

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FOX FACTORY, INC.,
Petitioner,

v.

SRAM, LLC,
Patent Owner.

IPR2024-00491 (Patent 10,328,993 B2)
IPR2024-00492 (Patent 7,147,207 B2)

Record of Oral Hearing
Held: May 15, 2025

Before MEREDITH C. PETRAVICK, HYUN J. JUNG, and KEVIN W.
CHERRY, *Administrative Patent Judges*.

IPR2024-00491 (Patent 10,328,993 B2)

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APPEARANCES:

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The above-entitled matter came on for hearing on May 15, 2025, commencing at 1:00 p.m. EDT, at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

P R O C E E D I N G S

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JUDGE JUNG: Please be seated.

JUDGE PETRAVICK: We're going to take a moment to boot up our computers here.

JUDGE JUNG: This will be the oral argument for IPR2024-00491 and 492. In these proceedings, Petitioner Fox Factory challenges certain claims of U.S. Patent Numbers 7,147,207 and 10,328,993. Both patents are owned by SRAM, LLC.

Beginning with Petitioner's Counsel and then followed by the Patent Owner's Counsel, please state your names for the record.

MS. BHATTACHARYYA: Arpita Bhattacharyya from Perkins Coie, on behalf of Petitioner Fox Factory.

MR. WALSH: Rick Walsh on behalf of SRAM, LLC.

MR. HICKEY: Michael Hickey on behalf of SRAM, LLC.

JUDGE JUNG: Thank you. A few reminders for this hearing. Please refer to demonstratives, papers, and exhibits by slide or page number. And there is a public connection to the hearing. Petitioner and Patent Owner each have 60 minutes of total time to argue for both of these cases.

Ms. Bhattacharyya, when you're ready, you may begin.

MS. BHATTACHARYYA: Thank you, Your Honor. Your Honor, may I reserve five minutes for rebuttal?

JUDGE PETRAVICK: This will count down to 60 minutes from your total time..

MS. BHATTACHARYYA: Thank you. I will start with the 491

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1 IPR, which is for Patent Number 10,328,993.

2 Your Honors, my goal here today is to answer any questions you
3 may have. I, of course, have slides that I'm happy to go through, but if you
4 have any questions, I would appreciate it if you'd ask. And I'm happy to
5 jump around.

6 JUDGE JUNG: Okay. So before we begin your presentation, just
7 a question about your combinations. So if we added Denk to your first one
8 of those three combination, in any bicycle, is it your position that that would
9 meet the claim during assembly for steerer tube?

10 MS. BHATTACHARYYA: Yes, Your Honor. Our position is
11 that Denk teaches a tubular component for all bicycles, any tubular
12 component of a bicycle, including a steerer tube.

13 And Denk has been combined with Moechnig because Denk
14 doesn't actually teach how you would mount it conventionally to a bicycle,
15 for which we are relying on Moechnig. Yes, Denk's tube, it can be used as a
16 steerer tube, and it can be mounted just as Moechnig teaches.

17 JUDGE JUNG: Just sticking with Denk, if we just mounted Denk
18 into any bicycle, you would have a tube with its maximum thickness in line
19 with the vertical plane of the bicycle or, in other words, meeting the claim
20 limitation. Is that correct?

21 MS. BHATTACHARYYA: Yes, Your Honor, because Denk
22 teaches the bearing thickness by having the elliptical inner contour and the
23 circular outer contour. And because Denk teaches that the maximum
24 stresses in impact happen in the vertical plane of the frame, which is the
25 same as the plane of travel, reading Denk, a person skilled in the art would
26 know to orient the maximum thickness in the plane of travel.

1 JUDGE JUNG: Okay. And now, bringing in the secondary
2 reference of Moechnig, as Patent Owner points out, there is a teaching there
3 that you want to increase the flexibility of the fore-and-aft direction. It
4 seems to teach against the combinations you're proposing. So, in your brief,
5 I know you touched on it, but can you address it here directly?

6 MS. BHATTACHARYYA: Yes, Your Honor.

7 JUDGE JUNG: Given these two references, why would one
8 ordinary skill in the art still put Denk into the bicycle but not follow the rest
9 of the teachings as well of the secondary reference?

10 MS. BHATTACHARYYA: Your Honor, Moechnig is a
11 particular-use case. Right? Nowhere does Moechnig say that the maximum
12 stresses are not occurring in the plane of travel. Moechnig only says that to
13 increase the compliance in the fore-and-aft direction. And I'm reading from
14 Slide 15 here.

15 And as Petitioner's expert testified, Moechnig's particular-use case
16 is not contrary to the common knowledge that the steerer tube bears the
17 highest loads in the plane of travel, which is aligned with the fore-and-aft
18 direction. And in fact, a POSITA would have understood that to withstand
19 the high loads in the plane of travel, one could either increase the stiffness
20 and strength of the tube in the fore-and-aft direction or increase compliance
21 of the tube in that direction to bend with the load and absorb shock to the
22 rider and frame.

23 So Moechnig teaches increase the compliance in the fore-and-aft
24 direction so that you can bend with the load to manage the load. And it's the
25 same as an oak tree and a reed. A reed will bend with the load, whereas an
26 oak tree will absorb the impact. So it is a design choice.

1 Nowhere does Moechnig say that the stresses are not happening in
2 the fore-and-aft direction. Moechnig simply says increase the compliance in
3 the fore-and-aft direction to manage the load. And then Moechnig goes on
4 to say that that increases the comfort level of the rider because a lot of the
5 stresses are not transmitted to the rider, and also, it distributes the load over
6 a greater load of impact.

7 And again, it depends. I'm saying it's a particular-use case
8 because it depends on what type of bicycle it is. Because if it's a mountain
9 bike -- if it's a steerer tube for a mountain bike, you would want it to have
10 stiffness in order to withstand the impact.

11 But if it is a steerer tube for a cruiser, you're riding down a city
12 road, you don't want to take on a lot of the impact. You want the ride to be
13 smooth and with less impact, so you then increase the compliance in the
14 fore-and-aft direction. So that's the difference between Moechnig and what
15 Denk is teaching.

16 JUDGE JUNG: Although you've characterized it as a particular-
17 use case, it seems when you read the reference overall, it seems to be the
18 only use. This is not only the preferred use, but this is the whole point of the
19 reference, trying to increase the compliance in the fore-and-aft direction.

20 So given that, why would one of ordinary skill in the art still
21 follow Denk and without considering this additional teaching from the
22 secondary reference that you need to increase the compliance in the fore-
23 and-aft direction? I know you call it a design choice, but it seems to be more
24 than just a design choice, given the two references you picked.

25 MS. BHATTACHARYYA: Your Honor, Denk explicitly teaches
26 to increase compliance in the fore-and-aft direction, right? So that is the

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1 primary reference. So we are saying that a POSITA will follow the primary
2 reference -- the teachings in the primary reference.

3 And Denk explicitly teaches, and this is in Denk's column 2, that
4 the actual requirements -- so the wall thickness of the tube should be adapted
5 to the actual requirements with regard to strength and rigidity.

6 And Denk goes on to say that particularly high loads occur in the
7 vertical plane of the frame, which is the same as the plane of travel, since the
8 weight of the rider acts essentially in the vertical direction and the impact
9 load's acting on the front and rear likewise essentially occur within the
10 vertical plane.

11 So Denk is explicitly saying high stresses occur in the plane of
12 travel and then says that the actual requirement, the thickness, should be
13 adapted to the actual requirement. So the primary reference teaches to align
14 the area of maximum thickness and maximum strength with the plane of
15 travel, and we are following the primary reference. Moechnig is a different
16 use case.

17 JUDGE JUNG: Why is a person of ordinary skill going to follow
18 just the primary reference and ignore the additional teaching from the
19 secondary reference?

20 MS. BHATTACHARYYA: Because a person of ordinary skill in
21 the art will know that this is an engineering design choice. You can follow
22 the primary reference or you can follow the secondary reference and either
23 increase strength in that direction or compliance.

24 And it depends on the use case. Like in this particular case, the
25 steerer tube, if it is going to be designed for a mountain bike, you would
26 follow Denk and increase thickness in the fore-and-aft plane of travel.

1 JUDGE JUNG: Okay. All right, let me just move on to a new
2 topic. Patent Owner has also argued that you're presenting a new motivation
3 in the reply. Can you address that?

4 MS. BHATTACHARYYA: I think that is incorrect. In the
5 Petition itself, Petitioner had used Denk as the source of motivation. From
6 what I read in Denk in column 2, it is expressly in Denk that you should put
7 the area of maximum thickness in the plane of travel. So this is not a new
8 argument that comes up in the Reply, but because Patent Owner has argued
9 in the Patent Owner's Response that Denk doesn't teach it and Moechnig
10 teaches the opposite, and Patent Owner has also argued in the Patent
11 Owner's Response that they apparently discovered that the bicycle bears the
12 highest loads in a plane of travel. That is absolutely not true. Nothing in the
13 '993 Patent actually says that Patent Owner discovered this phenomenon.

14 So just to address their point, in the Reply, Petitioner added a
15 couple other references that also teach that the bicycle bears the highest
16 loads in the plane of travel. And so for Klein, for instance, is one of those
17 reference which teaches reinforcing the strength of the fore tube, including
18 the steerer tube in the fore-and-aft direction.

19 And Klein in column 4, starting at line 21, teaches that the heaviest
20 loads will come from vertical bumps or head-on impact and or braking
21 forces. Both vertical and longitudinal forces stress the front fork at a fore-aft
22 cantilever bending. In a simple analysis, it appears that increasing the
23 strength of the fork blades and steerer, fore-and-aft cantilever would be the
24 correct approach.

25 So Klein is head-on saying that highest impacts happen in the fore-
26 and-aft direction. And I will just note that Klein, just with respect to the fork

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1 blades, not the steerer, says that the forces might be slightly on the inside,
2 but it gives no caveat for the steerer tube.

3 JUDGE JUNG: Okay. Klein was not originally cited in the
4 Petition, but how do you want us to treat Klein? As knowledge in the art, or
5 just as a --

6 MS. BHATTACHARYYA: Yes, Your Honor. It's just to address
7 the point that -- I mean, it's already in Denk, but it just bolsters Denk that
8 Klein is again saying that it was known that the highest impacts in the
9 steerer tube happen in the fore-and-aft direction. This is not something that
10 Patent Owner discovered.

11 JUDGE JUNG: If we agree with you on that proposition, that
12 Denk does show that you need to increase strength of the vertical plane, we
13 don't have to reach Klein at all. We don't have to bring that into the
14 obviousness analysis. It's already something that's already in Denk. Is that
15 your position?

16 MS. BHATTACHARYYA: Your Honor, it just bolsters Denk, but
17 I agree that it's already in Denk. And Galasso also teaches the same thing,
18 and Galasso was actually -- it was used as a prior art reference during
19 prosecution. And Galasso also teaches that the maximum stresses are in the
20 fore-and-aft direction.

21 JUDGE JUNG: There's also dispute about each side's declarant
22 and whether or not they're a person of ordinary skill in the art. Anything
23 you want to say on that?

24 MS. BHATTACHARYYA: Absolutely, Your Honor. I would just
25 point to our Slide 6. So, Your Honor, Petitioner's expert, Dr. Slocum, he is
26 a POSITA under either party's definition.

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1 Now, Patent Owner has provided a definition that requires a
2 POSITA to have a master's degree or higher in mechanical engineering with
3 experience in design of vehicle components or like technology.

4 Petitioner's expert, Dr. Slocum, he has extensive experience with a
5 lot of technologies that are related to vehicle components. And Dr. Slocum,
6 he's a professor of mechanical engineering at MIT with decades of
7 experience in the design of optimal mechanical and structural design.

