

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CMS CEP COR LTD. and
CMS CEP COR AMERICAS LLC,
Petitioner,

v.

SANDVIK INTELLECTUAL PROPERTY AB,
Patent Owner.

IPR2024-01380
Patent 9,827,568 B2

Record of Oral Hearing
Held: January 13, 2026

Before CYNTHIA L. MURPHY, RICHARD H. MARSCHALL, and
ARTHUR M. PESLAK, *Administrative Patent Judges*.

APPEARANCES:

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The above-entitled matter came on for hearing on Tuesday, January 13, 2026, commencing at 9:30 a.m. EST, 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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9:32 a.m.

JUDGE MARSCHALL: This is a hearing in IPR2024-1380 between
Petitioner CMS Cepcor Limited and CMS Cepcor Americas LLC and Patent
Owner Sandvik Intellectual Property AB, addressing U.S. Patent Number
9,827,568.

I'm Judge Marschall. With me are Judges Peslak and Murphy. Let's
start with the parties' appearances, please, and we'll start with Petitioner.

MR. SANKS: Terry Sanks on behalf of Petitioners.

JUDGE MARSCHALL: And on behalf of Patent Owner?

MR. ARJOMAND: Good morning, Your Honors. Mehran Arjomand
of Morrison & Foerster on behalf of Patent Owner. With me is Jeff Young,
also of Morrison & Foerster. Also, Corinne Gorski of Sandvik is in the
audience today, and there may be folks from Sandvik and Morrison &
Foerster on the public line.

JUDGE MARSCHALL: Okay.

PARTICIPANT: Excuse me. This is Charlie from the VTC team. I
apologize for interrupting. The mic is off on the podium, and I don't know if
we were able to --

(Simultaneous speaking.)

MR. ARJOMAND: The green light is on.

JUDGE MARSCHALL: Could you try it again? Could you?

MR. ARJOMAND: Hello? Hello? Hello?

JUDGE MARSCHALL: You still hear nothing?

JUDGE PESLAK: We can hear you now.

1 MR. ARJOMAND: Can you hear me, Your Honors?

2 JUDGE PESLAK: I think you have to stand a little closer to the mic,
3 Counsel, and then you'll be fine.

4 MR. ARJOMAND: I'm not sure how much closer I can stand to the
5 mic. How's that?

6 JUDGE PESLAK: That's perfect.

7 MR. ARJOMAND: Okay.

8 JUDGE PESLAK: All right.

9 MR. ARJOMAND: Sir, Your Honors, I just wanted to raise our
10 request for authorization for a motion to strike Petitioner's amended sur-
11 replies that they filed yesterday.

12 As you'll recall, they filed sur-replies on January 7th. Immediately
13 after the filing of those sur-replies, we informed Counsel for Petitioner that
14 the sur-replies were improper. They included exhibits beyond the deposition
15 transcript of Dr. Kytomaa. Specifically, they included a declaration, the
16 fourth declaration of Mr. Smith. They also included additional exhibits, and
17 they also included new arguments in the sur-replies.

18 We informed Petitioner's Counsel of all those violations of the rules.
19 They filed the amended sur-reply yesterday. We reviewed the amended sur-
20 replies, and in our opinion, they really didn't change anything, other than
21 take away the cites to Mr. Smith's declarations. Furthermore, they did not
22 remove any of the exhibits, as far as we could tell. So we want to just make
23 sure that we renew our request for a motion to strike.

24 Stepping back, in our view, what has happened in these proceedings
25 has prejudiced the Patent Owner. There have been numerous instances
26 where Petitioner has not followed the rules. And to Petitioner's Counsel's

1 credit, they have tried to rectify some of those violations, but when you pass
2 a certain threshold, in terms of the number of violations that they have, then
3 it becomes a prejudice to the Patent Owner. And we reserve our rights to
4 challenge the proceeding based on that prejudice. But right now, we're
5 specifically requesting authorization for a motion to strike their sur-replies.

6 JUDGE PESLAK: Counsel, if we were to expunge the exhibits that
7 were filed with the sur-reply, would that obviate your issue?

