 63/16 63/20 63/24 64/3 67/6 67/17 67/20 67/24
paths [1] 40/23
pattern [4] 5/15 6/12 6/16 72/22
pausing [1] 115/3
pay [1] 173/9
peel [1] 6/10
peeled [1] 5/14
people [3] 98/14 109/24 123/10
percent [1] 83/7
perfect [16] 52/14 76/21 78/19 79/4 80/16 82/2 82/13 84/2 87/4 88/18 105/4 105/5 126/1 131/5 131/9 159/25
perfectly [7] 15/18 79/20 80/15 81/16 100/22 126/4 126/12
perform [7] 143/8 145/2 149/8 165/10 168/9 183/10 187/12
performed [1] 152/16
performing [1] 146/25
performs [5] 136/12 166/3 169/19 183/18 183/19
perhaps [2] 60/15 135/12
period [1] 130/20
permits [1] 76/20
permitted [1] 83/12
person [10] 72/1 72/4 72/10 94/18 100/17 116/23 129/18 132/25 133/5 164/21
persons [1] 94/20
perspective [3] 17/3 17/25 122/5
persuaded [3] 29/6 91/2 178/23
persuasive [1] 142/22
Phillips [3] 60/24 71/24 72/10
Phillips' [1] 75/4
photo [4] 4/22 4/25 6/8 6/9
photodiode [1] 5/5
phrase [1] 119/9
physical [6] 80/17 80/22 87/13 114/2 128/11 141/3
pick [7] 16/12 135/18 180/21 185/25 186/1 186/1 186/2
picking [2] 102/2 108/17
picture [1] 5/15
piece [3] 52/24 53/5 149/17
pieces [1] 136/13
pipe [2] 51/13 52/2
PIVOVAR [3] 2/12 3/11 3/13
place [1] 76/11
places [1] 49/9
plain [5] 76/18 133/12 133/25 135/14 193/6
plaintiff [18] 1/4 2/5 2/25 3/17 3/20 72/16 72/23 73/15 85/23 87/2 89/23 93/2 100/3 103/16 106/17 118/11 123/15 178/23
plaintiff's [5] 74/22 89/11 90/14 104/6 117/11
plastic [2] 22/24 149/17
plate [11] 25/2 25/10 53/6 54/5 54/8 57/25 67/2 67/10 67/14 145/9 149/2
play [1] 83/20
playing [1] 105/20
please [9] 2/23 12/10 19/5 38/13 71/1 95/11 125/2 148/5 148/6
plus [20] 48/20 136/4 136/5 136/8 137/10 138/16 141/13 143/12 163/20 177/13 179/18 183/1 186/24 186/25 187/5 187/24 188/5 189/18 192/24 193/2
point [96] 10/1 11/5 16/12 27/7 30/23 32/5 32/8 33/18 34/5 34/9 35/12 36/18 37/15 43/23 46/16 47/6 49/9 51/21 54/3 58/25 59/3 60/7 61/16 63/11 64/6 64/7 66/24 67/1 67/5 67/19 69/14 76/24 86/18 87/24 88/8 88/12 88/15 88/21 89/2 89/4 89/5 89/15 89/19 89/20 90/2 90/4 90/9 90/15 90/16 90/20 91/1 91/3 92/19 93/9 98/4 98/18 100/25 102/10 105/3 109/7 113/10 114/14 116/18 118/1 118/8 118/9 118/18 118/19 119/17 119/25 120/8 120/23 125/3 126/25 127/1 127/2 127/5 127/8 128/21 130/1 130/22 132/18 133/16 141/7 141/19 141/21 146/21 151/18 159/17 165/25 169/13 169/15 171/3 177/22 187/17 189/16
pointed [15] 35/7 47/3 49/22 54/11 54/18 55/4 72/16 85/22 86/3 104/19 116/15 150/20 151/1 160/10 174/15
pointer [1] 53/14
pointing [17] 66/4 66/7 106/3 114/3 117/11 118/3 118/10 118/11 121/16 142/11 146/10 146/12 151/9 151/12 159/10 172/14 172/19
points [6] 64/11 90/8 90/10 91/18 93/12 148/8
portion [8] 17/5 85/21 117/10 121/17 122/1 129/24 130/14 131/1
portions [4] 78/14 102/2 108/17 108/18
POSA [3] 94/2 94/2 96/5
POSA's [1] 117/23
position [12] 32/7 48/5 62/10 66/24 69/2 110/22 124/17 124/17 166/2 169/17 176/9 186/10
positional [1] 64/20
positions [2] 48/2 110/2
positive [4] 30/11 53/8 53/9 53/16
possibility [1] 152/21
possible [19] 82/6 82/13 87/5 112/5 112/10 112/15 113/1 114/23 115/9 115/12 115/18 115/22 118/22 129/16 135/1 169/6 169/16 178/19 179/3
possibly [1] 134/7
poster [2] 98/23 100/1
potential [1] 39/8
potentially [1] 70/18
power [2] 30/10 30/11
practicable [1] 82/7
practical [8] 79/16 97/19 100/20 100/21 100/23 101/3 101/21 106/5
practically [1] 87/8
practice [5] 5/19 81/17 81/19 82/8 134/7
precedes [1] 160/25
precisely [2] 119/3 177/24
precision [2] 95/21 110/13
preclude [1] 16/22
precluded [1] 84/7
precludes [2] 129/19 175/20
precluding [1] 110/4
preferred [51] 7/9 7/10 7/12 7/14 7/23 8/1 8/5 8/7 8/12 8/15 8/18 8/21 9/3 9/8 9/13 9/21 10/2 10/13 10/13 10/16 10/22 10/25 11/2 11/8 11/9 11/11 11/13 11/17 11/22 11/23 11/25 12/1 12/5 12/7 12/17 12/18 12/22 12/24 13/6 15/7 15/11 16/4 30/22 47/10 47/15 47/15 60/12 60/16 60/18 60/23 66/10
presence [1] 144/17
present [7] 4/15 157/10 157/12 158/16 158/24 162/8 175/8
presentation [1] 58/21
presented [1] 43/15
press [2] 40/13 151/24
pressure [2] 28/3 28/4
presumably [1] 110/21
presumption [3] 28/22 138/4 143/11
pretty [16] 8/20 9/6 12/15 32/14 37/15 39/13 42/2 58/7 59/16 106/8 120/21 121/5 135/8 174/20 178/13 189/3
previous [1] 119/20
previously [1] 117/23

P

principle [2] 14/3 106/10
prior [8] 4/14 4/21 62/18 89/13 89/14 89/24 101/12 130/2
prisms [1] 139/19
probably [4] 85/12 85/15 106/8 179/14
probative [3] 32/22 61/2 135/6
problem [11] 5/2 5/6 18/18 63/6 65/2 65/4 71/15 73/15 93/16 171/17 179/5
problematic [1] 92/8
problems [1] 5/8
proceed [1] 180/3
proceeding [1] 194/12
proceedings [3] 2/21 7/1 194/5
processing [1] 164/7
product [5] 27/13 27/14 27/14 81/21 84/7
products [2] 5/17 76/15
projected [1] 93/13
projecting [1] 88/10
pronounce [1] 126/16
proposal [4] 105/14 105/23 106/2 111/13
proposals [1] 124/16
propose [1] 76/21
proposed [7] 18/23 69/19 70/10 91/19 92/7 104/7 129/5
proposes [2] 76/22 78/20
proposition [1] 28/18
prosecuted [2] 122/16 130/18
prove [1] 187/20
provides [3] 72/6 83/15 144/1
providing [1] 177/3
proxy [1] 128/19
PTAB [2] 123/11 123/24
pull [4] 43/14 43/22 44/8 65/8
purposes [8] 11/24 12/2 12/16 12/19 15/9 26/11 27/17 76/13
pursue [1] 188/4
pursued [1] 188/17
put [21] 9/25 14/17 20/13 32/18 45/1 69/5 76/10 85/17 93/25 103/1 105/18 108/11 119/2 119/9 128/4 135/3 149/22 151/7 156/10 156/10 170/3
puts [1] 79/9
putting [2] 39/8 45/16

Q

qualified [1] 163/25
qualify [1] 40/5
quantify [1] 127/7
question [21] 9/1 28/13 40/7 64/9 64/12 67/4 72/2 83/19 102/3 102/4 104/16 104/23 113/16 115/23 130/8 135/1 135/10 138/11 179/8 183/17 186/22
questions [1] 106/25
quick [2] 63/13 64/11
quickly [3] 32/9 137/16 180/11
quite [4] 18/2 58/9 130/7 170/14
quote [4] 72/10 137/23 150/20 174/16
quoting [2] 122/9 170/23