8 At a minimum, Dr. Slocum has experience with like technology,
9 and he has experience with vehicular technology as well. It's in his CV in
10 his deposition transcript, but we're saying that at a minimum, he has
11 experience with like technology.

12 I also want to address here that Patent Owner criticizes Dr. Slocum
13 as being a generalist. He is not. He is a professor. His research is geared
14 towards precision engineering, so he has lots of expertise in the design of
15 mechanical components.

16 And frankly, Your Honor, Patent Owner's expert, Dr. Parnell, he is
17 even more of a generalist if you're going to compare because he provides
18 expert consulting services for even non-engineering subjects, like budgetary
19 planning. And I mean, he's a full-time expert consultant. He has no other
20 day job. And he provides consulting services in a lot of different fields.

21 And Dr. Parnell, Patent Owner's expert, he's alleged to have
22 extensive experience in vehicular components, but those are all related to
23 four-wheel vehicles like ATVs and trucks, not bicycles and motorcycles,
24 which are the subject of the '993 patent.

25 JUDGE JUNG: I don't have any more questions. Do you have
26 any other remarks you want to bring up about the 491 case?

1 MS. BHATTACHARYYA: Yes, Your Honor. I mean, we have
2 addressed so many different points, so I will just quickly go through my
3 slides to see if there's anything else.

4 I just want to quickly touch on the Galasso reference. Your Honor,
5 as I mentioned earlier, and Galasso was applied by the examiner during the
6 prosecution. And Galasso is discussed in Petitioner's Slide 12.

7 And contrary to Patent Owner's assertion, Galasso teaches that its
8 design can be applied to all the tubes of a fork chassis. And Galasso
9 expressly says that the steerer tube is one of the primary structural elements
10 of a fork. And this is in Galasso's column 2, lines 45 to 63.

11 So Galasso says you can use this design for any component of a
12 fork chassis and then explicitly lists steerer tube as the primary structural
13 element of the fork chassis. So from this, a POSITA would know that
14 Galasso's design can be applied to a steerer tube.

15 And then Galasso again explicitly teaches that higher stresses are
16 happening in the fore-and-aft direction. And as Galasso's Figure 2 shows
17 the maximum thickness of the tube is aligned in the fore-and-aft direction.

18 The only way Patent Owner amended around Galasso during
19 prosecution was by adding that the outer circumference of the tube is
20 circular, whereas in Galasso, if you see in Figure 2a, the outer circumference
21 is elliptical and the inner circumference is circular, but it still has the
22 maximum thickness of the tube aligned in the fore-and-aft direction.

23 So Galasso is just another reference -- and this was in our Petition
24 as well -- and along with Klein and Denk, that teaches that the areas of the
25 maximum thickness of the tube should be aligned in the fore-and-aft
26 direction. And I also want to point out --

1 JUDGE JUNG: Just to be clear, Galasso was actually not part of
2 your 103 combination for any of the challenges. How do you propose that
3 we --

4 MS. BHATTACHARYYA: I would use Galasso also as a
5 teaching reference. It addresses the point that it was known at the time the
6 '993 Patent was filed that a bicycle steerer tube experiences or bears the
7 highest loads in the fore-and-aft plane of travel.

8 Once you know that fact, and then you see Denk, and Denk's
9 orientation, and given all the discussions in Denk, you would know how to
10 orient Denk's areas of maximum thickness in the plane of travel. And --

11 JUDGE JUNG: Are you using Galasso to bolster Denk or just
12 another example of something that's already in Denk? In other words, is
13 Denk missing something that you're trying to cover with Galasso?

14 MS. BHATTACHARYYA: No, Your Honor. Denk is not
15 missing anything, Your Honor. And the reason we bolstered it and added
16 this reference in the Reply is just to counter the point the Patent Owner
17 makes in the Patent Owner's Response that they sort of discovered this
18 phenomenon that the highest loads occur in the fore-and-aft direction. And
19 we're saying that, no, like, all of these prior art references teach that.

20 And the other reason we added this is Denk teaches all of this
21 reference, all of this, but Denk -- and maybe I should -- I'll just go to Slide
22 Number 18. Patent Owner has also argued that a POSITA would not have
23 used Denk as a steerer tube. And so, and that's why we brought in other
24 references that are specific to a steerer tube, to further enhance Denk.

25 I just want to address that Denk doesn't say the word steerer tube
26 expressly, but Denk, in column 4, says that the lightweight tube design is

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1 suitable for practically all tubular components of a bicycle. That is the top
2 tube, down tube, seat tube, head tube, fork tube.

3 And a POSITA would know that the steerer is a fork tube. And
4 Patent Owner disagrees with that, but there is a lot of evidence that shows
5 that a POSITA will understand when it says fork tubes that the steerer is part
6 of a fork tube.

7 And I also want to point to Denk's Claim 18, which says that the
8 lightweight component is designed in such a way that it is formed as part of
9 the bicycle fork. I just want to emphasize, it's not talking about tubes. It's
10 saying, "as part of a bicycle fork." And even Patent Owner's own expert,
11 Dr. Parnell, agrees that the steerer tube is a key component of a bicycle fork.

12 So it's all there. Denk is saying you can use it as a fork tube. It
13 says you can use it as part of a fork. And Your Honor, this is an obviousness
14 combination. You're not talking about anticipation here. So reading Denk,
15 a POSITA would know that you can use Denk's design as a steerer tube.

16 So again, I just want to emphasize that Denk has everything, but
17 just to address Patent Owner's arguments, we applied Klein and Galasso and
18 all of those other references, too.

19 JUDGE JUNG: Just to summarize the result of your statement,
20 just to make sure everything is clear, we don't really have to reach Galasso
21 for anything. For Petitioner, there is enough in Denk combined with the
22 secondary reference according to the Petitioner. Is that correct?

23 MS. BHATTACHARYYA: Yes, Your Honor. Denk has
24 everything. And the only reason we even applied Moechnig is just because
25 Denk doesn't say how to mount your tubular bicycle.

26 There was a claim element about the bottom of the tube being

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1 attached to the crown and the top of the tube being attached to the
2 handlebars, and those are very common elements. They are in the
3 background section of the '993 Patent, but we just added Moechnig just in
4 addition to applicant's admitted the prior art.

5 JUDGE JUNG: Okay. Now you're almost halfway through your
6 time. Do you want to say any last things about this case before we move on
7 from it?

8 MS. BHATTACHARYYA: I just want to address Campagnolo for
9 one second because I know Patent Owner has said that Campagnolo teaches
10 the opposite of Denk in everything. So Campagnolo -- and this is in Slide
11 19.

12 Campagnolo teaches that a bicycle tube should take into account
13 the actual stresses involved and their possible variations. Now, and
14 Campagnolo also teaches the inner circular cross-section and outer elliptical
15 cross-section.

16 Now, Campagnolo is all about the frame tubes. And Petitioner
17 doesn't disagree that for the frame components, unlike the fork tubes, the
18 stresses do happen side to side more because of the torsional effect. But the
19 teaching in Campagnolo that the tube should account for the actual stresses
20 involved and their possible variations still applies, and the design that's
21 shown in Campagnolo still applies. So I just wanted to point out that.

22 And if Your Honors don't have any other questions about the
23 dependent claims or anything, I'll just move to the 492.

24 JUDGE JUNG: I have no further questions.

25 MS. BHATTACHARYYA: So Your Honor, do you have
26 questions that I could start with for the 492 before I jump into my slides?

1 JUDGE JUNG: I don't know if we indicated this clearly in our
2 positions, but we had some issues with your 102 Ground, so rather than
3 focusing on the 102 Ground, maybe it's just better if you just discuss your
4 103 Grounds for this case instead.

5 MS. BHATTACHARYYA: Absolutely, Your Honor. I'll just
6 start with the 103 Grounds then. Your Honor, I'll just start with Slide 9.
7 And this addresses both Grounds 1 and 2 because it's with respect to Fox,
8 the Fox reference.

9 So Ground 1 is an anticipation ground based on Fox, and Ground 2
10 is an obviousness ground based on Fox in combination with JP '279 and
11 Nagai. And Your Honor, with respect to the Fox Grounds, Patent Owner
12 currently argues that the background section of the '207 Patent criticizes
13 prior art such as Fox.

14 That is not correct. Nowhere does the background of the '207
15 Patent mention Fox. And it also doesn't describe prior art like Fox because
16 Fox's camshaft, the camshaft 58, has a rotary cam surface 56, and that rotary
17 cam surface has variable radii. And that's how you can adjust or fine tune
18 the compression-damping characteristics by rotating in that rotary cam
19 surface.

20 And nothing in the background section of the '207 Patent talks
21 about a camshaft having a rotary surface with variable radii or all of that, so
22 it's nowhere mentioned there. So the background of the '207 patent is very
23 different from Fox or any of the prior art that is applied here. So I just
24 wanted to mention that before I jump to the Fox-based obviousness ground.

25 Patent Owner's primary argument for both the Fox-based Ground
26 2 and the Yi-based Ground 3 is that the tapered surface is added to the entire

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1 camshaft. That means all the different cam surfaces. And so if you adjust
2 one position, all of the positions will be adjusted.

3 That is entirely incorrect, and it mischaracterizes the record. And
4 I'll just go to Slide 10. As shown here, the Petition, the expert decs, the
5 Reply all make it abundantly clear that in the Fox Ground, JP '279's tapered
6 surface is added to only the Fox, that the cam surface 56, which is the rotary
7 surface.

8 The taper is not added to the unrecessed portion of the camshaft,
9 which corresponds to the closed position. So the rotary surface corresponds
10 to the open position. The unrecessed surface corresponds to the closed
11 position. So it's just added to one position.

12 In Yi, the JP '279 taper is added to Yi's camshaft only at the cam
13 surface, which corresponds to the second medium-velocity position. So in
14 neither of the obviousness grounds is the taper added to the entire camshaft.

15 And because it's only added to one portion, and if you are now
16 doing fine-tuning by axially moving the camshaft left and right, because the
17 other surfaces are flat, the damping characteristics of those other positions
18 corresponding to the other surfaces are not changed. Only the surface that
19 has the taper, the damping characteristics will change there.

20 And Patent Owner points to some CAD drawings that Petitioner's
21 expert, Dr. Slocum, had presented, but Dr. Slocum made it very clear that
22 this is just for illustration purposes. And he just wanted to show how a
23 tapered cam interacts with the driver rod to change the valve characteristics.

24 In his declaration, he makes it very clear that only a portion of the
25 camshaft can have the taper, the other portions can be flat. And so here,
26 with Fox and Yi, the tapered portion corresponds to the position that is being

1 adjusted.

2 So I think I addressed that point. If there's any questions, I'm
3 happy to answer that. If not, I'll just move to Slide 11.

4 Your Honor, I'm just going through the counterpoints that Patent
5 Owner has raised. And they're kind of similar for both the two obviousness
6 grounds, so I'm just going to just go through and address all the points that
7 Petitioner -- sorry, Patent Owner has raised.

8 JUDGE JUNG: Do you agree that both sides' arguments for these
9 two different obviousness grounds are substantially similar because the
10 primary reference is substantially similar?

11 MS. BHATTACHARYYA: Yes, Your Honor. The only
12 difference between Fox and Yi is that Fox's camshaft has two surfaces, two
13 cam surfaces. There were three cam surfaces in the unrecessed portion that
14 correspond to the open and closed positions. Yi has three cam surfaces
15 corresponding to low-velocity, medium-velocity, and high-velocity flow.