8 MR. ARJOMAND: No, it wouldn't, Your Honor. The problem that it
9 has, that exists, goes beyond just the exhibits themselves. So they have
10 introduced new arguments into the record based on the Smith declaration.

11 The Smith declaration presented, for example, a new motivation to
12 combine the references. And they ported those arguments into their
13 amended sur-replies. The only thing that they changed were the cites to Mr.
14 Smith's declaration. Petitioner's Counsel removed those cites, but he didn't
15 remove the arguments. So their amended sur-replies still include, for
16 example, a new motivation to combine based on, you know, the --
17 maintaining the life of the main shaft of a gyratory crusher or reducing
18 downtime in terms of maintenance. So we don't believe that the
19 expungement of the exhibits will cure the deficiency.

20 JUDGE PESLAK: All right. So, Counsel, let me ask you this.
21 Oftentimes, a motion to strike is not really a good vehicle because then we
22 get into picking and choosing what arguments are appropriate or not.

23 So the way I would prefer to handle that is, after the hearing, the
24 parties can -- you can -- the parties can submit a letter or a paper to the
25 Board indicating what arguments you believe are outside the scope of the
26 sur-reply. And then Petitioner could respond to that, and we'll take that into

1 consideration. Because, you know, we're talking about arguments that were
2 raised in the sur-reply, and you know, we can sort through those issues, and
3 when we write the final written decision, so I -- I believe that's a better way
4 to handle this.

5 MR. ARJOMAND: That's totally acceptable to us, Judge Peslak. In
6 our opinion, whatever vehicle that you prefer for us to present what we
7 believe is a clear violation of the rules, with respect to a sur-reply, we would
8 be -- we would be happy to proceed that way.

9 In our view, what Petitioner has consistently done through these
10 proceedings is sort of violate the rules. And while we do appreciate the
11 expertise of Your Honors in terms of being able to parse the record between
12 proper and improper filings, at the end of the day, when you have this many
13 number of improper filings throughout the proceeding, there becomes a
14 prejudice to the Patent Owner, and that was the point that I wanted to
15 emphasize earlier in the hearing.

16 JUDGE MARSCHALL: So, with that, yeah, okay. Well, I think we'll
17 now proceed to the argument time. The argument will proceed as set forth
18 in the hearing order. During your presentation, please refer to exhibit and
19 slide numbers to aid us in following along and to make the transcript clear.

20 Please do not interrupt the other party's presentation. You may object
21 only during your argument time or following the rebuttal.

22 Please be aware that we have provided a public access line for the
23 public to watch this hearing.

24 Each side was provided a total of 60 minutes of argument time, and
25 each side may reserve time for rebuttal.

1 I believe there may be issues with demonstratives in this hearing or in
2 the next. Generally, we don't want to hear interruptions, as I just noted,
3 during argument time. If you have anything you want to address regarding
4 that, that still remains an issue, you may raise it during your argument time.

5 Petitioner will start. And before you get ready, and I'll give you a
6 moment; if you have time you'd like to reserve for rebuttal, just let us know.

7 JUDGE PESLAK: So, I'm back. My apologies. So, Patent Owner,
8 you can file a three-page paper on January 20th, just listing the arguments
9 that you believe are outside the scope of a proper sur-reply.

10 And Mr. Sanks can file a paper on January 27th. It's also limited to
11 three pages responding to that. And Petitioner should indicate whether it
12 opposes striking the exhibits from the record.

13 Counsel, do you both understand that?

14 MR. ARJOMAND: Yes, I do, Your Honor.

15 MR. SANKS: Yes, Your Honor.

16 JUDGE PESLAK: Okay. With that, we can start the hearing.

17 MR. SANKS: I've got this plugged in, but I don't know if it's --
18 should it be showing up here, or --

19 PARTICIPANT: Yes.

20 MR. SANKS: Oh, I've got to plug it up there.

21 JUDGE MARSCHALL: Yeah, usually, you have to connect to the
22 podium.

23 MR. SANKS: Okay. Sorry about that.

24 JUDGE MARSCHALL: That's all right.

25 (Pause.)