R

R [3] 2/19 194/13 194/14
radially [1] 30/11
raises [1] 133/14
range [3] 26/7 26/14 27/3
rather [5] 4/16 4/19 100/12 117/17 137/9
ray [8] 52/6 80/1 87/7 91/16 98/18 116/3 116/7 129/16
rays [41] 35/24 76/23 80/1 80/3 80/14 81/16 87/15 88/16 91/23 91/24 92/5 92/24 93/9 93/14 97/4 98/3 98/4 98/12 99/5 100/19 101/20 104/3 104/14 104/22 105/16 106/4 106/7 111/19 111/20 112/6 112/8 112/24 114/21 116/25 118/21 121/9 127/1 131/7 131/8 134/8 134/12
reach [2] 113/23 133/16
reachable [1] 109/23
reaches [1] 34/3
read [26] 11/12 14/8 14/8 15/20 15/21 16/7 16/8 35/21 35/22 37/16 60/25 66/10 72/11 73/12 73/20 75/5 92/25 92/25 93/3 105/6 117/2 122/3 128/7 142/16 143/2 158/22
readily [3] 20/17 32/5 35/17
reading [9] 38/20 43/5 60/23 93/17 103/18 106/2 128/11 172/3 172/5
reads [2] 40/17 137/23
ready [1] 182/13
real [15] 10/15 12/14 63/13 78/23 79/17 80/16 81/20 82/2 82/6 82/12 84/5 140/13 145/18 167/10 169/10
real-world [1] 169/10
reality [2] 22/21 82/12
realizable [1] 81/16
really [38] 5/7 14/1 32/9 32/20 32/22 32/23 41/24 60/21 75/4 75/4 77/22 83/17 85/6 86/2 86/14 91/16 92/21 95/1 96/5 99/11 105/10 107/21 111/1 130/8 135/1 136/7 136/9 140/13 140/14 146/2 170/7 174/12 177/25 182/14 185/25 192/3 193/23 193/24
reason [11] 21/21 21/23 22/6 30/23 35/11 39/1 47/24 48/4 117/13 179/15 192/20
reasonable [3] 109/24 174/20 190/18
reasons [1] 55/17
recall [2] 74/5 128/13
receive [1] 177/2
received [9] 26/5 26/16 27/16 29/24 29/25 35/15 69/6 164/8 164/9
recess [2] 70/25 178/16
recitation [1] 169/2
recite [1] 145/4
reciting [1] 183/9
recognized [3] 5/2 122/5 134/12
record [21] 41/23 41/23 85/19 92/22 96/14 97/12 97/18 97/25 98/21 98/22 98/24 99/7 101/16 102/2 105/11 107/2 107/13 114/5 118/5 153/10 158/22
red [3] 26/9 26/13 26/14
red-colored [1] 26/9
reduced [1] 92/16
refer [15] 28/20 28/25 29/21 29/23 31/7 48/22 56/12 56/13 77/24 86/20 90/2 94/22 96/20 126/11 143/3
reference [7] 48/12 48/18 62/18 65/20 82/16 89/25 129/15
referenced [1] 43/20
references [4] 76/13 79/5 82/3 129/10
referencing [1] 56/25
referred [3] 59/5 128/7 173/14
referring [19] 34/1 41/6 53/20 55/1 58/18 59/23 60/21 62/15 81/22 85/24 97/22 109/13 128/10 137/20 150/11 152/16 153/11 153/12 170/6
refers [6] 8/4 31/4 46/4 86/7 97/18 126/2
reflect [3] 51/2 51/7 158/22
reflected [4] 23/21 26/24 76/24 166/25
reflects [1] 26/7
refracts [2] 140/25 140/25
regard [1] 193/11
regardless [1] 169/12
regards [1] 37/4
rejection [1] 116/21
related [1] 76/1
relates [2] 146/15 146/19
relation [1] 64/3
relational [1] 31/12
relative [2] 92/12 113/20
relay [11] 16/15 16/15 16/19 16/23 21/13 21/14 26/25 65/22 70/16 70/19 167/1
relayed [2] 20/25 21/8
relays [1] 65/5
released [1] 27/15
relevant [9] 15/14 26/11 27/17 40/17 52/18 53/22 55/17 56/19 57/2
reliance [1] 74/22
relies [1] 103/16
rely [3] 89/6 130/9 142/9
relying [5] 46/17 49/8 81/2 82/6 150/12
remaining [2] 179/9 189/4
remember [4] 38/6 58/15 108/10 182/9
remembered [1] 38/1
render [2] 92/4 110/19
rendered [1] 110/25
rendering [7] 111/18 111/20 112/6 112/8 112/23 114/21 118/20
repeat [1] 190/13
repeatedly [1] 28/24
report [1] 191/13
reporter [6] 12/15 70/24 108/13 183/13 194/8 194/14
reports [2] 180/12 191/7
represented [1] 93/4
require [8] 28/15 55/24 72/24 73/21 79/4 87/10 87/18 121/24
required [6] 72/21 74/12 78/19 96/4 96/11 165/14
requirement [3] 16/3 31/13 64/4
requires [6] 68/6 76/21 84/2 87/15 95/20 174/8
resolve [6] 63/8 77/1 78/4 78/18 84/13 191/12
resolved [2] 76/6 85/7
resolves [1] 63/5
resort [1] 77/2
respect [12] 45/4 46/16 58/10 58/14 64/19 65/13 67/24 88/2 139/6 143/1 156/6 185/7
respective [1] 48/2
respond [3] 39/18 185/18 185/20
response [1] 122/13
responsible [3] 57/21 164/22 175/23
rest [4] 3/24 43/6 44/22 180/6
result [2] 17/24 132/1
resulting [1] 16/23
rethink [1] 192/22
REUBEN [3] 2/11 3/9 18/20
reveals [1] 143/10
review [1] 96/14
revolutionary [1] 27/16
RICHARDS [1] 1/19
right [352]
right-hand [2] 19/22 25/14
risk [2] 133/21 181/6
rivet [1] 139/8
road [1] 112/21
room [2] 4/20 4/20
ROSALYND [1] 2/13
Rozzie [1] 3/12
RPR [1] 194/14
rule [3] 72/9 141/6 191/21
ruled [2] 182/25 192/23
ruling [2] 179/18 183/16
run [1] 94/21
running [1] 106/24
runs [2] 26/1 26/2