16 Petitioner's position for both these obviousness grounds is that you
17 would add JP '279's tapered surface to one of the positions. And I also want
18 to address this, with Fox, for instance, Patent Owner's argument that the
19 taper is added to all the surfaces makes even less sense because closed
20 position is closed. Closed is closed. You do not have to adjust that further.
21 It's only in the open position that the taper makes any sense because you
22 would want the open position to be adjustable to adjust the amount of flow --
23 hydraulic fluid flow that is happening between the two chambers.

24 So moving to Slide 11, Patent Owner has argued that there is no
25 motivation to add JP '279's taper to Fox or Yi. And that is, again, incorrect
26 because JP '279 expressly teaches fine-tuning of both compression and

1 rebound damping.

2 So the fine-adjustment concept is expressly taught by JP '279.

3 And so a POSITA would have been motivated to add the taper to both Fox's
4 camshaft and Yi's camshaft in order to fine-tune or customize the
5 compression damping setting. Going to Slide 12 --

6 JUDGE JUNG: When you say fine adjustment, what does that
7 mean?

8 MS. BHATTACHARYYA: Fine adjustment is that you can have
9 very fine resolution control. And it's in slide 12.

10 Petitioner's expert, Dr. Slocum, has explained JP '279's tapered
11 surface configuration allows for fine resolution control as compared to the
12 cam lever arrangement of Fox. And this is because the combination of the
13 taper with Nagai's bolt mechanism for moving the camshaft left to right
14 would adjust the damping characteristics in a linear manner as opposed to a
15 non-linear adjustment by a lever and cam surface.

16 It is a linear way of adjusting. So if you have a taper, and you're
17 using a bolt mechanism, which is like a screw, you can make very fine
18 adjustments. You can make very fine adjustments. You cannot have the
19 same control with just a lever and a cam. You're just moving a lever, da-da-
20 da. It's very hard to have that linear transition, linear control of adjustment.

21 And so Nagai's bolt mechanism, which is the adjuster assembly, in
22 combination with the taper, you can have that fine resolution control. And
23 that gives the fine adjustment or the fine tuning, which you just cannot have
24 with Fox's cam lever arrangement.

25 Yes, you can do adjustments. You can do adjustments in the rotary
26 surface, but it won't be fine adjustments because you can't have that

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1 resolution with just a lever and a cam. So that's what we mean by fine
2 adjustments.

3 JUDGE JUNG: Just to verify, Fox has two positions, 100 percent
4 damping and 0 percent damping. And then when you do the proposed
5 modification in JP '279, you have the 100 percent and the 0 percent
6 damping. And at the 0 percent damping, you have to fine adjust, let's say 0,
7 and slope that to 100 percent. Is that right?

8 MS. BHATTACHARYYA: Yes, Your Honor. And again, it
9 depends on how much taper you're adding, whether you're going to get from
10 0 to 100 percent or you're going to get 0 to 50 or 60 percent. It would sort
11 of depend on the slope of the taper and everything, but yes. In an open
12 range, you will have a lot of gradation or continuum, if you will, to get that
13 fine adjustment.

14 And really, it's the combination of the taper and Nagai's bolt
15 mechanism, but again, as Dr. Slocum has testified, it's -- let me make sure I
16 have the slide -- as testified, just with the taper itself, you will get some fine-
17 tuning because it's really easy to adjust. It's easy to fine-tune with a taper as
18 compared to a rotary cam surface.

19 Now, Patent Owner has argued that if you roll out the rotary cam
20 surface of Fox, it will just be like a taper, but in practical sense, it is much
21 easier to move along and slide, as Dr. Slocum has testified, than using a
22 lever to kind of rotate around a rotary cam surface. So we're talking
23 practical, the taper combined with Nagai's bolt mechanism would give you
24 the high-resolution control.

25 JUDGE JUNG: That argument was also the subject of a
26 contention by Patent Owner that that is something new that wasn't originally

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1 in the petition. Is that correct?

2 MS. BHATTACHARYYA: That is absolutely not correct. The
3 fine-adjustment point is in the Petition, and I'm happy to give the cites. But
4 the fact that JP '279 expressly teaches fine adjustment was in our petition.
5 And that is why, Your Honors, in the Institution Decision found that
6 Petitioner's motivation to combine is not based on hindsight, because that
7 teaching is already in JP '279.

8 And Petitioner -- sorry, Patent Owner has also argued that tapered
9 cams are a new thing. And that was an argument that they raised in the
10 Patent Owner Response. So in Petitioner's Reply, Petitioner has provided
11 some, several different references: Exhibit 1019, 1020, 1021, 1022. These
12 are all, actually, very old references that all teach tapered cams.

13 In Exhibit 1020, for example, also says that tapered cams are very
14 easy to manufacture. And Petitioner's expert, Dr. Slocum, has also testified
15 that tapered cams have been known at least 100 years, for probably 200
16 years or more.

17 So this argument, it's not a new reply argument. It is responding
18 to Patent Owner's argument in the Patent Owner Response that tapered cams
19 are a new thing. And these references say, like, they are not. They have
20 been known for a very long time in many different mechanical arts.

21 Like, some of the references are in electrical arts, some are in
22 medical arts, and they all talk about tapered cams. And this, again, is
23 another motivation why, you know, you would use JP '279's taper with Fox
24 and Yi. I also want to address that fine-tuning of compression damping was
25 also well known. And I just want to mention on the record that the tapered
26 cam references, they are all in Slide 13.

1 And moving to Slide 14, during prosecution, Patent Owner
2 admitted that the prior art reference, Wicker, was applied where the
3 examiner found it taught fine and coarse tuning. Specifically, Patent Owner
4 argued during prosecution that the actuator nut 28 in Wicker is merely a
5 fine-tuning device that necessarily changes the damping characteristics
6 corresponding to all positions of the operating handle 32.

7 So during prosecution, Patent Owner admitted that fine-tuning was
8 already known in the art. And for them to argue in this IPR proceeding that
9 fine-tuning is a new thing that they came up with, that just mischaracterizes
10 the record.

11 And during prosecution, Patent Owner also argued that Wicker
12 doesn't teach independence between the different positions, so if you're
13 fine-tuning one position, another position would also change, but the
14 examiner did not agree with that. And the only way the claims got allowed
15 was by adding in the independent claim 1 that the valve-actuating assembly
16 comprises a camshaft.

17 So that limitation about a camshaft was added into the independent
18 claim, and that's how the claims were allowed. And here, in both Fox and
19 Yi, the valve-actuating assembly has a camshaft. And just to emphasize,
20 Wicker teaches fine-tuning, and JP '279 also teaches fine adjustment of both
21 compression and rebound damping.

22 Patent Owner has argued that JP '279's tapered surface 45, which
23 is used for the rebound damping, provides fine adjustment relative to the
24 tapered surface 44, which is for compression damping.

25 So Patent Owner's argument that this is just fine-tuning relative to
26 the compression and rebound damping, that is not correct. And as

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1 Petitioner's expert, Dr. Slocum explains, even just one of those tapered
2 surfaces provides fine-adjustment capability over having no wedge.

3 And then he, Dr. Slocum, goes on to explain that compression and
4 rebound damping are being fine-adjusted in JP '279. One is not done
5 relative to the other. You are adjusting one finely to do one thing, and at the
6 same time, you're adjusting another one to do something finer. And this is
7 in Slide 14.

8 And so I want to address the bodily incorporation argument that
9 Patent Owner makes, and this is in Slide 15. Patent Owner has argued that
10 JP '279's taper and Nagai's bolt mechanism, they won't fit into the boxes or
11 the eyelets, which is the top part of the shock.

12 But it is well established that the test for obviousness is not
13 whether the features of the secondary reference can be bodily incorporated
14 into the structure of the primary reference, rather, what are all of these
15 references teaching in combination.

16 And here, a POSITA would have known that the combination of
17 Fox or Yi with JP '279 and Nagai would improve compression damping to
18 account for the rider's weight, skill level, terrain, et cetera. Fine-tuning or
19 customization is desired. In fact, all of these references say that kind of
20 customization is desired. So a POSITA would have been motivated to do
21 that.

22 And also, all of these references, these are teaching in very basic
23 mechanical components like gears and cams and axles. Any mechanical
24 engineer would be able to resize, design, and kind of come up with this
25 invention.

26 And staying with Slide 15, I also want to address that Patent

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1 Owner's other argument, with respect to Yi, that you don't have to combine
2 Yi with JP '279 or Nagai because Yi itself can be resized or redesigned to
3 provide the fine-tuning. But that is not a correct legal argument because to
4 establish obviousness, Petitioner doesn't have to show that the combination
5 is somehow it's the best option.

6 There's a case cited in Slide 15, *Intel v. Qualcomm*, that says that it
7 is not necessary to show that a combination is the best option, only that it is
8 a suitable option. And here, Petitioner has shown that the combination of Yi
9 with Nagai and JP '279 is a suitable option to provide fine adjustment of
10 compression damping.

11 And lastly, Patent Owner has argued that Grounds 2 and 3, which
12 is the Fox and Yi Grounds, do not have a separate adjuster assembly. And
13 that is, again, incorrect.

14 Your Honors, the Petition expressly states that JP '279 has a
15 mechanism with the gear 49 and the feed axle with which you can actually
16 move the camshaft left and right along the longitudinal axis. But then the
17 Petition goes on to say that a POSITA would have been motivated to use a
18 simplified mechanism, such as Nagai's bolt 141, in place of JP '279's gear
19 and feed axle.

20 And Nagai's mechanism also has an inbuilt limiting means. So it
21 is not just providing the axial movement. It has the limiting means. So a
22 POSITA would have been motivated to use Nagai's bolt mechanism in place
23 of the gear and feed axle taught by JP '279 for the axial movement. And this
24 is discussed in Slide 16.

25 So Patent Owner's argument that there is no distinct adjuster
26 assembly in the Petition discussion, that completely mischaracterizes the

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1 record because the record is very clear that yes, JP '279 has a gear and axle
2 mechanism which will serve as the adjuster assembly, but then Nagai also
3 teaches a far simpler mechanism with a limiting means and that a POSITA
4 would choose a mechanism like Nagai's. And Nagai's mechanism, it's a
5 distinct mechanism that would be added to the camshaft.

6 Do Your Honors have any other questions for the Yi or the Fox-
7 based obviousness grounds?

8 JUDGE JUNG: Is there anything you'd like to add about the level
9 of skill argument specific to 492 that we haven't already discussed with
10 491?

11 MS. BHATTACHARYYA: Yes, Your Honor. And I'll just go to
12 Slide 5.

13 So as with the 491 IPR, Petitioner's expert, Dr. Slocum, is a
14 POSITA under either party's definition. And so, Patent Owner actually
15 deviates from their own expert's definition of a POSITA to argue that a
16 master's degree or higher in mechanical engineering with experience in
17 design, vehicle components, or like technology is required.

18 If you look at Patent Owner's expert, Dr. Parnell's, declaration, he
19 basically says a master's degree or higher in mechanical engineering is
20 required. Patent Owner adds that you need that additional experience with
21 the design of vehicle components or like technology.

22 Either way, Dr. Slocum has that. As I mentioned previously for
23 the 491 IPR, Dr. Slocum is a professor of mechanical engineering at MIT.
24 He has decades of experience in the design of technologies that are related to
25 bicycles, and vehicle suspensions and other vehicular components. So he is
26 a POSITA under either party's definition.

1 I just also want to note that Patent Owner's definition for both the
2 IPRs, right, they say that a POSITA has to have experience with the design
3 of vehicle components. I just want to note that that is a very broad definition
4 because, I mean, if you have experience in the design of bicycle pedals, that
5 doesn't mean you can address what's happening with the steerer tube or the
6 shocks. So the definition that Patent Owner proposes is really broad, and it's
7 not appropriate for the purposes of either the '993 or the '207 Patents.