1 JUDGE MARSCHALL: Judges, can you see those demonstratives
2 now that they're connected?

3 JUDGE PESLAK: I can see them.

4 JUDGE MARSCHALL: Okay.

5 MR. SANKS: Okay. I think I'm ready.

6 JUDGE MARSCHALL: And would you like to reserve some time
7 for rebuttal?

8 MR. SANKS: Yes. I'd like to -- I think I can reserve up to ten
9 minutes, so I would like to reserve my ten minutes.

10 JUDGE MARSCHALL: Ten minutes. You may begin when ready.

11 MR. SANKS: All right. All right. So, for the -- my agenda today, I'd
12 like to first briefly touch on the Sandvik '568 Patent. I'll then have a
13 discussion about the level of skill of one in the art, as well as the field of
14 endeavor, touch on the prior art that we've -- Petitioner has used, go through
15 and explain the motivation to combine, a reasonable expectation of success,
16 including on the amended claims, a discussion on analogous art, and then a
17 brief discussion on secondary considerations.

18 JUDGE MARSCHALL: Can you pause for just a minute? I see my
19 Judges' screens are frozen, so I think we're having connection issues.

20 MR. SANKS: Oh, okay.

21 JUDGE MARSCHALL: It looks like they're rebooting the system.
22 This always happens in a hearing, not when our regular calls are being held.
23 So we'll go off the record for a bit.

24 (Whereupon, the above-entitled matter went off the record at 9:46
25 a.m. and resumed at 9:52 a.m.)

1 JUDGE MARSCHALL: All right. So, we'll go back on the record.
2 Begin again when ready.

3 MR. SANKS: All right. So, where I was starting -- I'll go backwards.
4 This was the agenda I had for my presentation today. I'm going to start with
5 discussing the '568 Patent; then spend a slide talking about level of skill of
6 one in the art, as well as the field of endeavor; followed by just briefly
7 touching on the prior art that we've used, that's why we believe this patent is
8 invalid; discussion about a motivation to combine, and then --

9 JUDGE MARSCHALL: Could you bend the microphone towards
10 you a bit? For some reason, it's not picking up.

11 MR. SANKS: How about now?

12 JUDGE MARSCHALL: Is that better?

13 PARTICIPANT: Just to check and to see, there's a button on the
14 front. Can you see if it's turned on? Can you please press that, please?

15 MR. SANKS: Oh, there. That should do it. How's this?

16 JUDGE MARSCHALL: Is that better?

17 PARTICIPANT: Yeah.

18 JUDGE MARSCHALL: Better now.

19 MR. SANKS: Okay. Well, I'm just going to go ahead and move on
20 to the first -- the next slide.

21 So the '568 Patent is directed towards a gyratory crusher. It shows,
22 essentially, a cone of a typical design, has a main shaft fitted with a mantle
23 or an eccentric drive. Your cone assembly is mounted internal to a crushing
24 shell, creating a crushing zone.

25 As seen in Figure 1, which is on the left, the crusher includes a
26 crusher head 103 that's mounted on an elongate shaft 107. There's an upper

1 end region of the shaft 113 that comprises an axial taper to define an upper
2 conical section. The cone 113 tapers inwardly in the bottom to top direction,
3 away from the head 103. Substantially cylindrical wear sleeve 114 is a
4 friction fit along its axial length over region 113 of the shaft.

5 If you look at Figure 2, it shows further the longitudinal axis 115
6 sleeve, which is 114, which has an axial wall 209 with external facing
7 surface 201 and internal facing surface 200. The axial wall 209 decreases in
8 thickness from second upper end 208 to a first lower end 207. The radial
9 wall 203 extends perpendicularly to axial wall 209, is oriented inward
10 towards axis 115 at the second end 208.

11 JUDGE MARSCHALL: Sir, you're going to have to pause again. I
12 see frozen video here. This hasn't happened in about five years, in my
13 experience, but it does happen where we have a tough time with connection.