S

s [2] 2/19 194/13
said [57] 4/12 8/11 8/12 9/17 10/1 12/15 17/20 25/9

S

said... [49] 58/4 60/16 77/9 77/12 81/18 96/2 105/8 107/16 108/11 108/15 108/20 108/21 108/21 111/9 111/14 115/8 117/6 117/15 117/16 117/24 119/5 119/19 121/1 121/7 122/5 124/3 124/9 125/9 125/11 130/19 133/4 136/16 139/5 139/7 143/2 150/14 150/25 156/20 158/23 158/23 165/12 166/1 172/1 175/15 177/12 177/13 187/1 188/10 192/23
same [49] 17/19 35/12 35/13 36/3 51/8 51/20 52/10 53/21 54/5 54/12 67/16 67/17 67/20 67/21 69/1 69/9 69/13 69/14 69/23 73/8 78/10 78/15 78/21 79/22 82/11 83/13 83/14 84/15 107/15 107/20 107/24 122/18 122/21 122/22 122/23 124/22 125/8 125/9 125/11 132/19 132/22 135/5 145/12 148/16 148/16 148/22 149/13 149/16 150/21
satisfactory [1] 132/14
saw [1] 45/22
say [98] 11/22 13/5 13/17 19/8 32/20 35/23 37/5 37/5 41/3 42/8 47/25 48/1 48/4 49/12 52/22 62/17 63/1 70/21 77/6 77/12 77/22 78/20 78/21 79/5 79/20 80/15 80/19 80/21 81/8 83/21 83/22 86/12 87/4 89/13 89/18 90/3 92/24 96/9 96/12 96/13 99/7 100/9 100/16 104/11 104/12 104/12 105/3 105/5 105/15 105/17 109/3 110/6 110/21 113/13 114/5 115/16 115/19 116/22 119/14 120/25 124/10 125/10 125/13 127/24 131/3 131/4 131/13 131/16 132/23 134/4 137/9 141/11 141/24 144/11 144/11 144/18 146/14 148/9 149/20 150/6 152/1 152/4 157/15 169/22 174/2 176/1 179/11 182/12 182/14 182/23 184/2 184/22 187/21 187/24 188/16 189/6 189/14 190/8
saying [76] 8/4 11/8 11/10 13/1 14/24 15/12 35/9 38/9 39/15 41/9 41/14 44/25 45/5 45/15 46/8 52/9 54/6 58/11 60/22 62/16 62/19 65/25 68/11 77/15 84/10 84/15 85/5 87/6 89/24 92/4 92/11 95/23 99/3 99/13 99/15 100/4 101/10 104/19 107/15 111/10 112/18 115/8 116/1 117/24 118/12 118/16 120/1 121/1 121/2 124/2 128/19 131/2 132/11 144/14 144/25 150/22 152/6 155/23 156/9 159/3 160/23 161/3 163/6 163/8 168/21 169/6 170/5 171/8 182/16 182/17 182/24 184/12 185/2 188/1 191/23 193/16
says [53] 7/16 12/4 12/15 12/21 13/10 43/8 63/20 73/18 79/17 79/21 80/7 80/13 81/14 86/24 90/16 90/22 92/6 92/8 99/4 102/16 104/13 106/4 109/18 109/19 110/11 114/5 116/16 117/22 118/2 125/17 128/9 129/16 132/8 132/10 132/12 132/19 132/22 139/10 139/14 140/24 143/25 148/21 149/11 150/4 154/22 160/8 164/4 168/8 168/12 172/17 174/24 176/1 184/2
scatter [21] 4/9 19/14 19/16 21/5 21/10 21/15 23/20 23/22 23/24 25/3 150/3 161/13 165/16 165/16 167/1 168/7 168/7 169/11 171/22 183/19 183/20
scattered [73] 19/15 20/3 21/7 21/7 21/8 21/12 25/8 137/24 143/19 145/10 149/11 149/15 150/3 153/24 154/16 154/19 154/23 155/17 156/6 159/14 159/15 159/23 159/25 160/3 160/4 160/6 160/11 160/13 160/22 161/4 161/24 161/25 162/1 162/2 162/7 164/7 164/12 165/3 165/3 165/5 165/10 165/13 165/14 166/9 166/10 166/12 166/19 166/20 166/21 166/21 166/25 167/2 167/3 168/10 168/11 168/22 168/24 169/5 171/1 171/5 171/20 173/21 174/20 175/24 175/25 176/15 183/24 183/25 184/2 184/7 184/16 184/16 184/17
scattering [5] 23/20 149/12 154/17 155/4 161/22
scatters [5] 21/4 79/1 149/6 166/20 167/25
schedule [1] 180/7
scheme [1] 5/12
science [2] 17/17 50/20
scientists [1] 77/17
scope [2] 27/22 77/20
screen [2] 33/23 76/7
search [2] 8/14 8/16
seat [2] 102/8 178/17
seated [2] 2/23 71/1
second [146] 3/16 17/5 27/2 27/4 28/9 28/14 28/20 28/25 29/5 29/10 29/21 29/22 29/24 29/25 30/10 30/12 30/17 31/3 31/7 31/11 33/14 33/22 34/2 34/22 34/24 35/7 35/10 35/15 35/19 35/22 35/24 35/25 38/5 38/13 42/14 46/4 46/6 46/7 46/13 46/21 46/21 48/22 48/25 49/2 49/7 49/17 49/24 50/4 50/8 50/13 50/14 51/17 51/20 52/11 52/14 54/1 54/4 54/6 54/9 54/10 54/15 54/17 54/22 54/25 55/2 55/8 55/16 55/18 55/23 56/2 56/5 56/7 56/12 56/15 58/8 58/16 59/12 59/14 59/17 59/23 59/23 59/24 59/24 60/2 60/9 60/13 61/6 61/9 61/11 61/13 61/17 64/14 64/20 64/23 65/7 65/12 67/1 67/16 67/25 68/1 68/8 68/9 68/11 68/18 69/7 69/7 69/12 69/17 70/7 71/10 71/12 71/13 71/16 72/25 73/11 73/12 73/16 73/19 73/21 73/23 73/25 74/3 74/24 76/23 79/22 87/10 104/20 118/10 118/11 124/5 125/2 130/22 131/21 133/8 136/11 145/24 147/5 147/8 165/4 169/25 176/17 176/19 193/9 193/10 193/11 193/20
see [52] 5/19 6/20 17/8 19/22 20/15 22/21 23/1 23/9 25/14 27/20 41/21 44/22 45/14 46/8 53/8 53/14 53/17 53/18 57/2 76/19 78/7 78/10 79/22 80/2 85/12 88/9 88/15 89/12 98/4 100/9 105/11 109/10 116/20 118/2 130/7 137/10 151/5 151/13 167/7 167/13 167/13 172/21 173/6 174/24 175/2 177/17 179/4 179/13 184/9 187/23 188/25 189/14
see-through [2] 22/21 23/1
seeing [1] 22/20
seek [1] 79/15
seeking [2] 17/7 176/25
seem [4] 18/2 120/6 131/2 187/2
seems [16] 32/17 32/25 56/24 58/7 75/3 84/1 84/2 99/17 134/23 147/20 148/1 151/14 167/4 174/20 187/19 187/23
seen [2] 76/13 128/25
self [1] 130/3
self-serving [1] 130/3
semiconductor [9] 26/20 26/21 26/23 27/4 53/25 54/1 54/1 70/13 163/21
send [1] 27/1
sense [4] 52/13 135/2 178/4 185/19
sensitive [1] 5/4
sensitivity [1] 6/6
sent [1] 19/18
sentence [2] 101/6 134/23
separate [11] 14/1 14/2 19/17 19/21 19/24 19/25 21/14 168/25 169/1 169/2 173/20
separates [1] 30/16
separating [1] 50/7
separation [1] 55/1
September [6] 180/20 181/9 184/20 189/4 189/25 191/6
September 17 [2] 180/20 191/6
September 17th [1] 184/20
September 5th [1] 181/9
sequence [18] 29/23 30/1 30/13 30/17 31/2 31/6 31/7 49/16 55/19 58/11 58/12 58/18 59/14 62/3 63/3 65/13 72/25 73/5
sequencing [5] 28/15 29/1 55/24 56/12 68/6
sequential [24] 29/11 31/11 32/21 35/22 36/2 43/12 43/24 49/7 59/19 60/3 60/15 61/6 61/9 61/11 61/14 64/15 64/23 67/21 68/24 69/2 72/21 73/14 74/9 74/11
sequentially [14] 29/5 31/5 35/25 43/2 43/5 45/5 46/22 46/22 55/16 58/8 60/9 61/18 65/7 73/22
series [1] 37/8
serious [1] 133/14
served [1] 44/6
serving [1] 130/3
set [19] 28/9 28/10 28/15 31/14 40/2 40/18 43/9 43/13 43/25 55/14 56/13 62/2 62/2 63/2 63/21 63/24 166/3 168/18 190/16
sets [1] 17/2
Seventy [1] 148/6
Seventy-five [1] 148/6
shame [1] 190/8
shape [2] 53/17 88/11
shaped [1] 127/9
shares [2] 122/21 122/23
sharpens [1] 26/14
She'll [1] 190/6
shelf [1] 144/20
shined [1] 19/13
shines [2] 20/24 167/24
shop [1] 94/21
short [11] 5/20 31/21 94/5 106/24 130/20 138/10 181/16 190/14 190/15 190/24 193/24
should [27] 11/12 12/4 12/21 14/7 15/10 15/15 17/12 31/13 32/3 60/3 61/24 73/20 74/12 75/13 76/17 113/13 118/12 136/3 143/14 164/15 176/8 176/10 180/14 185/17 188/24 193/1 193/23
shoulders [1] 181/22
shouldn't [2] 13/24 14/11
shove [2] 50/21 51/1
show [11] 8/3 29/16 32/13 62/22 64/22 102/12 108/9 138/12 167/8 173/1 176/22
showed [1] 57/9