8 Petitioner's definition, which is more geared towards the design of
9 vehicle suspension technology, or in the case of the '993, the structural
10 element, is a more appropriate definition, but either way, Petitioner's expert
11 meets the definition of both parties.

12 JUDGE JUNG: Anything else you want to bring up for the Yi
13 reference? We didn't really discuss in detail --

14 MS. BHATTACHARYYA: The Yi reference, yes, I'm happy to --
15 frankly, Your Honor, the Yi reference is probably the cleanest of all the
16 three. The Yi Ground is probably one of the strongest grounds, or the Fox
17 sounds pretty good.

18 JUDGE JUNG: You are down to about 14 minutes of your total
19 argument, though, so keep that in mind as well.

20 MS. BHATTACHARYYA: I think I'll spend some time on Yi
21 before I save the rest for rebuttal. So I will jump to Slide 19.

22 So Yi has a valve-actuating assembly comprising a lever 201, an
23 eccentric camshaft 2 and damping adjusting rod 10. And Yi's camshaft is
24 rotatable between three positions. The first is low-velocity position, the
25 second medium velocity and the third high-velocity flow. And here we're
26 talking about the flow of the hydraulic fluid between the two compressions

1 and the rebound chambers.

2 As the Petition explains, a POSITA would have been motivated to
3 add JP '279's tapered surface to Yi's cam surface corresponding to the
4 medium-velocity setting to allow fine tuning. And the Petition says that you
5 could add it to the high-velocity setting as well, but it makes more sense to
6 add it to the midpoint, and then you can have a much broader range. But
7 you could add it to anything, but the Petition really focuses, as an example,
8 on the medium-velocity position.

9 And because the tapered surface is added to only one of the cam
10 surfaces corresponding to the medium-velocity position, axial displacement
11 of the camshaft does not affect the damping characteristics of the first or the
12 third position, those remain flat. And a POSITA would have known how to
13 axially move Yi's camshaft along the longitudinal axis using the guide's
14 stopper bolt 141, which is the adjuster assembly.

15 Going to Slide 20, there is sufficient motivation to combine Yi
16 with JP '279 and Nagai, and also reasonable expectation of success. And
17 this is because Yi expressly talks about the fine adjustment, and JP '279
18 talks about fine adjustment. Yi also talks about adjustment being desired,
19 and it is also in Fox, and all the references says that fine adjustment is
20 desired to account for the rider's weight, terrain, and all of the conditions.

21 And as Petitioner's expert, Dr. Slocum, has testified, the proposed
22 combination would be simple, cost-effective, and would have yielded
23 predictable results. And this is because the tapering process through CNC
24 machining, it's a very simple process.

25 Earlier, I mentioned that Exhibit 1020 talks about how easy it is to
26 make a tapered cam, and CNC machining has been known for decades now.

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1 So it's not a very difficult process to create a tapered cam surface. And as I
2 previously mentioned, this is a very simple mechanical concept that a
3 POSITA would have known how to put together, so there would be a
4 reasonable expectation of success with the combination.

5 So I can go on, but I'm happy to stop here. I can also address the
6 anticipation ground if Your Honors have any questions. But I'll just save
7 the rest of the 10 minutes for rebuttal. Thank you, Your Honors.

8 JUDGE JUNG: Thank you.

9 MR. HICKEY: Good afternoon, Your Honors. Michael Hickey
10 for SRAM, LLC. I'm going to be speaking on the '207 Patent. I figured
11 that since we just talked about the '207 Patent, the 492, it would be easiest to
12 just move right into that. And then Mr. Walsh will talk about the '993
13 Patent.

14 Obviously, I'm happy to talk about the anticipation argument. I
15 think that the Board understands that based on the papers that have been
16 submitted, I think our position about the structure that's required for both an
17 adjuster assembly and a valve-actuating assembly, and having sufficient
18 structure to distinguish the two and not have something that's completely
19 subsumed by the valve-actuating assembly is required by the claim
20 language, as well as the Specification and consistent with the prosecution
21 history.

22 I'd also just say, even by virtue of the claim language that says that
23 those two components are operatively connected, a valve-actuating
24 assembly, if the adjuster assembly is completely subsumed within it, it can't
25 be operatively connected to itself. And so I think from that standpoint, Fox
26 cannot anticipate every move of the lever, and Fox results in unique

1 damping characteristics.

2 So what I'd like to do is move immediately to the obviousness
3 grounds unless there are any questions on anticipation.

4 JUDGE JUNG: No.

5 MR. HICKEY: Okay. So starting with Ground 2, Judge Jung,
6 you've pointed out the, you know, similarities between the Yi and Fox
7 references. So a lot of what I say here is going to be equally applicable.

8 But I think it's really, we have a number of arguments that I think
9 the Board already understands in terms of what Dr. Slocum has done in
10 terms of applying cam surfaces to the entirety. And we can go back into
11 that. I think that his models are very clear as to what he did and the
12 adjustments that are necessarily required, but I think I'm just going back to
13 the Institution Decision.

14 And the Institution Decision at page 25, with respect to the
15 obviousness combination of Fox and JP '279, as well as with Nagai, at page
16 25, it says, Petitioner's position appears to be that Fox and JP '279 provide
17 different amounts of adjustment to damping characteristics.

18 There's a similar statement that the Board made in its Institution
19 Decision at page 32 with the combination of Yi and JP '279 and Nagai. At
20 page 32, the Board said, Petitioner, however, implicitly argues that Yi's
21 damping adjustment is not as fine as JP '279's damping adjustment.

22 And I think that's really critical to focus in on what those questions
23 were that the Board had. The Board further said on page 32 that this was
24 exactly the kind of issue that needed to be developed further through the
25 record.

26 And what you do through the record is you provide evidence. It's

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1 not just speculation. It's not just suggestions. It's evidence. And what we
2 did was we came forward with evidence. We came forward with evidence
3 from a POSITA, Dr. Parnell.

4 We could get into the definitions of what a POSITA is. We
5 obviously have some differences about that. What I would point out, and I
6 think, Petitioner has, you know, somewhat disparaged Dr. Parnell. He is a
7 PhD in mechanical engineering from Stanford University. I realize that's
8 not the same as MIT, but it's got a pretty good reputation.

9 And the suggestion that he lacks any design experience in vehicle
10 suspension technology, as it applies in this instance to the suspension system
11 for the 492 IPR, is just not true. In footnote 1 of the Sur-reply, we
12 specifically call out that Dr. Parnell testified extensively about his many
13 years of experience in the vehicle suspension technology area. And that's at
14 Exhibit 1018, page 15, line 20 through page 29, line 23 of his deposition.

15 And there's nothing in the 492 that limits vehicle suspensions to
16 bicycles. It's actually just a shock absorber for a suspension system
17 generally. So I just want to make that clear. So we brought forward this
18 evidence from Dr. Parnell and what it keys in about this issue of fine-tuning,
19 JP '279 does use the word or the phrase fine-tuning. But if you look at Dr.
20 Parnell's declaration, and I would encourage you to do so at paragraph --
21 and that's at Exhibit 2016 -- paragraphs 81 through 88, there's a lengthy
22 description about what is fine-tuning. And Judge Jung, you asked that, what
23 is that meaning?

24 Well, it's a relative term. It only means something compared to
25 something that's coarse. And the Wicker reference did talk about fine
26 versus coarse tuning. JP '279 talks about fine-tuning because there are

1 different slopes to the slider. So it's talking about one slope of the slider
2 being, you know, more finely tuned than the other.

3 But when you're talking about that fine-tuning, and then you're
4 trying to compare it to a different reference that you don't know the shape
5 of, that you don't know the size of, you don't know whether the addition of
6 JP '279 will, in fact, provide a benefit. And that's the key aspect is when the
7 Board raised this issue about the implicit argument of whether it was as fine
8 or whether it provided differing amounts of damping-to-damping
9 characteristics, that was centered on really the question of, is there a benefit
10 to this combination? Would one of ordinary skill in the art want to do this
11 because they perceived a benefit?

12 And in Slide 19 of our presentation, we maintain that Fox is
13 already capable of providing any damping characteristics between closed
14 and fully open, and that the damping adjuster of JP '279 is not finer or
15 superior to Fox's damping adjuster, and that they each provide a full range
16 of suspension settings and damping characteristics.

17 And in fact, the reason I hadn't pulled into full-slide mode,
18 presentation mode on the slide, is because I want to point something out that
19 I think is critical from the Petition itself, which is Paper 1 of the Petition.
20 And this is talking about Fox.

21 And it says that the assertion by the Petitioner is that the actuator
22 arrangement⁵⁴ of Fox's shock absorber 10 is an adjuster assembly that's
23 operatively connected to Fox's valve-actuating assembly. We obviously
24 disagree with that, but look at the next line.

25 It says actuator arrangement 54 finely adjusts the damping
26 characteristics of at least the open position of the valve-actuating assembly.

1 The Petition has taken the position that Fox does fine adjustment already.
2 So then what are we comparing?

3 JUDGE CHERRY: Mr. Hickey, the law is clear that although a
4 benefit could be a basis of a motivation to combine, *KSR* tells us that, if
5 something is known, if it could improve it, if it's a known method, it's likely
6 obvious. So, I think whether there's a benefit is just one aspect. I mean, it
7 was known to do this type of fine adjustment, correct?

8 MR. HICKEY: But why would you combine JP '279 with a
9 device that already did fine tuning?

10 JUDGE CHERRY: Well, doesn't the Petition allege that it would
11 improve the fine tuning?

12 MR. HICKEY: And that's what the Petition alleges, but there's no
13 evidence of that. That's just speculation. And in fact, what happens --

14 JUDGE CHERRY: Doesn't Dr. Slocum say that?

15 MR. HICKEY: What's that?

16 JUDGE CHERRY: Doesn't Dr. Slocum say that?

17 MR. HICKEY: Well, Dr. Slocum actually reverses himself
18 because in his supplemental declaration, in reply, he takes the new position
19 that Fox and Yi only provide coarse adjustment. That's a new argument.
20 That's a new argument that is put forward.

21 I realize why he did it, because the Petition doesn't support what
22 he said in the first place. And so he has come up with the new argument
23 about coarseness versus fineness because our evidence showed that fineness
24 and coarseness were only relative. And that's in the Parnell Declaration, not
25 just at paragraph 81 to 88, but at paragraphs 32 to 34 with respect to Fox and
26 paragraphs 100 to 106.

1 And so I take it from the standpoint of the evidence from one of
2 skill in the art in the first instance as opposed to taking a position and then
3 changing it is that there is not a benefit. There's not an improvement
4 because what you're talking about -- and if I, you know, turn to Slide 21,
5 this is a demonstration that the slider of JP '279 is not inherently finer than
6 Fox's cam 56. They have the same adjustment range.

7 If you go to Slide 22, in the same way that moving slider 44 right
8 or left moves the adjuster rod 34 up or down, rotating Fox's cam 56 moves
9 Fox's adjuster rod or driver 34 up or down. It's the same effect.

10 JP '279, like I said before, just simply says that one of its two
11 angled surfaces is finer than the other. And that allows for smaller
12 adjustments due to a lesser slope, but that doesn't suggest a general level of
13 fineness or a benefit above any other damper.

14 And this aspect, the new argument that is raised in reply by
15 Petitioner and their proffered expert, Dr. Slocum, is this linear-nonlinear
16 distinction, that that is something that is this considerable benefit, that you
17 have this greater resolution that is possible with a linear versus a nonlinear
18 surface.