14 (Whereupon, the above-entitled matter went off the record at 9:55
15 a.m. and resumed at 9:59 a.m.)

16 JUDGE MARSCHALL: I guess, resume whenever ready. It looks
17 like we're all set.

18 MR. SANKS: Okay, and keep the laptop disconnected, right?

19 JUDGE MARSCHALL: Yeah, keep the laptop disconnected, just in
20 case that is the issue. And will you just call out slide numbers as usual, so
21 we can follow along?

22 MR. SANKS: Okay. Well, the slide I had just gone over was Slide 2,
23 which is discussion on the '568 Patent.

24 I guess a couple other comments I wanted to make on the '568 Patent
25 was it clearly states it is an object of the present invention to provide a
26 sleeve for a main shaft of a gyratory crusher that enables conventional

1 attachment and detachment of the shaft so as to quickly and conveniently
2 assemble and disassemble.

3 Moving on to Slide 3, person having ordinary skill in the art, there
4 essentially was not a disagreement between the parties as to someone having
5 -- a POSITA should have a bachelor's degree, at least two years of
6 experience with industrial equipment, design, and development.

7 One thing I would add is, having a bachelor's degree with two years of
8 experience, what is taught in engineering school has varied or differed from
9 what was taught in 2000 and prior to 2010, and going back even earlier.
10 Technologies change. Therefore, what people learn in engineering has
11 changed -- or school of engineering has changed as well.

12 As for the field of endeavor, we still maintain it's directed towards
13 shaft assemblies for rock crushers.

14 And turning over to Slide 4, for the primary claims, for this patent, the
15 Patent Owner didn't file a response. Instead, they provided some First
16 Substitute Claims and then Revised Substitute Claims.

17 And for that, we used a reference, Patent Number 3,813,047, to
18 Torrence, which is Exhibit 11, as well as Patent Number 6,270,026, to
19 Piepho, or Piepho, however you care to pronounce it. Torrence discloses a
20 gyratory crusher with wear sleeves, whereas Piepho discloses a rock
21 crushing apparatus. In this case, the rock crushing apparatus is a coal
22 pulverizer.

23 Turning over to Slide 5, we maintain that a POSITA would be
24 motivated to combine the tapered joint of Piepho with the sleeve and shaft of
25 Torrence. Essentially, what we're arguing is it's a tapered shaft. And Piepho

1 has a tapered shaft that seems arrangement of a tapered shaft could also be
2 applicable to Torrence.

3 There's reasonable expectation for success in making that
4 combination, as cylindrical and tapered interface fit joints are common in the
5 prior art, and both have been used for decades. For the most part, this isn't
6 new technologies. This isn't rocket science. It's technology that is well
7 known.

8 Moving on to Slide 6, at first to touch on MPEP 2143.01, which
9 essentially lays out when you -- the motivation to combine may be found
10 explicitly/implicitly in the market forces; design incentives; interrelated
11 teachings of multiple patents; any need or problem known in the field of
12 endeavor; background knowledge, creativity, common sense of the person of
13 ordinary skill. Essentially, again, we're basically saying we're trying to --
14 the whole intent was trying to increase the life of a main shaft and/or reduce
15 the downtime, which is kind of evident when you're trying to, again,
16 increase the life of a main shaft.

17 And then, there's other prior art that kind of touches on that as well.
18 For example, I'm talking about ease, improve ease of removal and prevent
19 damage to the shaft, which is shown in our Exhibit 1035, to Behm; being
20 able to use in more locations as they do not require presses and gear pullers,
21 such as illustrated in Sillett, which is Exhibit 1034; removing components on
22 a tapered shaft, particularly -- making them particularly easy, as taught in
23 Harless, which is Exhibit 103. All of these, again, we maintain are known
24 already in the prior art.

25 So, turning to Claim 11, Claim 1 -- 11, that's their Amended
26 Substitute Claim. It's directed towards a gyratory crusher. Torrence is also

1 directed -- discloses a gyratory crusher, which is actually even directed more
2 so to an improved spider bearing for a main shaft on the crusher and
3 lubrication. Torrence shows a cross-section of a conventional gyratory
4 crusher. The central cone is part of the main shaft, which is mounted on an
5 eccentric drive which creates the gyrational crushing motion as it is driven.