S

showing [1] 97/16
shown [2] 49/7 167/17
shows [3] 5/21 25/19 166/24
side [44] 19/16 21/7 21/12 21/15 21/25 22/8 22/22 23/13 23/14 23/24 24/4 24/5 24/7 24/12 25/3 25/6 25/7 67/11 67/11 88/16 88/17 107/5 110/1 129/23 145/12 148/12 148/16 148/16 148/20 148/22 149/13 149/15 149/16 150/3 150/22 155/23 165/16 166/21 167/2 167/2 168/7 183/19 184/3 184/16
side-scatter [1] 21/15
sides [3] 46/2 133/21 134/1
sideways [3] 21/13 21/21 21/23
signal [8] 144/13 144/14 150/7 150/8 155/24 157/9 157/10 174/9
signals [5] 158/20 159/4 162/11 162/11 162/17
significance [1] 64/20
significant [2] 11/19 134/25
significantly [2] 114/7 134/20
similar [8] 18/12 51/19 52/13 54/3 166/15 166/16 167/20 170/14
similarities [1] 91/21
simple [1] 21/18
simultaneous [3] 35/25 46/14 185/24
simultaneously [4] 55/6 73/6 73/9 173/5
since [7] 11/7 11/8 11/10 27/10 33/2 39/7 39/9
single [6] 16/3 64/5 87/7 89/15 89/25 127/2
single-mode [1] 89/25
sip [1] 83/8
sir [1] 13/23
sit [1] 180/19
sits [1] 98/16
situated [2] 135/24 136/16
situation [1] 16/2
six [2] 35/20 147/15
six-pack [1] 35/20
size [2] 89/18 90/1
sizes [1] 90/13
skill [9] 72/2 72/5 72/11 100/17 116/23 129/18 132/25 133/5 187/10
skipped [2] 144/6 151/5
sky [1] 88/20
slide [54] 4/1 28/9 28/10 28/12 28/19 28/23 29/18 30/2 30/5 30/14 30/20 31/8 36/20 38/10 38/11 50/3 52/20 53/1 53/2 54/19 55/8 58/20 58/21 63/19 66/6 66/7 66/15 67/3 67/8 67/9 67/14 68/17 76/19 81/11 97/15 97/17 99/21 100/10 103/3 105/7 116/17 117/6 117/22 117/22 118/14 120/2 120/3 121/6 124/4 127/17 127/23 128/1 128/6 174/6
Slide 100 [2] 67/3 67/14
Slide 101 [1] 53/2
Slide 16 [1] 38/11
Slide 17 [1] 28/9
Slide 18 [1] 28/12
Slide 19 [1] 28/19
Slide 20 [2] 28/23 63/19
Slide 24 [2] 29/18 50/3
Slide 25 [9] 30/5 30/14 52/20 54/19 55/8 58/20 66/6 66/15 68/17
Slide 26 [2] 30/20 58/21
Slide 27 [1] 31/8
Slide 29 [1] 100/10
Slide 3 [1] 4/1
Slide 30 [2] 117/6 120/2
Slide 31 [4] 117/22 118/14 120/3 121/6
Slide 32 [1] 76/19
Slide 49 [1] 103/3
Slide 5 [2] 67/8 67/9
slides [13] 19/1 47/5 50/15 79/2 85/14 85/17 91/5 96/21 102/25 127/13 129/5 144/6 148/5
slightly [1] 95/9
slip [1] 191/10
slower [1] 117/2
small [7] 87/25 88/8 88/13 88/14 89/2 90/20 100/25
smaller [1] 5/4
so [372]
solely [1] 142/21
solution [1] 111/5
solve [1] 5/9
some [52] 4/17 12/3 12/20 14/16 20/8 26/18 32/14 32/23 71/7 76/20 78/24 80/5 80/10 83/1 83/6 83/11 87/2 91/21 93/21 94/4 94/13 96/15 96/22 97/1 98/19 100/19 101/20 103/24 106/5 107/3 109/2 110/13 113/21 114/9 117/1 117/15 119/21 129/11 131/12 132/8 132/11 133/21 134/12 134/24 145/5 146/21 151/16 169/4 173/25 175/8 179/19 188/12
somebody [1] 94/16
something [28] 52/6 74/17 85/7 86/23 91/24 92/19 92/21 94/5 97/2 103/2 106/8 110/19 111/8 111/11 113/15 120/6 121/1 127/18 129/9 129/9 129/12 130/17 142/8 143/8 144/12 144/17 152/2 156/1
sometimes [8] 8/9 12/3 12/20 14/13 22/10 24/3 123/10 182/10
somewhere [1] 86/22
soon [2] 178/14 191/17
sooner [1] 182/7
sorry [33] 6/9 9/16 34/7 37/23 39/24 40/11 53/13 58/21 60/19 64/10 78/3 97/9 108/14 112/8 113/7 115/3 115/15 116/25 117/3 119/7 121/4 127/25 131/8 144/7 144/22 153/7 153/15 155/16 156/16 156/23 171/7 179/4 181/17
sort [13] 4/3 4/11 5/23 7/22 10/5 10/10 11/17 62/24 94/13 128/18 136/7 150/19 172/1
sounds [3] 93/25 131/13 143/4
source [47] 19/13 76/24 87/25 87/25 88/8 88/8 88/12 89/5 89/15 89/19 89/21 89/22 90/2 90/8 90/9 90/11 90/17 90/18 90/20 90/20 90/23 91/3 93/10 93/11 100/24 100/25 101/2 126/22 126/25 127/1 127/5 127/8 127/9 127/19 128/19 128/20 128/21 134/19 138/1 143/21 152/10 154/2 154/4 154/5 155/18 156/8 167/22
sources [3] 90/4 90/13 90/15
space [2] 69/13 83/6
spaced [1] 120/14
speak [2] 38/12 144/21
speaking [2] 14/10 173/5
speaks [1] 39/3
specific [8] 20/11 25/22 68/3 68/6 93/5 98/16 124/16 176/13
specifically [2] 125/17 152/13
specification [62] 6/24 7/24 10/8 10/10 11/18 21/11 27/23 32/10 32/10 34/12 34/17 35/4 46/4 47/4 49/22 51/22 55/16 56/11 59/16 60/14 61/1 65/10 66/17 72/14 77/5 78/11 102/17 107/17 118/2 118/4 118/6 120/7 120/9 120/16 120/18 121/17 122/1 128/8 139/13 139/20 143/23 145/1 145/7 145/22 146/15 146/22 147/6 148/10 148/22 149/7 149/9 154/21 155/21 160/8 164/18 165/9 165/9 165/17 170/21 170/23 171/5 176/14
specifications [1] 7/21
spent [1] 163/24
split [1] 35/12
splits [2] 21/24 58/16
spot [1] 88/15
spots [1] 114/6
stage [1] 187/20
stand [1] 17/12
standard [8] 17/18 72/8 129/15 129/21 131/17 132/8 132/10 140/2
standpoint [1] 116/19
star [3] 88/19 88/23 88/24
start [19] 18/6 28/1 28/17 32/1 32/10 32/13 33/9 76/11 84/23 87/24 91/17 107/12 111/16 125/19 136/14 137/13 138/3 148/4 179/15
started [5] 51/25 96/2 97/13 130/23 132/1
starting [4] 11/4 28/21 77/14 79/8
starts [1] 150/15
state [2] 15/17 20/16
stated [3] 47/12 47/20 71/22
statement [10] 7/5 7/6 16/21 17/20 89/11 90/16 93/21 125/4 145/6 152/3
statements [2] 130/2 130/11
STATES [2] 1/1 1/15
stating [1] 67/13
stenographic [1] 194/11
step [1] 48/1
stick [2] 21/19 124/3
still [13] 12/25 83/6 92/14 98/10 114/25 115/19 115/20 117/19 121/3 122/2 135/13 186/8 188/16
stipulate [1] 62/1
stock [2] 45/16 135/3
stop [2] 124/12 145/24
stopping [1] 182/11
stops [1] 120/15
story [1] 188/9
straight [2] 10/15 99/10
straightforward [1] 17/4
Street [1] 1/13
strikes [3] 105/25 111/10 131/18
striking [1] 31/10
strong [1] 74/7
structural [7] 136/11 137/1 137/5 139/4 139/10 140/18 140/20
structure [66] 136/11 137/2 137/11 137/14 137/17 137/18 138/2 138/7 138/8 138/13 138/21 139/23 139/25 140/14 141/3 141/6 141/13 141/16 141/19 141/20 142/10 142/15 142/19 143/3 143/9 143/10 143/14 143/17 143/17 143/22 144/5 144/12 145/2 145/2 145/3 145/5 145/22 147/19 151/10 151/14 151/17 169/19 176/7 176/8 176/13 178/2 178/5 178/20 179/3 179/6 179/9 179/13 179/25 183/2 185/6 186/5 187/6 187/21 187/25 188/12 189/5 189/10 189/14 189/18 192/16 192/17
structured [1] 7/22
structures [6] 139/9 140/4 140/5 140/7 142/24 183/9
studied [1] 178/18
studying [1] 179/11
stuff [9] 23/3 52/5 91/16 94/12 142/6 181/1 190/9 190/9 190/11
sub [3] 71/15 71/16 71/18
sub-terms [3] 71/15 71/16 71/18
subject [2] 11/19 15/5
subjective [1] 86/15
submission [3] 62/23 99/2 185/21

S

submit [6] 7/19 45/13 59/11 71/7 74/17 75/9
submitted [3] 91/9 92/4 98/25
subsequent [8] 27/20 33/2 37/1 40/22 41/11 77/19 130/9 130/10
subset [2] 70/4 74/8
substance [1] 124/24
substantial [1] 134/16
substantially [33] 78/9 78/15 78/20 78/22 82/11 82/15 83/14 84/11 84/15 84/24 107/15 107/19 107/21 108/2 108/5 111/19 111/21 112/3 112/8 112/24 114/21 118/21 125/8 125/9 125/11 132/19 132/22 132/24 132/25 133/3 133/4 134/16 135/5
substantively [3] 106/18 106/20 124/23
substitute [1] 142/18
substituting [1] 31/10
success [1] 5/18
successive [2] 5/14 6/11
such [17] 31/11 61/20 89/15 89/18 89/20 89/20 111/21 112/3 112/6 112/9 112/24 114/21 118/21 121/22 126/5 128/23 150/23
sudden [1] 182/14
sufficient [8] 137/11 137/13 137/17 138/7 138/12 141/10 141/15 142/15
sufficiently [1] 71/18
suggest [8] 15/3 39/9 43/16 43/16 43/18 68/23 82/20 134/23
suggested [1] 180/1
suggestion [1] 111/4
sum [1] 61/15
summary [2] 112/19 188/22
sun [4] 88/5 88/14 88/14 88/16
supplemental [1] 185/4
support [6] 32/6 46/2 66/6 66/14 118/4 120/24
supported [7] 27/22 34/12 64/21 92/21 120/7 129/10 129/25
supportive [1] 122/4
supports [7] 45/23 47/7 48/2 48/5 66/23 69/2 166/2
supposed [5] 60/25 180/9 180/12 181/3 192/1
Supreme [1] 72/9
sure [24] 9/10 17/9 29/17 38/14 40/15 52/8 52/8 53/21 71/17 72/17 81/8 84/19 97/10 106/9 109/25 113/14 125/21 137/10 157/22 158/5 168/3 170/1 178/22 193/18
surface [4] 53/9 54/7 67/15 67/15
surrounds [1] 170/20
sympathetic [1] 134/5
system [15] 27/5 89/17 94/20 95/20 159/24 170/18 171/23 172/2 173/18 173/24 174/17 174/25 175/4 184/6 184/25
systems [4] 94/12 94/16 94/18 169/10