19 But again, looking at the evidence from Dr. Parnell, Exhibit 216 --
20 this is Slide 25, paragraphs 84 to 88 -- is that a cam can provide the exact
21 same output as a tapered surface. And so if you look at a particular cam
22 shape on the left, you look at that cam output at the adjuster rod, and then
23 you compare that to an inclined plane output like you would have for JP
24 '279's slider 43, they can achieve the exact same output. And so --

25 JUDGE PETRAVICK: Counsel, are you saying that the two
26 devices are the same and they're basically the same mechanism performing

1 the same function?

2 MR. HICKEY: I'm sorry. Was that a question?

3 JUDGE PETRAVICK: Yes. Is that what your position is?

4 Therefore, because they're exactly the same sort of thing, it would not be
5 obvious to swap one out for the other?

6 MR. HICKEY: What I'm saying is there's no clear benefit shown
7 by the evidence of swapping out one for the other.

8 JUDGE PETRAVICK: But there is no advantage from one to the
9 other. It's just that they're the same, and one is not better than the other?
10 They're both the same type of mechanical invention, they do the same thing,
11 and they function the same way?

12 MR. HICKEY: Correct, correct.

13 JUDGE PETRAVICK: So why isn't that a substitution of one
14 known mechanical device for another? Why wouldn't that be obvious?

15 MR. HICKEY: Again, I go back to the idea of obviousness. Is
16 why would there be a motivation to combine? Why would there be a
17 motivation to substitute these elements is to get a particular benefit.

18 JUDGE PETRAVICK: Counsel, what I'm confused about your
19 argument, and I'm trying to figure out what your argument is. You keep
20 talking about a benefit, the benefit Petitioner talks about.

21 I'm thinking about obviousness law and *KSR*. It's clear that a
22 simple substitution of one element performing the same function could be
23 obvious. So why doesn't that law apply to what you're telling me about the
24 evidence that these two things are the same, and therefore there's no benefit
25 from one or the other, but they're both the same and they would operate the
26 same way and provide the same function?

1 MR. HICKEY: Well, then I should be clear in saying that the
2 structures are not the same. They are different structures. And applied,
3 trying to apply the slider to the cam surface of Fox or Yi, it's not clear how
4 that actually would be done. What I was saying was that the output of these
5 two different structures or two different devices can achieve the same
6 benefit.

7 JUDGE CHERRY: Would you say that a person of ordinary skill,
8 a person with a master's degree in mechanical engineering, wouldn't
9 combine these two references? Did you say that? Do you have any reason
10 why that would be your position concerning that?

11 MR. HICKEY: Actually, I do think that that's set forth in Dr.
12 Parnell's declaration where he sets forth that there are problems combining.

13 And hold on. Let me just jump to -- turning to slide 30, we do
14 raise this problem of inoperability with respect to the combination of Yi and
15 JP '279 and Nagai because Yi's camshaft can't be moved axially in the
16 figure on the right as Petitioner posits because of the fixed location of the
17 driving unit and the associated gear coupling. And so it's not clear how that
18 detent system would operate if it was axially displaced. So we did make that
19 operability argument on that combination.

20 JUDGE CHERRY: My problem with all your arguments is that
21 you seem to be assuming some kind of bodily incorporation of these
22 different elements from the references. The references generally teach that
23 there's this possibility for a camshaft, say at the surface, that allows for fine
24 tuning.

25 So why couldn't a person of ordinary skill in the art with a
26 master's degree in mechanical engineering adjust these very simple

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1 mechanical components? This is not a Porsche 911. This is a bicycle and a
2 very simple hydraulic system for a bicycle. It's not that complicated. I
3 guess I'm just having a lot of trouble with what you're saying.

4 MR. HICKEY: Well, again, I take it from the standpoint of it's not
5 just a mere possibility. It's not whether something could be done, but
6 whether it would be done. And so I'm looking at whether you would make
7 that combination when you can --

8 JUDGE CHERRY: These are equivalent structures. And as Judge
9 Petravick explained, *KSR* tells us that when we have two structures that do
10 the same thing, the law of obviousness is it's just a simple substitution. So
11 why aren't we in that realm of obviousness law?

12 MR. HICKEY: Well, again, I think I clarified that I wasn't saying
13 that they have the same structure, that they are different structural elements.
14 They do achieve the same output, assuming that you could put it in a
15 position where it's operable. And I don't think that there is sufficient
16 evidence to show that you could make that operation and be in combination
17 with JP '279.

18 We have to turn to the '993, so I think I'll turn to the '993.

19 MR. WALSH: Thank you, Your Honor. I'd like to first start
20 addressing your questions, Judge Jung, from the first one. What I heard
21 Petitioner say with respect to Moechnig was that they do say that Yi should
22 increase strength in the fore-and-aft direction, and that's just the opposite of
23 what Moechnig actually says.

24 I would cite to the Moechnig reference and to page 1, paragraph 8,
25 where it says it teaches the exact opposite. It says the increase in a fore-and-
26 aft rigidity of the steerer assembly detrimentally affects the fore-and-aft

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1 performance of the steering assembly by communicating greater amounts of
2 fore-and-aft direct loading of the front wheel to the rider. It says not to do it.
3 It says the exact opposite. It teaches side to side.

4 The second thing I heard stated was that Moechnig just applies to a
5 regular bicycle. And if it was a mountain bike, you just use Denk without it.
6 And Moechnig does specifically say it is applied to a mountain bike. That's
7 on page 3, paragraph 33, where it says, this is a street or road bike as it's
8 commonly understood, but it's apparent the steering assembly is applicable
9 to other bicycle configurations such as a mountain and/or dirt bike. That's
10 in paragraph 33.

11 The next thing I wanted to go to with respect to the reference of
12 Denk in general was the statement that Denk says that you have to orient the
13 asymmetry in the plane of travel. And that's just completely wrong, Your
14 Honor.

15 First of all, travel is only mentioned once in Denk, just once. And
16 it is done in the second column where it talks about the fact that the loading
17 that he's talking about -- I'm sorry, the second column, about halfway down,
18 where he's talking about the load on the bicycle is all vertical. The weight
19 of the rider coming down, that's what it is.

20 It does not talk about or use the phrase plane of travel, which was
21 used consistently by Petitioner throughout that when they first speak about
22 it. It doesn't. It talks about the plane of a frame. How is a plane of a frame
23 different than a plane of travel?

24 Here's the frame of a bicycle on my left hand. On my right hand
25 will be the bicycle front wheel, which is attached to a steering tube up here.
26 The plane of travel of the bicycle follows that, and it changes and shifts like

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1 this. The plane of the frame stays like this, the vertical weight going down,
2 whereas the front tube, the front fork, and the steering tube is subject to
3 these different stresses and pressures with respect to the ability to turn.

4 The next thing I'd like to briefly turn to is the statement that
5 Campagnolo teaches that there should be a form of stiffness, and it does just
6 the opposite. First of all, it's interesting to note that what Petitioner tried to
7 do is combine this and say it's not enough to combine it with Campagnolo.

8 Campagnolo is a world-famous bicycle brand that's been around
9 forever, et cetera. And what is that? What do those engineers who are real
10 POSITAs teach? It teaches side to side.

11 Now I'm referring to the second page, lines 29 to 31, where it talks
12 about planes having high transversal stiffness and the need to be stiff
13 without using lightness, which is side to side. Page 3 in the reference lines
14 of, again, 29 to 31, the structures are all positioned so that their cross-
15 sections are arranged with their minimum thickness in correspondence of the
16 plane of the frame. So it's the opposite of what the '993 is.

17 And then the same thing with respect to the Klein reference, even
18 though it was a new reference that's not part of the Petition, where the
19 Petitioner read you something that said that all these forces where you have
20 a uniform thickness, it's increasing all those strengths. It's a simple analysis
21 that appears increasing the strength of the fork legs and the steerer fork can
22 be viewed as the correct approach.

23 The very next sentence contradicts that and says no. It says,
24 however, it's been discovered through actual testing and detailed analysis
25 that forces in the fork blades are displaced to the side where the steerer
26 attaches or the wheel or inside the fork a small amount to the optimum.

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1 Here it's mentioned it's not direct fore-and-aft reinforcement, but two
2 reinforcements thicker walled are shifted to the inside of the fork, as you see
3 in the drawings attached.

4 So that's what we're being, I think, faced with, Your Honor. We
5 are just people saying, oh, yes, it shows this, and that's kind of the problem.

6 Let's speak for a moment about Petitioner's expert. He's a very
7 smart person. He's a great engineer, but here's what he's not. He's not a
8 bicycle person. He's not someone that works on vehicles. When asked to
9 do it, he talks about different things, et cetera.

10 That type of a person can talk about a mechanical force, but what
11 they can't talk about is all POSITAs will know, all these POSITAs know.
12 Because this is about -- and you reference it in the decision. You reference
13 it on page 22 of the decision where you say, this needs more development as
14 to what those forces are.

15 Okay, now we have the trial, and the trial's about evidence. Bring
16 forth the evidence. And what did Petitioner bring forth? The Petitioner
17 didn't bring forth even one person who was an engineer, who works in this
18 field, who works on suspension, who works on steering tubes because it's a
19 company that does those things, not one.

20 It doesn't have its expert that it hires to talk to one of those people
21 and say, what are the forces that are affected? What do people know? So
22 they can't even have that hearsay, none of that. So that's a failure of them to
23 go out and develop and show that, whereas the actual prior art that's in front
24 of you is art that says the opposite of what they're trying to tell you and what
25 their expert's trying to say all POSITAs know.

26 You can't say, I'm going to take Denk and I'm just going to

1 combine it with Moechnig, for example, which is the same thing. Moechnig
2 is stressing in incredible terms the side-to-side reinforcement and why that's
3 necessary, and yet they say it shows the fore-and-aft as well. It doesn't. It's
4 a completely different thing.

5 That's why it's very different to go through this and to claim that
6 all these things just do. That's why it's so -- we have to be fearful, I think,
7 of just hiring an expert to say, this is what all POSITAs know, because then
8 you're going to be able to invalidate any patent because they don't go out
9 and actually find that evidence.

10 This is a bicycle company that is the Petitioner. They have many,
11 many, many patents. All of those patents show that there is a difference
12 between a steerer tube and a fork tube. And there is nothing in evidence that
13 says it's the same except for a hired person who says, oh, POSITAs would
14 know, when it's the exact opposite, Your Honor. You can't even follow that
15 if you want to because what's really being taught from the art that's in front
16 of you is the opposite.

17 So those are the things that I wanted to run through kind of
18 quickly, Your Honor. If there's other questions, I'm happy to answer them.
19 I'm happy to go through some quick notes and thoughts as well, but I
20 wanted to go after those directly.

21 JUDGE JUNG: I have a question, Mr. Walsh. Could you speak a
22 little about ordinary skill and the declarants' experience? I think that's how
23 much weight you should give to the testimony. Is there anything else that
24 you want to say?

25 MR. WALSH: There is, Your Honor. In fact, I'm going to try
26 to -- I'll try to advance to that so I can get to that slide.

1 If you want to jump to that, Michael, that would be of help, where
2 we talk about the two people.

3 I don't disagree that if you look at our expert, he's -- they're all
4 smart people. They're PhDs from fine institutions, et cetera, but he has had
5 consulting and inspection projects regarding suspension systems and vehicle
6 technology. At the same time, he's not telling you, here's what all these
7 other people are going to know.

8 And Dr. Slocum, he didn't identify any experience or design work
9 in vehicles, suspension technology, or shock absorbers. When he was asked
10 about it in his deposition, he said -- or vehicle or cycle-related experience --
11 he mentioned a shield beam connector for testing semi-connectors, water jet
12 cutters, offshore wind fans, not anything related to bicycles.