6 Torrence goes in, and it specifically teaches just that: a driving means
7 rotate an eccentric sleeve about a vertical axis, central of the spider hub and
8 the machine's crushing chamber to impart a gyratory motion to the shaft.

9 Moving on to Slide 8, we believe, again, Claim 11 is obvious in view
10 of Torrence combined with Piepho. Piepho, again, is a -- it crushes rocks.
11 And the distinction Patent Owner tries to make is that it's a coal pulverizer,
12 but there's no -- there's no disagreement that coal is a form of rock.

13 As I'll touch on a little later, there's no disagreement that both a
14 gyratory crusher and pulverizer might be used at the same operating
15 location, same quarry, for example, where one could be used -- the gyratory
16 crusher would be used first, and then, if it's coal, it could then be passed off
17 to the pulverizer. So we maintain that the present invention relates in
18 general to an improved shaft for -- well, it -- Piepho, like I said, it still
19 focuses on the shaft, a tapered shaft.

20 Moving on to claim -- or excuse me -- Slide 9, so one element of
21 Claim 11 talks about a main shaft including a shaft body having a first end
22 for positioning a lower region of the crusher and a second end for
23 positioning at an upper region of the crusher relative to the first end. Both
24 Torrence and Piepho disclose a main shaft including a shaft body having a
25 first end for positioning a lower region of the crusher and a second end for
26 positioning at an upper region of the crusher relative to the first end.

1 Turning to claim -- or excuse me -- page 10, another element provides
2 for a thickness of the shaft body being tapered in an axial direction of the
3 main shaft at a tapered region of the second end so as to taper and decrease
4 in cross-sectional area. And the part that was added was: wherein the
5 tapered region extends from an uppermost extremity of the shaft.

6 Uppermost extremity of the shaft is really not even taught or
7 suggested, or there's no -- it's kind of just nebulous when they say the upper,
8 uppermost extremity of the shaft. There's no explanation as to what that is.
9 It's essentially kind of just a vague term hanging out there.

10 But nevertheless, Torrence in view of Piepho does -- they disclose a
11 thickness of the shaft body being tapered in an axial direction of the main
12 shaft at a tapered region of the second end so as to decrease in cross-
13 sectional area. Combining the tapered region with Piepho with the shaft of
14 Torrence, the tapered region would extend from an uppermost extremity of
15 the shaft. I think that's kind of readily evident in the teachings of both of
16 these references, as well as what's in the drawings of both references.

17 Moving on to page 11, another element is, in Claim 11, a sleeve fitted
18 over the tapered region at the second end of the main shaft. Torrence in
19 view of -- well, Piepho discloses a sleeve fitted over the tapered region at the
20 second end of the main shaft. With respect to Piepho, the sleeve is the
21 bushing element 18. Piepho teaches that the bushing has a tapered internal
22 surface that is fitted over the tapered region of the main shaft.

23 We maintain that a POSITA would be motivated to combine
24 Torrence's shaft with the sleeve fitted onto the second end with Piepho's
25 teachings of a sleeve fitted over the tapered section of the second end of the
26 main shaft. A POSITA would have reasonable expectations of success in

1 making this combination, as it is nothing more than a combination of prior
2 elements.

3 Moving on to claim -- or page 12, another part of element -- excuse
4 me -- of Claim 11 provides for the sleeve including an elongate axial wall
5 extending around a longitudinal axis of the sleeve. As shown, both Torrence
6 and Piepho has a sleeve with an elongated axial wall. Further, the axial wall
7 of the sleeve extends around the longitudinal axis of the sleeve. In either
8 sleeve, the length is greater than the diameter of the sleeve, demonstrating it
9 is elongated in shape.