T

T [5] 29/21 29/22 50/1 50/21 52/10
T-junction [1] 29/21
tackle [1] 105/22
take [14] 43/22 62/10 70/23 83/8 105/4 105/20 109/3 119/13 124/5 136/13 178/8 178/12 179/21 181/3
taken [3] 70/25 128/2 178/16
taking [4] 3/14 110/22 181/14 181/19
talk [23] 3/23 25/2 33/21 50/4 50/14 52/25 56/14 58/1 58/4 63/17 98/14 113/5 113/5 118/17 132/24 140/18 143/13 146/22 149/9 173/16 178/15 180/3 186/14
talked [7] 59/13 108/10 116/20 126/25 138/24 148/25 159/24
talking [47] 6/5 32/25 35/14 37/11 40/1 49/13 50/5 50/6 50/7 50/10 50/11 50/12 52/15 52/17 52/23 53/5 53/7 53/24 53/25 54/2 56/20 64/1 65/19 78/13 80/12 81/22 94/24 100/21 101/4 103/24 121/18 125/8 130/13 130/15 131/4 136/7 136/24 139/11 140/21 145/14 145/17 152/17 153/2 153/4 160/3 163/24 177/19
talks [12] 16/17 63/17 65/10 65/12 78/25 79/25 80/1 80/4 82/3 126/1 168/18 184/15
tangent [1] 37/14
Tech [1] 144/24
technical [3] 4/17 17/10 76/6
techniques [1] 20/16
technology [2] 27/17 90/13
tee [1] 112/19
tell [19] 9/18 10/2 10/20 11/11 29/8 95/6 96/10 96/18 110/17 110/18 132/7 145/1 152/11 152/19 159/4 159/17 170/21 184/20 190/6
telling [9] 37/19 60/20 60/22 124/1 130/11 151/20 152/15 162/13 168/21
tells [4] 63/23 96/2 170/23 171/6
temporal [5] 29/11 73/1 73/14 74/9 74/11
temporally [5] 29/5 43/2 43/5 45/6 73/22
ten [3] 70/24 130/18 130/18
Tennyson's [1] 191/13
term [63] 9/9 10/24 11/2 11/7 17/4 28/1 37/4 48/20 50/15 71/3 71/3 71/25 72/1 72/5 72/12 72/13 75/8 75/11 75/13 76/8 76/11 76/12 76/14 76/17 80/13 82/21 82/24 83/16 86/13 86/15 86/16 90/6 92/20 93/22 95/2 96/8 102/6 111/4 124/7 126/11 131/24 132/6 133/12 135/20 135/24 135/25 136/2 136/8 136/11 136/22 137/1 137/5 137/6 137/19 139/4 139/10 140/3 140/13 140/18 140/19 140/20 187/11 189/18
termed [1] 10/13
terms [50] 7/7 15/1 15/15 16/25 17/1 17/1 17/2 17/3 17/6 17/14 17/15 17/18 17/21 17/23 28/9 35/21 46/19 70/11 71/3 71/4 71/6 71/8 71/10 71/15 71/16 71/18 74/2 74/16 74/20 75/18 76/1 82/24 101/11 103/3 103/18 105/3 105/13 124/1 136/18 136/20 137/3 140/2 169/18 177/8 179/19 179/21 180/5 185/17 192/10 193/1
testimony [2] 133/17 133/24
textbooks [2] 4/4 4/13
than [16] 13/18 13/21 61/2 64/23 83/12 86/10 89/21 90/9 90/17 93/2 100/12 117/17 120/24 121/1 163/17 193/22
thank [40] 3/5 3/15 3/19 18/19 19/3 19/6 19/7 27/24 27/25 31/19 31/20 33/20 35/5 36/7 36/8 44/12 44/13 46/10 55/11 55/13 65/9 70/22 78/1 84/21 84/22 107/6 107/8 123/22 124/25 125/1 133/9 133/10 135/19 169/23 180/19 185/14 185/15 190/18 194/2 194/3
Thanks [2] 38/15 194/4
that [835]
that's [257]
their [82] 18/15 25/17 25/18 28/2 29/13 29/15 32/6 32/14 33/13 35/18 37/3 37/17 45/4 45/16 47/4 47/16 47/16 49/23 50/3 50/13 52/20 54/16 54/19 63/14 66/2 66/6 66/7 66/9 66/15 66/19 66/21 71/23 74/24 76/15 78/25 80/4 80/6 80/9 83/20 84/1 85/23 86/16 87/12 87/21 89/4 90/4 90/5 91/2 91/2 91/4 91/4 92/7 93/3 95/3 99/2 99/7 99/10 99/11 100/7 103/17 103/18 104/7 104/18 105/2 105/11 110/21 117/14 119/20 120/1 124/6 124/13 124/13 129/15 131/13 131/16 146/6 148/9 148/14 168/6 181/4 185/17 186/18
them [44] 24/1 24/2 31/18 33/6 37/8 37/8 37/9 40/5 43/8 44/22 44/23 44/24 44/24 46/17 59/11 62/12 62/13 62/14 62/20 73/8 74/4 79/15 80/15 83/5 91/13 99/13 120/22 123/19 124/12 131/9 132/7 144/7 147/18 150/18 181/15 181/19 182/13 183/9 183/18 184/6 184/25 185/19 186/19 188/11
themselves [1] 152/18
then [134] 4/7 4/9 4/10 5/23 10/14 13/24 17/6 17/14 19/14 19/24 20/1 20/13 20/24 20/25 21/9 22/6 23/20 24/13 24/13 25/3 25/8 25/12 25/13 26/16 26/16 26/24 27/1 30/19 32/9 39/14 40/19 41/18 41/19 44/5 44/8 44/24 48/22 54/17 57/16 57/18 58/1 58/20 58/24 60/7 61/22 62/20 63/10 65/11 68/9 69/7 71/5 74/4 74/17 75/8 75/25 76/3 77/19 81/1 82/6 83/8 84/3 84/6 86/13 86/22 89/18 89/20 91/13 91/23 92/1 92/23 96/1 96/7 96/17 96/19 97/1 97/22 98/10 100/16 101/5 105/4 106/16 107/25 113/4 113/12 113/13 118/15 118/20 119/2 121/6 124/4 130/18 134/25 135/3 136/4 136/5 137/5 139/18 144/23 145/20 151/16 152/8 154/7 154/15 156/9 160/14 160/16 160/16 162/2 162/5 163/17 165/3 166/25 167/25 168/10 173/16 174/24 176/12 177/13 178/8 178/13 180/2 180/12 180/21 180/21 182/24 185/20 185/24 188/21 189/6 189/15 192/9 193/5 193/12 193/15
then the [1] 154/7
theory [1] 91/13
there [147] 4/8 5/3 5/5 7/8 7/18 9/9 10/8 10/8 11/2 11/8 11/8 12/3 12/20 13/4 13/10 13/10 15/8 15/13 16/14 16/14 19/23 19/23 19/23 21/1 21/2 21/14 22/18 25/15 26/23 27/9 29/4 31/16 33/13 33/19 34/2 35/7 45/1 47/10 49/5 49/9 49/16 50/2 51/14 53/7 53/17 54/6 54/7 57/15 57/17 58/19 61/7 61/20 61/21 63/7 64/24 65/20 66/9 66/16 67/12 69/5 70/14 72/19 73/4 73/5

T

there... [83] 73/13 74/2 74/6 74/8 78/17 78/24 79/1 79/4 79/23 80/9 82/14 82/25 83/10 84/24 85/24 87/6 88/15 90/11 91/11 93/18 93/25 96/24 98/22 98/23 98/24 100/2 107/2 109/2 111/24 112/6 113/20 115/4 119/14 119/15 120/9 120/16 120/21 124/5 126/5 126/7 129/8 131/12 132/15 132/23 133/15 134/11 134/22 135/4 136/18 137/13 137/17 138/2 139/18 140/18 140/23 140/23 141/20 141/25 145/24 147/4 147/6 149/3 151/2 151/14 159/14 159/22 159/23 165/4 168/4 168/8 169/2 169/9 169/19 173/8 179/12 182/15 186/5 189/9 192/19 192/25 192/25 193/8 193/18

there's [105] 5/15 7/4 11/10 13/4 13/13 13/14 16/2 16/21 17/20 17/21 17/22 19/12 20/23 21/13 21/22 22/18 24/1 24/2 24/8 24/9 24/12 25/1 25/8 26/19 29/1 29/21 30/6 30/14 30/21 31/12 32/7 42/10 47/20 48/12 48/18 51/5 51/15 52/8 52/8 53/16 55/15 56/24 58/23 63/6 63/16 64/4 64/23 65/13 66/5 66/14 68/2 68/16 70/14 73/17 83/5 86/21 87/23 89/1 91/20 91/20 91/21 93/20 93/25 98/13 100/13 104/4 110/7 111/22 114/4 115/7 120/16 125/4 128/23 130/7 131/14 136/5 136/9 136/20 138/12 140/21 140/23 142/5 142/6 142/8 143/8 145/21 150/5 159/23 160/25 161/3 161/9 165/12 165/12 166/2 166/21 168/25 168/25 170/18 187/20 188/8 188/12 189/14 189/17 191/6 193/12

therefore [2] 73/18 169/18

these [36] 5/4 6/1 6/2 6/19 17/21 17/23 19/8 19/23 19/23 20/20 20/21 22/3 33/2 39/21 49/6 97/3 98/4 101/11 103/16 104/2 120/17 121/4 124/1 127/1 130/4 131/11 140/3 141/23 141/24 169/18 169/20 182/9 185/17 188/12 188/25 189/2