13 And the reason that's important is because, I agree with you that it
14 does go to the weight. I'm not trying to say that if he had enough time, and
15 he went through this entire process, he got things, he tested them, et cetera,
16 like the inventors did, he wouldn't be able to come up with the answer, but
17 that's not what a POSITA can testify about.

18 In other words, he's just saying -- he's looking at the result and
19 saying well everyone would have come to that conclusion, when on top of
20 that, all the other prior art says the opposite. It's teaching the opposite.
21 That's what you cannot accept as someone who's testifying about something
22 that's completely valid.

23 JUDGE JUNG: That would be, I think, a combination. You heard
24 Petitioner verify that if he just took things as is, without any modification,
25 just put it into a bicycle, for example, he would meet all the limitations of
26 claim 1.

1 But your position is that some POSITAs would have preferred
2 restricting the side-to-side of the tube as opposed to the fore-and-aft. It
3 seems like both of those are valid options. Maybe one is better than the
4 other for a mountain bike or a street bike, but it seems like both of those are
5 viable options that are both known in the art. So it seems like it would have
6 been obvious.

7 MR. WALSH: I don't think they are known in the art, Your
8 Honor. Because what Denk is talking about is if you take any tube and you
9 narrow out some side of it, et cetera, you can keep strength in one part of it.
10 That's what it's talking about. With respect to bicycles, it's all about that
11 vertical force going down.

12 And they don't talk about, it doesn't talk about the idea of it being
13 in a steer tube except for this person saying, oh, everyone would know that a
14 fork tube is a steerer tube, which is just false, Your Honor, because there's
15 nothing else out there. They would have brought in another patent that
16 showed you that because they're not -- the ones that they have and have
17 brought forward here, as it's their burden to show, say the opposite. They
18 haven't given one.

19 Once you get by that, that force is going up and down. As I told
20 you before, on a steerer tube, you're going like this. You're going side to
21 side. And it's a different orientation, a different orientation to that tube, as
22 well as the other elements.

23 I'm ignoring the other elements with respect to the length and the
24 size and how it goes from circular to elliptical, et cetera, and how it tapers
25 and all those other dependent forces, et cetera, but you couldn't just turn that
26 into you wouldn't just do it, especially when Denk doesn't teach that and the

1 other places of prior art teach the opposite.

2 I don't think it's a design choice to say, I'm going to do this side to
3 side, because what Moechnig is teaching in terms of side to side, what
4 Campagnolo, the number one name of bicycles, is teaching is that what is
5 important is side to side. You can't ignore that that's a design choice.
6 Otherwise, you'd be saying, I'm going to orient it in a way that it's weak.
7 Where the '993 is saying, this is where the stiffness has to be, that that's how
8 it has to be oriented. And nothing is like that, Your Honor. Nothing is like
9 that.

10 So that's why I think it's not fair to simply say you can just take
11 Denk, and it has a tube of different sizes in or out, as well as the other
12 things, the other elements I talked about. So that's the response to Denk.

13 And let me sort of run through some of these things. You may
14 come up with other questions along the way. As I said before, steerer tubes
15 are not fork tubes. And it's very clear in all of the configurations in the art
16 that's before you that there's a difference about it. And yet Petitioner just
17 says, they're the same thing because they've mentioned fork tubes. And
18 they have an expert say, all POSITAs would know it's the same thing.

19 You can't say, I'm a very smart person, I have a PhD, and so
20 therefore all the POSITAs are going to know something, and the art teaches
21 the opposite. That's just not something that is credible or should be
22 acceptable.

23 And so we had to show these things to show that they're reinforced
24 side to side, they're symmetrical or reinforced the other way around. There
25 isn't anything out there. There's no prior art that teaches those unique
26 stresses that are on a steerer tube and have something in the fore-and-aft

1 direction and with all the other elements of it.

2 And you noted that in your decision. You asked for more
3 development of that, and there wasn't more development. What happened
4 was they came up with other grounds. They came up with, oh, I'm going to
5 come up with -- I'm going to bring in Klein and Galasso as new things,
6 which shouldn't be considered anyway, but they don't help them.

7 For example, Klein contradicts. Klein is using it just for the fork
8 tubes, not for the steering tubes. It has a steering tube, doesn't mention
9 anything about it, and when it mentions it, they're not in the plane of travel,
10 et cetera, but then it contradicts the fore-and-aft because it says it has to be
11 canted in a different way, as I just mentioned before.

12 And Galasso is the same thing. It's stanchions. It's not a fork
13 tube. It's not in the plane of travel of the bicycle. It doesn't have an axis
14 that's related to the steering tube, et cetera, and it doesn't give you a reason
15 for combining it, which -- *KSR* is clear that you have to have an apparent
16 reason to combine known elements in a particular fashion.

17 And when the prior art is teaching the opposite, you can't say, oh,
18 if I just take this that teaches from side to side but I orient it front to back,
19 that does the trick. I don't think that's fair or teaches the ground that you
20 should do it.

21 It's not a steerer tube. It's obviously oriented fore and aft, as I
22 said. Denk doesn't show a valid reason to combine with anything. If they
23 said it could be applied to pickles, that isn't going to work, hang gliders,
24 airplanes, golf clubs, anything in the world. It doesn't really teach -- it'd be
25 very interesting to see what it's really trying to teach because it's not really
26 oriented that same way.

1 Campagnolo, we'll talk about that. It has a head tube, which is the
2 closest. It's a no steerer tube, side to side. It has a head tube, and it says the
3 exact opposite. It should be side to side. You can't use that to bootstrap
4 into, no, I would orient it the way the '993 did.

5 Galasso is the same thing. It's a motorcycle. It's not a steerer
6 tube. It's stanchions. Fork tubes don't have an access. It's not a plane of
7 travel.

8 Klein, I think, is similar, as I told you before. Klein is interesting
9 from the standpoint that it says, even though Petitioner read to you, oh, this
10 is what it says, the next sentence that wasn't read says that's not the way it's
11 supposed to be. I don't think that's how a POSITA is going to read that.
12 They're not going to stop. You can't just admit it.

13 Moechnig, I think, is the same thing, Your Honor. It teaches side
14 to side, lateral stiffness. It teaches an improvement that all increases that
15 stiffness. That's in paragraph 6. And then it specifically says that fore-and-
16 aft is detrimental. It doesn't just say it. It doesn't just say that you do side
17 to side. It says fore-and-aft is detrimental.

18 It says to increase the fore-and-aft rigidity detrimentally affects the
19 fore-and-aft stiffness performance of the steerer assembly. That is not
20 something that you would pick up and say, I'm going to take it and I'm
21 going to take the detrimental aspect of it and apply it to a steerer tube. That
22 doesn't make sense to me, Your Honor.

23 I think the Denk-based grounds fail. They don't anticipate. It
24 obviously doesn't include a steerer tube. I don't see in these things a real
25 motivation to modify. Denk doesn't say, oh, gee, there's other things that
26 might be added to it. It doesn't say to go out and look for something. It

1 doesn't do that.

2 JUDGE PETRAVICK: Counsel, I'm looking at Denk right here.

3 As Petitioner pointed out, it specifically says the lightweight component for
4 bicycles is suitable for practically all tubular assembly types. So that teaches
5 with a bicycle with tubular components, and it gives you examples of a top
6 tube, down tube, rear tube, head tube, fork tube, and so on, and the body.
7 It's not even closed in that way.

8 So it's specific to bicycles, tubular components of bicycles. And
9 the reference itself teaches that you want to strengthen in the deformation
10 direction as opposed to the perpendicular direction. So those are pretty
11 specific teachings as to which ways you want to strengthen or not
12 strengthen.

13 It seems to me that what you need to add to Denk, which
14 specifically talks about putting this in bicycles and tubular components of
15 bicycles, not anything and everything. We can hone in on that teaching
16 there, and it talks about that you want something thicker in the deformation
17 direction as opposed to the perpendicular directions.

18 Wouldn't we just need a teaching that says with a steering tube, the
19 deformation direction is in the fore-and-aft direction?

20 MR. WALSH: So let me take that thought. There is no teaching
21 that Petitioner has come up with that shows you that other than the '993.
22 There is no teaching that says a deformation-direction steering tube is in the
23 fore-and-aft direction other than the '993.

24 In fact, the other prior art that was presented to you says the
25 opposite. Moechnig says the opposite. Campagnolo says the opposite.

26 JUDGE PETRAVICK: Can you walk us through where it says the

1 opposite, where you think those references say the opposite --

2 MR. WALSH: Yes, sure.

3 JUDGE PETRAVICK: -- what the deformation direction is for a
4 steering tube?

5 MR. WALSH: Right. Well, first of all, a deformation direction is
6 really different than all the forces on the steering tube. What they're talking
7 about in Denk is when a rider sits, a 200-pound person sits on top of a
8 bicycle, it deforms it and pushes it down. So it wanted that weight there, but
9 as I told you before, the steering tube is going this way. It's a different
10 direction.

11 JUDGE PETRAVICK: So if a steering tube has forces on it and
12 it's different, where are those forces? Those would be in front, if it's
13 steering --

14 MR. WALSH: Well --

15 JUDGE PETRAVICK: -- or is it on the side? Can you explain to
16 me where?

17 MR. WALSH: The '993 teaches you that it's in the fore-and-aft
18 direction. The '993 in the very beginning of it says, the large stiffness and
19 strength of the fore-and-aft plane of travel of the bicycle. That's what
20 they're doing because the bending stiffness isn't as critical on the lighter
21 side loads. So it's referencing and diminishing the side loads and showing
22 that the fore-and-aft is critical.

23 Moechnig, which is an asymmetric steerer tube, says the exact
24 opposite. Moechnig says, the increase in fore-and-aft rigidity of the steerer
25 assembly detrimentally affects the fore-and-aft stiffness. That's in
26 paragraph 8 of Moechnig. That's the opposite of what it is.

1 JUDGE PETRAVICK: And the other references? Walk us
2 through the other references.

3 MR. WALSH: Yes. So Campagnolo, which they cite, on page 3,
4 in the paragraph that begins on line 26 through 31, when it talks about, it's
5 relating to frames for bicycles, it says, the structures have all positions so
6 that their cross-sections are arranged with their minimum thickness in
7 correspondence to the plane of the frame. Their minimum thickness, so
8 that's the opposite, side to side. The thickness part of it is side to side. The
9 minimum is fore and aft.

10 Those are the only teachings that are direct that says, this is what
11 affects. Moechnig is a steerer tube itself. Campagnolo is a bicycle frame.

12 And then the other thing I wanted to just touch on is the beginning
13 of your sentence, which is, Denk applies to any tubular component. It lists
14 lots of tubes in a bicycle. It does not list a steering tube.

15 JUDGE PETRAVICK: We're not limited to the list. It says
16 practically all tubular. What I just read is what it says. Practically all
17 tubular components of a bicycle. It has a list --

18 MR. WALSH: I agree.

19 JUDGE PETRAVICK: It suggests that we look at all the tubular
20 components. The fact that it doesn't specifically say steering tube is not
21 persuasive to me because that sentence is broader. It says to one of ordinary
22 skill in the art, look at the tubular components of a bicycle, and this concept
23 can be applied to it.

24 I read that as a suggestion of, look at all the tubular components of
25 a bicycle. A steering tube is a tubular component. Now I have to figure out
26 which way the forces are on the thing that I want to --

1 MR. WALSH: Okay.

2 JUDGE PETRAVICK: And so that's what I'm looking for in this
3 prior art, a reference that teaches that element of where the forces are
4 applied of the height of the steering tube.