10 Moving on to claim -- or page 13, excuse me. I do believe I had just
11 touched on page 11, so now I was going to touch on page 12. Page 12,
12 element, what we've identified as 11b3, you have an axial wall having an
13 internal face surface for positioning in contact with the outward-facing
14 surface of the main shaft. Again, Torrence and Piepho teach that the axial
15 wall of the sleeve has an internal facing surface, which is positioned in
16 contact with an outward-facing surface of the main shaft.

17 Moving on to Claim 13, an external facing surface relative to the
18 longitudinal axis, both Torrence and Piepho disclose a sleeve with an
19 external facing surface relative to the longitudinal axis.

20 As for the next sub-element, the axis wall extending between the
21 internal and external face surfaces, again, both the sleeve of Piepho and
22 Torrence are arranged in a way such that the axial wall of the sleeve extends
23 between the internal and external facing surfaces.

24 Slide 16 is where another amendment had been made, where now it
25 states the axial wall having a first sleeve end for positioning at a lower
26 region of the main shaft and a second sleeve end for positioning at an upper

1 region of the main shaft relative to the lower region. Again, both Piepho and
2 Torrence have an axial wall with a first end at a lower region of the main
3 shaft and a second end at the upper region of the main shaft.

4 Element 11c provides for wherein a thickness of the axial wall at a
5 region between the first and second sleeve end tapers and decreases in the
6 direction from the second sleeve end to the first sleeve end, wherein the first
7 sleeve end is a lowermost extremity of the sleeve.

8 Again, we maintain the combination of Torrence and Piepho teaches
9 this. Piepho utilizes a tapered sleeve for ease of assembly and disassembly.
10 Piepho's sleeve tapers from a second sleeve end towards a first sleeve end
11 and has a flange at a first sleeve end. An internally tapered sleeve has a
12 constant outer diameter wall thickness, which will vary. This was -- is
13 visible in the slides, the image to your left, which is an exploded view of the
14 Piepho. The sleeve thickness increases to accommodate the sleeve shoulder.

15 Element 11d, the axial direction of the internal facing surface at said
16 region between the first and second sleeve ends extending traverse to the
17 longitudinal axis so as to taper inwardly towards the longitudinal axis of the
18 sleeve in the direction from the first sleeve end to the second sleeve end.

19 Again, the internal facing surfaces of the regions between the first and
20 second sleeve ends at the axial wall tapers inwardly towards the longitudinal
21 axis in the direction from the first end of the sleeve to the second end of the
22 sleeve. This is, again, this is what's illustrated in the prior art. A POSITA
23 would be motivated to combine the tapered shaft and sleeve, including the
24 tapered internal surface that mates with the shaft of Piepho, with the main
25 shaft of Torrence. Again, this is nothing more than known prior art.

1 JUDGE MARSCHALL: Could I get some clarification on Claims 13
2 to 17 in the Revised Motion to Amend?

3 MR. SANKS: Claim 13?

4 JUDGE MARSCHALL: Claims 13 and 17. In your opposition, you
5 broadly argue that claims, Substitute Claims 11 and 19, are not patentable,
6 but then, when you get to specific claim arguments, you don't necessarily
7 address those particular claims, which Patent Owner noted in its reply. I'm
8 just wondering if Petitioner is contending that Substitute Claims 13 to 17 are
9 unpatentable.

10 MR. SANKS: We are maintaining that they are unpatentable.

11 JUDGE MARSCHALL: As you'll see in your opposition to the
12 Revised Motion to Amend, you don't specifically address them. Perhaps
13 you address them elsewhere, and that still applies. I'm not sure. I'm just
14 trying to get clarification on that, because in your sur-reply, you didn't
15 address them either. So I'm just wondering what the record is as to those
16 claims that we should be considering.

17 MR. SANKS: I thought we had addressed them in our response to
18 their amended claims.

19 JUDGE MARSCHALL: Your original response?

20 MR. SANKS: Yes.

21 JUDGE MARSCHALL: Okay.

22 MR. SANKS: Yeah, I believe we addressed it in the original
23 response.

24 JUDGE MARSCHALL: And because they didn't change
25 substantively enough, you're saying that applies.

26 MR. SANKS: I do not believe they changed. Right.

1 JUDGE MARSCHALL: Okay.

2 MR. SANKS: I think that one of the key things with Claim 11 was
3 adding the term, freely rotatable, which is in Element 11f. First, the
4 specification does not teach freely rotatable. I mean, those -- that term is
5 nowhere to be found in the specification.