they [163] 5/1 5/1 5/10 12/1 12/18 14/6 15/15 17/6 18/15 18/15 19/20 19/21 26/22 28/15 32/2 32/5 32/8 33/18 33/21 34/1 35/24 36/2 36/17 36/24 36/25 37/2 37/5 37/5 44/14 45/5 47/14 48/21 48/22 49/22 50/3 50/13 53/21 54/10 55/1 55/17 55/21 55/22 59/22 59/24 62/6 63/15 64/4 68/10 68/16 68/17 68/23 78/8 83/4 83/22 84/3 86/20 87/4 87/5 87/12 88/24 89/5 89/9 89/13 89/18 89/20 90/3 91/3 92/24 94/21 94/22 95/6 95/13 95/15 95/15 95/16 95/17 96/2 96/3 97/4 98/7 98/7 98/11 100/6 100/9 100/16 101/16 102/14 104/15 104/24 105/1 105/2 105/3 105/4 105/8 107/9 109/17 110/12 112/1 114/5 116/22 117/6 117/7 117/8 117/8 117/10 117/12 117/13 117/14 117/14 117/15 117/15 117/15 117/23 119/19 120/1 120/4 120/5 120/6 120/11 120/21 121/7 121/7 121/25 122/1 122/2 123/25 124/8 124/9 124/10 125/13 127/15 130/3 130/16 131/2 131/2 131/4 133/19 133/21 134/18 136/4 144/11 146/21 148/9 148/14 148/15 150/12 165/21 165/23 165/24 167/8 167/14 167/14 167/15 171/20 171/21 171/21 171/22 172/19 177/25 186/18 186/19 186/25 187/1

they'd [1] 94/23

they're [62] 10/13 17/17 19/19 39/24 39/25 41/22 44/25 46/17 49/17 52/23 53/5 53/7 56/18 62/16 66/4 66/7 67/21 67/22 69/1 69/1 69/13 69/24 73/9 86/14 87/3 87/6 89/13 92/4 93/3 98/10 99/13 101/3 101/10 103/18 104/3 104/11 104/11 104/19 105/20 112/17 114/3 116/21 117/17 117/18 117/19 117/24 119/25 121/18 121/18 144/14 146/9 150/12 165/19 168/5 168/6 171/15 172/1 176/25 183/22 184/17 187/18 193/15

they've [6] 52/20 84/6 92/4 92/25 93/4 172/13

thing [17] 21/18 22/25 27/7 69/23 83/13 87/20 107/24 119/20 120/16 123/25 126/5 128/24 150/23 152/1 152/4 181/6 186/3

things [18] 4/21 79/15 87/17 90/3 95/22 98/19 105/3 108/16 108/23 121/4 127/7 127/10 128/21 130/24 134/4 149/7 150/1 186/19

think [201]

thinking [7] 36/14 93/18 113/3 115/4 115/15 142/8 188/11

third [3] 4/20 56/1 77/25

this [309]

those [29] 9/5 10/12 30/17 32/7 32/9 53/20 71/4 71/8 71/18 74/16 75/23 77/21 79/7 79/14 91/18 91/24 93/12 93/14 123/16 123/18 123/18 136/13 143/23 149/8 151/15 163/24 176/21 183/21 186/18

though [13] 11/21 50/17 60/2 73/15 93/16 104/13 121/11 133/14 149/24 160/22 173/14 180/19 182/20

thought [31] 7/12 8/19 37/16 38/16 39/1 39/13 40/25 42/6 43/1 51/4 52/4 52/5 65/20 69/15 99/10 115/13 116/10 116/13 119/3 142/6 156/20 160/20 161/16 161/17 177/12 177/19 182/12 182/17 187/14 187/17 193/1

three [9] 17/15 32/8 55/25 56/9 59/10 59/11 94/6 96/24 98/13

through [41] 4/7 5/14 6/1 6/12 6/15 6/21 19/11 21/1 21/5 22/21 23/1 25/1 25/18 26/2 26/3 26/7 26/10 27/4 32/7 51/6 51/7 53/8 57/1 57/9 57/13 57/16 57/19 74/4 79/6 85/21 86/20 98/8 98/11 117/14 134/17 149/5 150/6 154/14 154/15 161/10 164/13

throughout [5] 27/5 28/24 49/17 60/13 173/16

Thursday [1] 1/10

time [43] 4/15 5/2 5/3 6/11 12/14 35/13 36/3 36/23 42/15 42/15 49/21 51/20 52/10 53/21 54/5 62/7 62/7 62/8 67/16 67/17 67/21 69/1 69/9 69/14 72/2 73/8 75/12 103/7 103/7 106/24 122/17 130/7 138/9 138/9 138/10 138/10 163/24 177/5 177/5 177/10 178/9 182/8 186/2

times [1] 173/14

today [16] 3/9 3/14 7/1 14/15 18/24 27/17 27/23 42/12 44/4 59/10 71/5 71/19 85/23 93/4 151/1 178/14

together [3] 133/20 163/24 185/21

told [4] 38/16 117/8 124/8 185/5

tomorrow [1] 191/23

too [6] 19/1 38/22 109/14 112/21 119/6 185/1

took [1] 4/19

top [2] 83/6 149/3

totally [4] 47/8 83/25 91/13 150/20

towards [1] 80/14

town [1] 96/8

tracing [1] 91/16

tracking [2] 152/25 155/11

trained [1] 94/16

transcript [3] 12/13 12/16 194/11

transmission [1] 144/2

travel [2] 26/7 26/25

travels [2] 20/25 25/13

treatises [5] 4/4 4/13 139/2 139/3 140/8

trial [8] 132/7 132/13 133/18 133/19 133/21 133/22 180/13 181/9

trick [1] 155/22

tries [1] 127/7

trip [1] 181/17

true [7] 37/2 77/14 87/14 87/19 129/24 174/9 194/10

truncated [1] 124/10

try [7] 14/15 41/5 84/3 87/12 117/24 120/4 130/5

trying [19] 5/8 14/14 15/2 17/25 31/9 56/23 78/3 86/14 87/13 98/2 110/2 113/23 117/9 120/23 123/12 160/3 160/5 171/12 193/17

tube [6] 4/22 21/1 50/21 51/1 51/10 51/11

tubes [2] 4/25 6/9

TUNNELL [1] 2/8

turn [2] 32/23 84/3

turns [1] 133/23

tutorials [1] 4/13

two [33] 14/5 17/15 47/3 49/6 49/22 55/5 55/22 55/22 59/11 60/8 64/11 67/22 75/23 76/1 78/14 78/16 78/16 79/14 94/20 99/23 108/16 108/23 116/14 123/15 123/18 123/18 130/24 133/19 136/9 138/25 144/23 172/10 183/22

types [1] 183/22

U

U.S [2] 27/11 194/15

Uh [5] 65/3 122/10 168/13 168/14 168/19

Uh-huh [5] 65/3 122/10 168/13 168/14 168/19

ultimate [1] 5/16

ultimately [1] 10/11

under [8] 12/3 12/20 13/25 70/2 81/4 104/7 124/7 152/20

understand [23] 13/4 17/5 38/9 41/4 44/15 51/25 62/24 89/24 91/16 99/3 101/13 101/17 116/24 116/25 121/8 121/15 124/17 139/16 139/18 140/4 183/15 187/12 188/1

understanding [8] 15/14 15/15 95/16 95/18 101/11 117/23 118/24 139/1

understands [2] 72/5 114/8

understood [25] 15/16 31/23 32/16 70/8 78/2 86/17 100/18 132/17 134/10 136/2 138/24 139/4 139/10 140/1 140/17 140/20 155/14 185/9 185/15 188/14 188/18 191/2 191/3 193/18 193/25

U

undisputed [8] 73/9 134/6 134/9 134/11 135/8 179/2 183/21 187/3
unique [1] 5/11
UNITED [2] 1/1 1/15
universe [1] 74/16
university [1] 94/8
unquote [3] 72/15 138/1 142/12
until [2] 44/14 116/14
up [92] 4/2 4/19 5/23 8/15 12/10 16/12 22/13 22/14 23/4 23/5 24/4 24/5 28/5 30/3 32/23 33/12 34/7 35/19 36/19 42/9 43/14 43/22 44/8 44/14 44/24 45/1 45/15 48/13 49/4 50/17 61/15 62/16 65/8 65/15 67/11 69/5 69/20 71/5 74/15 77/24 85/12 85/17 85/24 87/21 87/23 90/10 93/25 97/8 97/8 99/9 108/11 109/8 109/8 109/8 111/8 111/11 112/19 112/22 113/9 116/17 120/1 120/4 120/11 128/5 129/12 135/18 138/19 142/7 144/21 148/18 150/24 151/23 156/10 156/10 157/21 157/21 159/7 159/7 159/16 162/1 165/1 169/25 170/4 179/6 180/8 180/11 180/21 181/9 182/6 182/18 189/5 193/12
upon [2] 139/13 139/25
upper [3] 19/22 25/14 67/11
UPTON [3] 2/13 3/12 190/5
upwards [2] 24/14 25/1
us [9] 3/9 101/10 106/9 109/21 112/2 132/7 170/21 170/23 185/20
usage [3] 59/11 59/18 131/23
use [31] 5/7 9/5 9/8 10/24 11/16 14/16 20/6 28/20 28/24 29/20 30/24 30/25 31/1 31/15 42/5 45/3 50/15 59/18 60/15 61/11 66/20 76/7 88/24 90/5 90/6 103/15 162/6 164/22 166/16 171/11 171/12
used [38] 8/1 8/18 16/18 17/16 17/18 19/10 20/1 20/9 29/23 31/7 49/17 55/16 55/18 59/14 60/9 60/14 61/9 61/17 61/18 76/11 88/23 89/14 89/16 90/12 95/3 95/4 128/2 128/6 131/19 131/19 131/20 131/22 136/19 142/17 143/3 143/4 153/13 173/16
uses [2] 56/11 89/25
using [5] 14/23 61/13 84/13 91/3 144/20
usually [3] 7/21 12/8 89/19