5 MR. WALSH: Correct.

6 JUDGE PETRAVICK: And what you're telling me is that they're
7 not there in all of the prior art that's available in this record. So I just want
8 you to tell me -- you're telling me that actually it's the opposite; they're on
9 the side. So I just want to know -- I want you to walk me through in the
10 prior art where that is.

11 MR. WALSH: So number one, the only thing that talks about an
12 asymmetrical steerer tube is Moechnig. And Moechnig teaches that it has to
13 be reinforced side to side, not fore and aft. And yet, the Petitioner wants to
14 combine Denk with Moechnig. Denk is reinforced top and bottom. It is not
15 reinforced fore and aft.

16 Campagnolo, the other reference, and Moechnig, as I just read to
17 you, it disparages side to side -- it disparages fore and aft. Campagnolo does
18 the same thing. Campagnolo does it at column 2, lines 23 through 31, and
19 column 3 at lines 26 through 31. It's mentioned in detail on page 16 of our
20 Sur-reply.

21 So those are two direct prior art references that Petitioner has used
22 that teach the opposite of what the '993 does, the opposite. The other
23 references that they talk about do not teach that a steerer tube should be
24 reinforced in a fore-and-aft position.

25 Klein's not a steerer tube. It's obviously not part of the grounds
26 that was petitioned, it's not before you, Your Honor, but it's not a steerer

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1 tube. And it contradicts the idea that it should be fore-and-aft because it
2 can't sit at a different plane.

3 Valat is a uniform, which is another one they use, a uniform of
4 reinforcement all over. It's not asymmetrical. It doesn't do anything that's
5 up and down -- that's elliptical or crosses back and forth.

6 Galasso, another reference that they had, which is also not part of
7 their Petition that they just came up with, let me say that -- I don't want to be
8 repetitive of what Mr. Hickey said, but the idea of confronting after a
9 decision's been entered for new material -- and then the references in the
10 '993 are just it's common knowledge. It's common sense, so I'm going to
11 get my PhD expert to say it's common knowledge that this would be that.

12 My point is you cannot rely upon that. It's not truthful if the prior
13 art says the opposite. And I gave you two references to prior art that they
14 brought up that says the exact opposite. The only one that I know about that
15 says do it in the fore-and-aft position is the '993. The other references I can
16 go through.

17 Valat is uniform. Galasso is not part of the Petition, but it's not a
18 steerer tube. It talks about stanchions in a motorcycle that have different
19 forces. It doesn't have an axis in the center of the head tube. It's not in the
20 plane of travel. And of course, I talked about Denk being vertical, up and
21 down.

22 My point is that the Petitioner has the burden. When the Petitioner
23 gets in here and says, hey, everyone knows that when you reference a fork
24 tube, you mean a steering tube, there should be lots of different patents out
25 there, including ones that the company that they represent have, that says
26 that exact thing.

1 You're not going to find it. It's nowhere. It's not before you
2 because it doesn't exist. They're very different things, and that's why all of
3 these things make clear distinctions between fork tubes and steerer tubes.
4 And that's why you can't just add it.

5 And in the decision granted, you said, develop this. Develop it,
6 come up with it. That didn't happen. There is no additional thing that says,
7 okay, I'm going to bring forks to you -- the people that designed these
8 products, that designed forks, to say everyone knows that the pressure, the
9 forces are in the fore-and-aft direction. It's nowhere out there. The only
10 place it's in is in the '993.

11 Unless you have any other questions about the '993, I think we'll
12 reserve the rest for rebuttal. Thank you.

13 JUDGE JUNG: I do not.

14 MR. WALSH: Thank you.

15 MS. BHATTACHARYYA: Your Honors, I'll first address Patent
16 Owner's argument for the 492 IPR, which is for the '207 patent. Patent
17 Owner mischaracterizes Dr. Slocum's supplemental expert declaration to say
18 that he changed his position on Fox and he changed coarse adjustments.
19 That is not correct.

20 This is in Dr. Slocum's declaration, Exhibit 1017, at paragraphs 21
21 and 29. Dr. Slocum said that a POSITA would understand that when you
22 rotate the camshaft in Fox between the open and the closed dampening
23 settings, that's a coarse adjustment. Just going from open and closed, that's
24 a coarse adjustment.

25 And in Yi, if you rotate from the low velocity to medium velocity,
26 then high velocity and vice versa, that's a coarse adjustment. And then the

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1 references recognize that within one of those positions, for example, the
2 open position in Fox or the medium velocity position in Yi, there's a desire
3 to do fine adjustments. And that is what JP '279 is teaching and the other
4 prior art references are teaching.

5 So he didn't reverse course or anything. I just wanted to point that
6 out, that he made a distinction between coarse and fine adjustment.

7 And as Judge Cherry and Judge Petravick also brought up, Patent
8 Owner's main argument seems to be that, why would you improve Yi or Fox
9 because they already provide adjustments. But as Your Honors have pointed
10 out, *KSR* recognizes that a simple substitution for one element for another
11 known element is obvious.

12 I also wanted to point out another more recent Federal Circuit case
13 that addresses this head-on. It is *PAR Pharmaceuticals v. TWi Pharma*. It is
14 at 773 F.3d 1186 at pages 1197 to 98. It's a Federal Circuit 2014 decision,
15 which very clearly says that obviousness does not require the modification to
16 be better or preferred over the original.

17 As I said in my earlier opening argument, the obviousness
18 combination just has to be a suitable option. It doesn't have to be the best
19 option. And *PAR Pharma* specifically says that it doesn't have to be better
20 or preferred over the original.

21 But that said, as Dr. Slocum has testified, both the Fox obviousness
22 ground and the Yi grounds do provide more finer control. And he has
23 explained that this is not just about theoretical fine adjustments. When you
24 combine the taper with Nagai's bolt mechanism, it is much easier to slide the
25 rod up and down the taper. You just get this fine resolution control.

26 That's the term that Dr. Slocum uses, fine resolution control,

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1 because the bolt mechanism is kind of a screw. So you can make very linear
2 movements across the taper that you just cannot have by rotating a lever
3 over a rotary cam surface with your hand. So you just have to think about JP
4 '279's taper in combination with the Nagai bolt to get that fine adjustment.

5 Unless there are any questions, I'll move on.

6 JUDGE CHERRY: I'd like to ask a follow-up on the 491. Can
7 you address Judge Petravick's point about Denk suggests that there is a
8 benefit from placement in the deformation direction, and what evidence do
9 you have to connect that teaching to a replacement that you put in the
10 petition? If you could address that, I think that would be helpful. Thanks.

11 MS. BHATTACHARYYA: Absolutely, Your Honor.

12 JUDGE PETRAVICK: Can you specifically speak to the evidence
13 in the record which teaches that the fore-and-aft direction on the steering
14 tube is where there is the highest part of the force?

15 MS. BHATTACHARYYA: Absolutely, Your Honor. So first of
16 all, Denk explicitly teaches that there is the deformation or the greatest -- it
17 bears the highest load in the fore-and-aft direction. So Denk uses the term
18 vertical plane of the frame, and I just heard Patent Owner argue that that's
19 not the same as the plane of travel. That is incorrect.

20 If you look at Figure 1 of the '993 patent, it very clearly shows that
21 the plane of travel is aligned, it's coplanar with the frame, the vertical plane
22 of the frame. And the District Court construed this term. The District Court
23 said the plane of travel is the vertical plane aligned with the traveling
24 direction.

25 The traveling direction is the fore-and-aft direction. The '993
26 patent makes it very clear. So I just want to point out that this different term

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1 used, vertical plane of the frame, is coplanar, is the same as the plane of
2 travel. That's in the fore-and-aft direction, and Denk very clearly said that.

3 JUDGE CHERRY: And Dr. Slocum, does he not?

4 MS. BHATTACHARYYA: Yes, Dr. Slocum has said that in his
5 expert report as well, and it is in our Petition as well.

6 JUDGE CHERRY: Okay.

7 MS. BHATTACHARYYA: There is not a single reference that
8 says that the greatest loads for deformation direction is not in the fore-and-
9 aft direction.

10 I think Judge Petravick, you had asked, is there anything that says
11 that the greatest loads are side to side? It's not there. None of the references
12 say the greatest loads are anywhere other than in the fore-and-aft direction.

13 JUDGE PETRAVICK: Okay. Tell me exactly where in the
14 references is the evidence that the greatest load is in the fore-and-aft
15 direction on the steerer tube.

16 MS. BHATTACHARYYA: On a steerer tube. I would address
17 Denk then, Your Honor, because Denk is generic to a bicycle tube, but Denk
18 definitely says fore-and-aft direction has the greatest loads.

19 Klein talks about both the steerer tube and the fork blades. Patent
20 Owner tries to kind of ignore this part of steerer tube and only talk about
21 blades, but Klein in column 4, starting at line 21, says that the heaviest loads
22 will come from the vertical bumps or head-on impact and/or braking forces.

23 And then it goes on to say, in a simple analysis, it appears that
24 increasing the strength of the fork blades and steerer, fore-and-aft cantilever
25 would be the correct approach. So it says fork blades and steerer, the
26 highest impact happening in the fore-and-aft cantilever bending direction,

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1 which would be this direction.

2 And it's talking about head-on impacts, braking forces. It's not
3 talking about just the weight of the rider. It clearly says for fork blades and
4 steerer, the impact is in the fore-and-aft direction. And it makes a small
5 caveat just for the fork blades. In the fork blades, it may be a little bit on the
6 inside, but it doesn't say anything about steerer. For the steerer, Klein is
7 saying the greatest impacts are happening in the fore-and-aft direction.

8 Galasso teaches the same thing. And Galasso, again, Galasso says
9 that this design can be used for all parts of the fork chassis and explicitly
10 lists steerer tube as part of the fork chassis. Earlier, Patent Owner mentioned
11 that none of the references say that the steerer tube is a fork tube or
12 something like that. Galasso lists the steerer tube as a primary structural
13 element of the fork.

14 And Galasso at column 5, lines 10 to 16, is teaching a fork tube
15 design where the thickness of the tube is maximum along the fore-and-aft
16 direction, 34 and 35, such that the fork will be in its stiffest front to rear
17 setting.

18 It teaches the fork to be in the stiffest front to rear setting, and then
19 says the fork includes the steerer tube. So you want the entire -- all the fork
20 elements, including the blades, which are the fork blades and the steerer, to
21 be in its stiffest in the fore-and-aft direction. And this is presented in
22 Petitioner slide 12.

23 So yes, Klein and Galasso, those are specific to a steerer tube and
24 are saying the greatest force is in the fore-and-aft direction. Make it
25 stronger, give it more stiffness in the fore-and-aft direction.

26 And I'll just quickly address Campagnolo.

1 JUDGE PETRAVICK: You're out of time, but we'll give you a
2 couple more minutes, we'll also give Patent Owner a couple more minutes.

3 MS. BHATTACHARYYA: Thank you, Your Honor. I appreciate
4 that. I just want to -- I'll make this quick.

5 Campagnolo is saying there is a greater impact side to side, but
6 Campagnolo is just about the frame component. And Petitioner is not
7 disagreeing with that. We were showing Campagnolo just for the shape, the
8 elliptical inner and circular outer shape, but Campagnolo doesn't say
9 anything about the steerer.

10 And for just the frame component, it says increase stiffness side to
11 side. So Campagnolo doesn't contradict what Denk, Klein, and Galasso are
12 teaching.