6 JUDGE PESLAK: So, Counsel, for the eccentric rotation, wouldn't
7 one of ordinary skill in the art, looking at Figure 1 of the challenged patent,
8 understand that it shows that the shaft is at an angle to the longitudinal axis?

9 MR. SANKS: Well, we agree that it is rotatably eccentric. It rotates
10 eccentrically. Both experts even agreed that it was freely rotatable. All
11 we're -- the only -- the only thing we're stating is it's not taught. It's not
12 expressly stated in the specification. But on top of that, the same is true of
13 Torrence. Torrence teaches freely rotatable.

14 JUDGE PESLAK: Let's back up a second to Judge Marschall's
15 question, then. It's about Claims 13 to 17. So you're not relying on Torrence
16 for those claims, but rather, you're relying on, I guess, Coxhill and Piepho,
17 and Polinsky and Piepho?

18 MR. SANKS: Yes, Your Honor.

19 JUDGE PESLAK: But they're dependent from Claim 11, right?

20 MR. SANKS: Correct.

21 JUDGE PESLAK: And so, how do you -- where's the motivation?
22 So, if you're relying on -- a bit confusing thing is if you're relying -- you're
23 not relying on Torrence for these dependent claims, but you're relying on
24 Coxhill and Piepho. Where would be the motivation to combine Torrence,
25 Coxhill, and Piepho?

26 (Pause.)

1 JUDGE PESLAK: Mr. Sanks?

2 MR. SANKS: Yes?

3 JUDGE PESLAK: If you want to come back in your rebuttal and
4 make that point --

5 MR. SANKS: If I may, thank you, Your Honor.

6 JUDGE PESLAK: Why don't you go on with your argument?

7 MR. SANKS: Okay. Thank you, Your Honor. Moving on to Slide
8 20, in Patent Owner's reply brief, they brought up two arguments for the first
9 time. One was lack of motivation to combine, and the other one taking a
10 position that Piepho was not analogous art. Both of those references have
11 been cited since the start of this proceedings. It was never brought up until
12 their reply brief.

13 The test for analogous art is, again, there's two separate tests. One is
14 whether the art is from the same field of endeavor, regardless of the problem
15 addressed, and two, if the reference is not within the field of the inventor's
16 endeavor, whether the reference still is reasonably pertinent in the particular
17 problem.

18 And again, we point to -- one of the things we point to is the
19 cooperative patent classification. They're both in the same classification,
20 which is crushing, pulverizing, or disintegrating in general. We also point
21 out, again, MPEP 904.01(c) says not only must the art be searched within
22 which the invention claimed is classified, but also all analogous art must be
23 searched regardless of where the claimed invention is classified.

24 Turning back to Piepho, again, it's a mechanical invention. There's a
25 broad spectrum of prior art that must be explored. The distinction that

1 Patent Owner tries to make is that it's specific to coal pulverizers, but coal is
2 a kind of rock. Rock crushing and pulverizing is a multi-stage process.

3 JUDGE MARSCHALL: I'm sorry. We're going to have to pause
4 again, because we have some frozen video feeds, which means that you are
5 frozen for them.

6 MR. SANKS: Oh, okay.

7 JUDGE MARSCHALL: Judge Peslak, can you hear me through the
8 audio?

9 (No audible response.)

10 JUDGE MARSCHALL: I thought we were past this, but no.

11 COURT REPORTER: We're off the record.

12 (Whereupon, the above-entitled matter went off the record at 10:29
13 a.m. and resumed at 10:33 a.m.)

14 JUDGE MARSCHALL: Back on the record.

15 MR. SANKS: And I still have my ten?

16 JUDGE MARSCHALL: Yes.

17 MR. SANKS: Cool. Okay. One of the arguments Patent Owner has
18 raised is that the examiner did not consider Torrence and Piepho during
19 prosecution. The examiner did cite Torrence but applied Coxhill, which is
20 another gyratory crusher, but yet she allowed the broader issued claims over
21 these.