V

v [1] 1/5
vaguely [1] 105/2
variability [1] 85/4
variance [3] 83/11 83/12 130/14
varies [1] 126/12
various [8] 4/13 11/18 25/20 28/21 31/13 68/4 134/15 140/7
Velcro [1] 139/8
verb [2] 92/6 164/23
version [1] 130/16
versus [3] 10/22 11/13 88/17
very [35] 4/4 6/25 7/2 21/11 25/21 28/19 35/13 44/16 49/16 51/19 56/24 77/7 77/16 87/25 88/8 88/13 88/20 88/20 89/2 90/20 90/21 92/13 92/13 98/16 105/19 105/19 130/3 130/20 134/5 134/13 142/16 150/1 166/16 167/20 191/10
via [1] 165/6
video [3] 5/20 5/20 6/12
view [4] 17/16 100/20 101/21 106/5
viewed [1] 10/12
viewer [3] 86/5 89/8 95/11
viewing [2] 145/11 170/18
viewpoints [1] 135/11
Vitronics [1] 71/24
volume [1] 83/7
volunteered [1] 188/10

W

wait [12] 17/8 34/24 55/20 55/20 62/7 99/9 125/2 153/3 153/3 153/3 172/20 188/24
walk [2] 25/18 32/7
wall [1] 24/15
want [93] 3/17 8/3 13/3 27/7 28/1 29/7 29/7 32/1 33/15 34/7 44/22 47/6 50/17 51/25 54/25 58/1 59/24 61/15 63/15 65/23 67/25 69/15 70/20 74/16 75/14 85/17 86/2 86/18 87/1 88/7 89/7 91/1 91/17 92/19 96/17 96/18 96/22 97/9 99/3 102/9 103/19 104/13 104/15 105/1 105/2 105/3 105/4 106/9 109/3 109/17 110/2 110/4 110/13 112/1 113/14 113/22 113/24 114/10 114/14 116/10 116/18 118/1 119/14 119/17 120/6 125/13 125/18 127/16 128/9 129/7 141/7 141/11 141/14 141/21 142/8 143/13 150/9 151/23 153/19 155/8 158/4 162/6 168/24 169/22 174/24 185/4 185/6 185/24 186/1 187/23 189/22 190/16 193/12
wanted [14] 46/16 61/22 66/24 85/24 91/11 109/20 115/13 120/8 153/20 153/21 157/18 165/25 183/16 186/13
wants [1] 131/16
was [94] 4/21 4/22 5/1 5/3 5/5 6/7 6/10 6/23 6/23 6/24 7/1 8/11 8/20 20/5 20/7 27/14 30/20 34/18 36/14 36/15 37/16 37/21 39/1 39/2 39/13 40/25 42/6 43/12 45/17 52/9 54/15 54/17 62/24 65/20 66/24 67/13 70/25 71/16 72/19 72/20 73/11 74/5 78/3 78/19 81/11 82/13 85/22 87/22 91/8 98/22 98/24 98/25 100/2 100/3 103/2 103/2 103/15 104/2 111/9 117/23 120/19 120/21 120/23 122/16 123/13 128/2 128/4 128/10 128/10 128/14 130/17 130/17 130/20 131/10 145/22 147/16 147/21 150/14 150/15 150/15 151/2 153/11 153/12 170/6 178/16 182/12 182/17 186/18 186/18 190/12 191/10 193/8 193/17 193/18
wasn't [3] 38/6 44/16 142/7
Watch [1] 99/25
water [5] 83/3 83/3 83/4 83/8 83/9
wave [1] 154/11
wavelength [9] 5/11 19/18 25/13 37/6 39/16 40/20 50/9 157/5 164/4
wavelengths [6] 6/11 6/20 19/21 19/24 26/7 26/8
waves [2] 131/5 131/6
way [56] 4/23 6/3 14/17 17/17 17/19 21/18 23/14 26/18 27/2 27/22 28/7 31/21 35/17 41/5 46/2 47/9 56/24 58/22 59/12 60/14 60/15 60/21 61/9 61/12 61/14 64/4 64/5 75/12 78/23 79/3 80/19 91/2 92/2 95/9 102/6 102/15 105/21 113/20 114/25 130/19 131/23 132/5 133/24 140/9 140/23 153/10 170/5 172/15 180/3 183/11 184/4 186/3 187/4 190/7 191/8 192/23
ways [10] 9/19 18/1 88/22 93/1 93/21 95/3 96/25 106/20 117/15 117/16
WDM [49] 5/11 5/13 6/4 16/18 20/12 20/16 25/16 25/20 26/2 26/3 50/9 57/19 64/20 65/14 67/6 67/11 67/18 68/4 68/5 89/16 144/2 156/14 156/23 156/24 157/1 157/3 158/12 158/13 158/23 160/17 162/3 162/5 162/10 163/19 163/25 164/14 164/17 164/19 165/6 165/20 166/3 166/8 168/6 168/11 168/18 169/5 169/9 169/11 179/2
WDMs [2] 20/6 20/9
we [237]
we'll [15] 25/2 48/19 71/6 75/9 87/17 132/7 132/13 133/18 135/16 136/14 178/14 182/24 186/2 190/18 191/5
we're [67] 4/18 7/19 12/13 14/14 14/15 14/15 14/16 15/12 16/21 28/22 30/5 30/7 30/23 31/8 40/1 40/4 50/5 50/6 50/6 50/10 50/11 50/11 52/17 52/24 56/20 62/18 62/19 64/10 68/3 70/15 78/12 78/13 81/21 85/5 86/11 86/25 87/11 87/13 90/9 97/10 97/10 98/1 100/21 102/11 106/3 106/24 107/1 112/22 113/15 116/1 121/2 121/11 121/11 130/13 130/15 136/7 136/13 136/24 145/20 151/11 152/17 159/9 178/13 178/14 179/21 181/24 189/15
we've [17] 4/2 11/1 28/10 31/22 59/9 59/13 61/12 71/17 73/2 76/6 78/16 140/10 141/16 144/23 159/24 180/10 191/16
website [2] 5/21 6/13
week [3] 133/19 181/19 189/25
weeks [1] 133/19
weight [3] 32/18 75/1 79/10
well [83] 6/14 8/19 11/1 14/23 18/7 19/14 20/2 20/16 21/16 22/18 24/6 32/12 32/20 37/13 38/8 41/3 44/5 45/15 47/6 49/10 56/17 60/5 60/7 62/4 62/7 63/23 76/17 78/18 79/2 80/12 80/24 81/19 84/3 84/6 85/14 85/14 86/3 86/16 87/24 94/15 95/8 96/9 99/19 103/11 104/12 105/4 105/5 107/11 107/19 107/23 111/7 113/4 113/12 115/17 115/23 115/24 118/20 120/4 121/7 127/16 132/7 136/2 139/4 139/10 140/20 141/14 142/8 151/7 155/8 164/16 171/19 172/20 173/1 173/15 174/2 177/5 177/23 178/8 180/14 181/5 184/10 186/13 188/24
well-established [1] 20/16
well-known [1] 76/17
well-understood [4] 136/2 139/4 139/10 140/20
went [4] 38/17 116/19 133/21 134/2
were [37] 4/15 4/16 4/19 4/25 5/1 5/1 5/3 18/16 30/21 37/11 41/9 52/2 71/12 71/13 73/1 73/10 77/12 77/22 84/13 87/2 91/1 94/8 99/6 102/10 117/8 122/11 123/19 123/20 136/25 137/4 138/22 153/1 153/4 172/22 177/19 183/16 192/25
what [313]
what's [42] 10/22