13 And Moechnig, nowhere does Moechnig say that the greatest
14 forces or impact stresses, whatever word you want to use, that the greatest
15 stresses are side to side in the steerer tube. It does not say that. Moechnig
16 simply says increase compliance in the fore-and-aft direction for the comfort
17 of the rider, so that the impacts are not transferred to the rider's hands.

18 And as Dr. Slocum testified, that's a use case, increase in
19 compliance in the fore-and-aft direction to bend with the load or increase
20 stiffness there in order to withstand the load.

21 And Your Honor, I just want to quickly address the point about the
22 definition of POSITA. I just realized that Patent Owner keeps saying there
23 is no evidence in the record because their position is that Dr. Slocum is not a
24 POSITA, so his testimony is not evidence. As Judge Jung pointed out, it's
25 just goes to the weight.

26 But even setting aside Dr. Slocum on this point about the fore-and-

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1 aft stiffness, two different patent offices have found that it would have been
2 common knowledge at the time the '993 patent application was filed that the
3 greatest impact, the highest stresses occur in the fore-and-aft direction. This
4 is in slide 13 of the 491 IPR. The USPTO examiner applying Galasso
5 explicitly found that.

6 And in the counterpart Chinese patent application, there was a re-
7 examination based on Denk, and the claims in China were not allowed based
8 on Denk. And there, the examiners in the re-examination said that it is
9 common knowledge in the art that the steerer tube of a bicycle bears the
10 greatest stress in the traveling plane. They repeatedly say that. And that's
11 Exhibit 1004.

12 JUDGE PETRAVICK: All right. You need to wrap it up.

13 MS. BHATTACHARYYA: Thank you, Your Honors. I really
14 appreciate the extra time. Thank you.

15 JUDGE PETRAVICK: Patent Owner, I'm going to set your clock
16 at 14 minutes. You had 10 and a half minutes, and Petitioner used about
17 three and a half minutes extra.

18 MR. WALSH: Thank you.

19 JUDGE PETRAVICK: So I will increase your time to 14 minutes.

20 MR. WALSH: Thank you, Your Honor. I think we'll just
21 continue with the '993.

22 So I don't know how to address the hearsay of what was just
23 referenced from a Chinese examiner. That's why hearsay is not admissible
24 into evidence, because you just can't talk about it. In any event, I did want
25 to address the following things.

26 One of the things is that there is no -- I vehemently disagree with

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1 Petitioner on what she says. Klein, for example, does not say that the
2 heaviest loads are the fore-and-aft stress. It says the opposite. It's a
3 different thing to do.

4 What it says is that the heaviest loads will come from vertical
5 bumps and head-on impacts. When you look at a plane of a bicycle, you're
6 sitting on a bicycle, what Denk is talking about and what Klein is talking
7 about is a vertical plane, meaning bumps up and down from the 200-pound
8 rider hitting a pothole.

9 The '993 is talking about something different. It's talking about
10 going forward like this in a plane that moves when you steer it. That's very
11 different from a vertical force pushing down. That direction, if it's saying it
12 right, then Denk is clearly in an up and down direction. It's not side to side.
13 It's not in a fore-and-aft direction.

14 And Klein specifically says, yes, it's wrong. It wouldn't be in the
15 fore and aft. It would be different.

16 Galasso, I think, is the same way. First of all, Galasso is not a
17 steering tube. It is a stanchion that's connected to a motorcycle. It doesn't
18 have an axis. It doesn't have the other things connected to it, but what it
19 does talk about is that if you increase stiffness of the stanchion, if it's
20 aligned parallel to the center plane, the fork will be in its stiffest form front
21 to rear.

22 That doesn't mean that that is what you want in a bicycle steering
23 tube. That's in a fork holding the wheel. And of course, Klein says
24 something different because it cants it out differently.

25 The other thing I want to reference is Moechnig again. I can't
26 disagree again more. It specifically says, increase in the fore-and-aft rigidity

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1 of the steering assembly detrimentally affects the fore-and-aft stiffness
2 performance of the steering assembly. How can that be any more clear that
3 that's not what you should do?

4 And yet, in all of these grounds, Petitioner is trying to combine
5 Denk with Moechnig to realign the orientation in a fore-and-aft direction
6 that Moechnig says, don't do. That's not what you do. That's not how you
7 do it.

8 It's Petitioner's burden of proof. Petitioner could have come
9 before the Court not with an expert that says, all POSITAs would know this,
10 but with real evidence. Prior art is real evidence. Testimony that you can
11 depose people who work at Fox, who designed forks and shock absorbers,
12 that's real evidence.

13 JUDGE CHERRY: Well you got to depose Dr. Slocum, evidence
14 is evidence. We determine the weight. We don't say it's real evidence or
15 fake evidence. You had a chance to depose Dr. Slocum.

16 I think just stick to attacking Dr. Slocum's reasoning and not
17 saying that somehow some types of evidence are better than others. If Dr.
18 Slocum is well reasoned, then it's entitled to weight, but if he hasn't given
19 us good reasoning, then it's not entitled to weight.

20 I think Judge Petravick kind of pointed out where a gap is in this.
21 And we're trying to find - we're trying to put it all together. Maybe if you
22 focus on that gap and what evidence there is on that gap, then maybe that
23 will help you or it may hurt you, but that's where we should focus our
24 attention, I think, rather than is it real or fake evidence.

25 MR. WALSH: Your Honor, I'm not saying something is fake
26 evidence. What I'm saying, there are lots of different types of evidence.

1 And what I'm saying is that just having an expert say, every
2 POSITA knows that this is where the forces are, to me, it's not entitled to
3 weight when the actual evidence that supports it and that is in front of the
4 panel are things that say the exact opposite.

5 In other words, Moechnig says the exact opposite and so does
6 Campagnolo. And there is no other piece of prior art that says, yes, where
7 the forces come from and where they should be put is in the fore-and-aft
8 direction except the '993.

9 And so my point is, maybe what I'm saying inartfully, is that you
10 can't overcome a lack of evidence by hiring an expert to say all these people
11 would know because you would have lots of examples of that. You'd have
12 other pieces of prior art. You'd have other things in learned books or
13 treatises that say this is where all the forces would be.

14 None of that is before the panel because it's not out there. The
15 only thing that we've been able to find -- and we did depose Dr. Slocum. He
16 wasn't able to come up with these things. When we asked him about his
17 background in vehicles, et cetera, it was things that weren't vehicles.

18 So that's the point, Your Honor, that this is supposed to be about a
19 trial. It's supposed to be about evidence, not conjecture, not attorney
20 argument. And I understand how an attorney could argue you just turn Denk
21 any way you want, okay, but that's not what this is about. It's supposed to
22 be about the evidence.

23 And so that's why when I look at the grounds here, and it's Denk
24 and Yi and Moechnig, it's basically telling you -- it's combining something
25 that teaches the opposite of what the '993 is. And I don't think you get over
26 it by the idea that's just a design choice because they would have had

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1 something out there that said this is where the forces are.

2 I think *KSR* is pretty clear. You have to have an apparent reason
3 and a motivation to do it, combining those things. The motivation would be
4 side to side, and so it would be opposite. That's the case. Denk is not, as
5 referenced again, as being fore and aft. It's not. It's vertical. It's up and
6 down. That's what it is.

7 The slide that I have in front of you is Moechnig is the only steerer
8 tube with symmetrical reinforcement. And it talks about side to side, and
9 tells that you have to do it. It shows fore-and-aft is detrimental. It doesn't
10 say it's better. It says it's detrimental. That's the opposite of the '993.

11 The same with Campagnolo. It's not a steering tube, but it has
12 side-to-side, lateral reinforcement. And Denk is not fore-and-aft
13 reinforcement. There's complete failure to show any prior art or teachings
14 or other evidence that should be acceptable that shows that the unique
15 stresses and strengths in a steering tube are in the fore-and-aft direction and
16 that's where you need to put the strength except for the '993. That's the
17 issue.

18 So unless you have further questions, I'll let Mr. Hickey talk about
19 the '207. Thank you.

20 JUDGE PETRAVICK: Thank you, Mr. Walsh.

21 MR. WALSH: Thank you for your time.

22 MR. HICKEY: Okay, just a couple of points. And I do want to go
23 to, Judge Cherry and Judge Petravick, what you were focused on in terms of
24 that that *KSR* issue.

25 Before I get there, I do want to point out with respect to Counsel's
26 reference on the coarse adjustment in Dr. Slocum's declaration -- that is in

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1 1017 -- that was submitted in reply. If you look for the word coarse in his
2 original declaration, it is nowhere to be found. There's no distinction
3 between coarse and fine adjustment in that declaration.

4 Perhaps I, too, was inartful in terms of describing the substitution
5 issue that you were raising, Judge Petravick, in terms of structure versus
6 function. To be clear, what the obviousness combination here is not
7 substituting a slider for a cam or a cam for a slider. It is modifying the
8 camshaft of Fox or modifying the camshaft of Yi with this other slider
9 mechanism that JP '279 shows.

10 What I point the Board to, pages 41, 42, 43, as well as 53, 54, and
11 55 of the Patent Owner Response, talking about how these are not known
12 elements that you're just simply substituting, or known methods.

13 The record evidence shows that what you're trying to do here in
14 terms of arranging different movement systems at perpendicular angles
15 when the surface of the camshaft curves, that wasn't something that was
16 known. Using two different adjustment methodologies together to adjust an
17 adjuster rod, that was not known.

18 And that's supported not only by Dr. Parnell's declaration, Exhibit
19 216 at paragraph 89, but it also comes from admissions that Dr. Slocum
20 made in his deposition.

21 Similarly, at page 53, JP '279 doesn't show, along with any of the
22 other references, teach or suggest an inclined plane surface that's placed
23 onto the curved exterior surface of the camshaft or any other curved surface,
24 and then arranging that inclined surface tangentially to the curvature of the
25 cam when you have this complicated shaft shaping that's suggested by the
26 Petitioner.

1 So these are to the point of, this just simply, hey, this is an easy
2 system, it's simply substituting known elements. No, it's not. These are
3 things that hadn't been done before. And this combination is not just
4 swapping out the cam and the slider.

5 It's making this modification and trying to rearrange this shape in
6 such a way that gets to the key of what the invention of the '207 patent is.
7 Namely, can we come up with a system that has certain preset positions of
8 the lever that have known damping characteristics and then get to one
9 position where you can do, we'll call it fine tuning, but where you can do
10 that adjustment of damping characteristics in that one position without
11 affecting anything else.

12 The fact is nothing else had done that before. These concepts that
13 are put together by Dr. Slocum, by Petitioner, are things that the
14 combination of these elements were not known. And again, I think that the
15 perceived benefit because -- again, here I go to the Patent Owner Response
16 at page 40. It really calls this out.

17 It's because we don't know the size and shape of the cam of the
18 slider of JP '279 or the cam of Fox or the cam of Yi, that directly affects the
19 level of fineness. And that's what Dr. Parnell says in his declaration,
20 Exhibit 2016, at paragraphs 81 to 88.

21 So you could have an adjuster that's designed to be finer than the
22 other, but because the sizes and slopes of those surfaces are unstated, no one,
23 Petitioner, Petitioner's intended expert, no one else knows what the relative
24 fineness of those adjusters would be.

25 I'll end by again pointing to the Petition itself, page 16, which says
26 that Fox already provides fine adjustments. And then that's reversed in the

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1 course of the briefing and the evidence that's submitted to say that it only
2 provides coarse adjustment, different spelling than the course of briefing.

3 So thank you for your time. We appreciate the opportunity to be
4 heard.

5 MS. BHATTACHARYYA: Thank you, Your Honors.

6 JUDGE PETRAVICK: We are adjourned.

7 (Whereupon, the above-entitled matter went off the record at 3:09
8 p.m.)

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