W

what's... [41] 10/22 11/12 11/13 34/10 39/18 42/20 52/6 56/1 67/5 75/14 92/18 94/2 106/2 111/12 115/5 118/7 126/9 139/7 143/7 151/14 154/4 155/3 156/12 156/15 156/17 157/1 157/3 157/23 157/25 158/16 159/4 162/13 162/16 170/18 172/16 173/23 174/3 175/11 176/5 180/3 189/3
whatever [3] 64/16 104/12 190/14
whatnot [1] 39/9
whatsoever [3] 104/4 119/15 169/16
when [70] 8/14 11/12 21/3 21/24 22/2 24/11 35/13 35/14 36/25 37/3 37/11 37/16 41/9 49/12 52/15 60/2 60/5 60/22 64/14 64/15 73/18 74/7 77/6 78/8 81/21 83/4 87/4 88/4 88/6 88/7 88/9 91/19 92/23 97/6 101/10 102/14 104/17 104/18 108/10 108/10 109/1 113/25 113/25 116/4 117/8 126/25 127/16 127/23 128/7 128/10 131/3 133/21 136/7 141/24 142/16 150/7 150/14 160/3 160/5 161/8 161/9 161/12 161/17 165/8 170/6 171/13 174/2 181/14 181/15 189/22
where [58] 5/13 25/24 26/18 29/8 31/12 32/1 32/19 33/13 46/18 49/6 53/17 55/1 55/5 55/14 60/8 61/17 64/1 64/23 64/24 65/6 68/17 73/5 75/7 93/16 112/21 113/16 120/12 121/25 125/4 128/1 132/1 133/16 133/20 136/18 137/16 138/2 138/21 139/3 143/25 147/12 149/10 150/11 150/12 152/10 152/20 159/13 160/15 162/25 166/12 166/13 167/14 167/15 169/5 169/11 180/5 181/7 181/12 188/15
Where's [1] 167/5
Whereas [2] 69/6 127/4
wherein [2] 63/20 93/9
Whereupon [2] 70/25 178/16
whether [25] 4/17 14/8 16/14 28/13 28/15 28/25 30/21 30/22 42/13 67/25 69/11 74/11 76/20 76/23 134/13 136/2 136/3 136/8 136/10 136/11 143/19 151/2 185/7 186/23 192/5
which [82] 4/2 5/17 7/22 9/9 12/13 20/15 20/24 21/1 21/2 25/2 25/11 25/13 25/14 25/19 26/11 26/17 26/17 26/24 27/1 27/3 30/7 31/14 33/10 34/5 34/12 34/24 35/9 37/9 39/2 39/3 40/5 40/8 40/22 41/14 41/15 48/19 51/18 52/24 53/6 54/22 58/4 72/6 72/13 74/2 74/23 74/23 76/1 80/6 82/8 85/23 86/11 86/16 86/17 91/13 92/3 99/4 99/17 101/6 101/8 105/6 113/20 119/22 120/3 120/4 122/20 126/11 126/13 132/1 133/4 137/7 144/11 144/18 152/6 161/25 164/10 165/1 166/14 172/6 172/13 174/15 181/23 192/23
while [3] 81/15 124/5 142/20
who [6] 80/6 87/22 87/23 131/3 181/4 186/23
who's [1] 94/16
whole [7] 60/22 61/10 119/25 171/3 177/22 187/14 187/17
why [71] 13/24 14/7 17/8 18/11 18/14 21/21 22/6 23/13 24/4 24/4 35/11 38/12 38/25 39/1 43/14 45/1 45/18 47/24 48/4 55/17 62/10 62/14 64/13 68/7 78/18 82/20 85/3 87/17 91/14 92/7 93/8 93/21 93/24 95/2 96/7 96/19 101/18 102/7 103/22 104/9 104/16 104/24 105/10 106/11 106/15 108/8 108/9 108/24 109/12 112/17 121/16 122/4 124/15 132/7 132/24 137/9 141/11 145/22 148/17 159/6 164/21 168/2 168/3 171/11 171/12 175/11 176/22 177/24 182/10 187/8 192/20
wide [1] 126/23
widely [2] 138/23 140/1
width [4] 79/18 79/21 109/4 109/12
will [37] 3/13 18/23 19/14 19/15 19/18 24/12 25/9 25/12 26/25 27/1 27/3 28/6 36/9 44/7 45/20 57/23 69/18 75/2 81/7 85/23 86/16 86/17 87/16 93/7 102/25 105/20 114/9 114/11 124/5 131/12 133/18 135/9 135/10 135/20 158/22 178/9 182/3
willing [2] 62/1 63/1
Wilmer [1] 3/3
WILMERHALE [1] 2/3
Wilmington [1] 1/13
win [2] 32/3 113/12
within [11] 21/2 87/7 93/14 110/24 124/10 130/20 135/24 143/3 143/4 152/4 163/7
without [4] 77/2 125/10 134/20 134/25
won't [2] 32/1 181/6
wonder [1] 182/10
wondering [1] 115/25
word [32] 7/25 8/7 8/14 8/15 8/18 11/16 11/22 15/7 17/4 30/25 31/2 42/5 78/20 79/17 82/15 125/6 127/12 128/2 131/6 131/18 138/24 142/16 142/17 144/8 144/10 148/16 152/18 162/6 171/11 174/8 177/23 186/24
words [28] 9/5 17/15 22/20 31/10 31/11 31/15 31/16 35/20 36/25 40/24 41/2 51/4 55/18 56/11 61/8 61/13 71/22 106/20 119/12 122/19 124/23 127/19 138/22 142/4 142/11 155/3 157/19 192/25
work [8] 75/10 106/10 181/18 181/20 182/3 190/1 190/20 190/22
worked [1] 28/2
working [1] 18/16
works [4] 5/22 19/12 91/15 190/2
world [10] 78/23 80/17 81/20 82/2 82/6 82/12 84/5 134/8 152/20 169/10
worried [3] 14/7 14/11 75/12
worry [3] 29/15 36/10 151/2
worthwhile [1] 191/11
would [133] 7/8 7/19 11/17 11/21 14/20 15/3 15/18 15/22 15/24 15/25 16/1 16/22 17/21 17/22 18/10 22/21 29/9 34/9 37/25 39/9 40/5 40/25 42/8 43/1 43/16 43/16 43/18 43/24 45/14 46/2 49/21 51/3 52/5 59/11 60/1 63/8 67/7 68/23 70/17 70/17 70/18 71/19 72/1 72/24 72/25 73/12 73/13 75/18 77/11 78/21 82/14 82/19 84/10 84/14 94/2 94/22 95/17 96/13 97/4 97/4 99/8 100/18 102/1 102/5 105/21 106/7 106/8 106/10 107/14 109/6 109/14 110/6 110/19 110/21 111/5 111/7 116/23 116/25 117/13 125/6 125/16 126/2 126/3 126/12 126/14 127/8 128/17 128/18 129/19 130/22 131/3 131/3 131/4 131/14 131/16 132/18 133/6 133/16 137/2 137/5 137/12 139/16 140/9 140/16 141/12 143/10 145/21 146/14 152/3 152/10 154/5 154/9 158/13 159/22 163/14 163/24 165/19 167/14 167/15 174/19 178/20 181/16 181/18 181/19 182/12 183/8 183/9 183/10 184/5 184/22 185/19 186/22 193/2
wouldn't [5] 52/4 78/20 166/15 186/20 187/11
write [3] 62/11 62/14 190/7
written [46] 7/9 8/4 10/21 11/10 29/8 29/9 29/16 29/17 31/4 32/24 44/20 45/18 45/21 45/23 49/6 61/1 61/2 61/10 61/12 61/16 64/22 65/5 65/20 66/2 66/5 66/5 66/14 66/23 73/13 74/21 74/23 75/5 78/3 78/7 103/24 122/18 122/22 122/23 125/4 125/19 127/20 127/21 130/6 132/19 135/6 153/13
wrong [9] 8/16 105/12 118/14 118/14 147/21 150/20 161/17 170/8 171/9
wrote [4] 36/25 62/13 158/18 181/2

Y

yeah [83] 10/24 19/5 24/10 24/20 30/4 36/11 37/24 37/25 40/12 41/3 41/5 41/13 42/1 42/16 42/25 44/23 45/10 46/15 46/15 48/3 48/9 49/24 52/7 52/7 53/15 53/18 53/19 56/4 56/6 56/16 58/3 63/12 64/12 68/20 75/23 85/11 93/20 94/7 94/15 94/17 97/13 97/20 99/24 102/3 106/18 115/24 123/1 123/8 123/13 123/13 126/18 127/25 142/2 147/25 149/4 151/19 153/17 156/20 159/8 160/13 161/3 164/3 166/14 167/6 167/9 167/12 167/15 168/3 169/14 172/15 173/3 173/7 175/15 176/4 176/11 176/16 180/16 184/10 188/20 190/1 190/5 190/20 192/2
years [4] 77/19 94/11 130/18 130/18
yellow [2] 78/17 104/3
yep [17] 36/19 36/21 47/2 48/11 48/15 98/17 100/15 103/8 157/18 158/9 161/11 162/12 180/25 192/6 192/8 192/11 193/20
yes [75] 9/2 11/6 11/6 12/11 13/23 13/23 14/4 16/6 16/10 18/9 21/20 22/14 23/19 25/7 31/23 33/25 35/2 38/24 46/11 46/15 50/19 54/20 54/23 55/8 56/8 56/10 58/6 61/24 62/9 64/25 70/19 81/18 81/20 82/18 82/22 99/16 109/9 119/16 123/5 125/7 125/23 126/8 129/4 138/14 145/25 146/4 147/9 151/25 153/16 158/14 159/5 159/20 160/14 161/21 162/1 162/4 162/18 162/24 163/9 163/22 164/11 164/15 164/19 168/25 174/18 175/10 176/2 178/22 182/3 183/6 185/13 189/7 190/2 190/23 193/14
yet [3] 37/15 67/21 134/8
York [1] 181/13
you [625]
you'd [1] 187/21
you'll [3] 27/18 27/23 181/21
you're [54] 8/3

Y

you're... [53]
11/10 15/6 18/7
23/17 23/17 23/19
34/6 35/14 37/14
37/19 38/8 40/24
42/17 43/4 46/8
49/13 51/24 52/15
68/16 77/4 85/12
95/23 99/15 103/23
106/2 109/11 111/2
111/9 113/23 137/20
138/5 142/11 146/12
147/16 149/14
150/11 151/20
152/15 156/9 159/16
160/23 161/3 163/6
164/16 167/16
168/21 168/21 171/8
173/11 173/11
185/25 190/24
190/25
you've [14] 41/1
42/24 48/25 76/13
84/23 122/5 151/1
174/14 174/15 185/3
185/24 187/25 190/7
192/20
your [306]
yourself [3] 104/24
190/13 190/25

Z

zebra [2] 187/1
187/1
zigzag [4] 5/15
6/12 6/16 16/15
zone [24] 30/10
30/10 30/12 30/12
30/12 50/14 50/14
52/20 54/6 54/6
54/22 54/22 56/18
56/21 56/25 67/16
67/17 68/1 68/1
68/2 71/13 71/13
145/11 170/19
zones [15] 53/8
53/9 53/16 53/21
53/23 54/2 54/7
56/5 64/16 64/18
67/22 73/1 73/7
73/11 73/11
zoom [2] 5/23 89/12