22 As we've touched on, well, not as much here, because I've, again,
23 focused just really on Claim 11, but we have presented other prior art that
24 shows tapered shafts and tapered sleeve references that could have also been
25 used.

1 The last point I wanted to make was secondary considerations.
2 Copying does not overcome a clear-cut issue of obviousness. It is well
3 established by a number of cases that secondary considerations of non-
4 obviousness simply cannot overcome a strong prima facie case of
5 obviousness. And I've cited several cases in the demonstrative, as well as in
6 my briefs.

7 And that essentially concludes my presentation for right now.

8 JUDGE MARSCHALL: Okay. Any other questions from the Panel?

9 MR. SANKS: They're frozen.

10 JUDGE MARSCHALL: All right. So you've got 15 more; you're
11 going to have 25 minutes for rebuttal, but we're frozen again, so I just got an
12 IM saying we're going to move rooms if this happens again, so we're going
13 to move rooms. But you are completed. I don't think anything the last 20
14 seconds is going to be necessary for you to --

15 (Laughter.)

16 JUDGE MARSCHALL: -- if you could remember it.

17 COURT REPORTER: We're going to go off record.

18 (Whereupon, the above-entitled matter went off the record at 10:35
19 a.m. and resumed at 10:47 a.m.)

20 JUDGE MARSCHALL: We're back on the record, and it's time for
21 Patent Owner's Counsel and his presentation.

22 Would you like to reserve any time for rebuttal?

23 MR. ARJOMAND: Yes, Your Honor, 20 minutes, please.

24 JUDGE MARSCHALL: You may begin when ready.

1 MR. ARJOMAND: Good morning, Your Honors. And may it please
2 the Board, the substitute claims are patentable over the ground based on
3 Torrence and Piepho.

4 Turning to Slide 1, this provides the roadmap for Patent Owner's
5 presentation today. We'll first address whether Piepho is non-analogous art.
6 We will then turn to discussing whether there's a motivation to combine
7 Torrence and Piepho. Third, we will discuss the un rebutted objective
8 evidence that supports the patentability of the substitute claims. And finally,
9 we'll address Claims 13 and 17 -- 13 through 17 that was the basis of some
10 of the questions earlier this morning.

11 JUDGE PESLAK: Counsel?

12 MR. ARJOMAND: Yes.

13 JUDGE PESLAK: I just wanted to be clear for the record. You're --
14 in this case, you're not disputing the mapping of the prior art to the claims.
15 You're just arguing non-analogous art and motivation to combine and
16 secondary considerations, correct?

17 MR. ARJOMAND: That's correct, Your Honor, in this case.

18 JUDGE PESLAK: Okay. Thank you.

19 MR. ARJOMAND: So, turning to Slide 5, Your Honors, as we've
20 discussed in our briefing, obviously, in any kind of obviousness
21 analysis, the art must be analogous to the subject matter of the claimed
22 invention. In our view, Piepho is not analogous art. There are two tests that
23 determine analogous art, and they're set forth here on Slide 5.

24 This is from *In re Clay*. The first test considers whether the art is
25 from the same field of endeavor, regardless of the problem addressed. And
26 the second test is, if the reference is not within the field of the inventor's

1 endeavor, whether the reference still is reasonably pertinent to the particular
2 problem with which the inventor is involved. We will address both of these
3 tests today.

4 So, first, turning to the field of endeavor test, let me jump a little bit
5 ahead to Slide 14. And this slide shows how the Courts have approached the
6 field of endeavor test, Your Honors. This is from *In re Bigio*. What the
7 Courts look at is they -- they determine or they consider the invention's
8 subject matter in the patent application or, in this case, in the issued patent,
9 including the embodiments, function, and structure of the claimed invention.

10 If we take a look at the subject matter here, the embodiments, the
11 function, and the structure between the '568 Patent and Piepho, I think
12 there's only one conclusion that you can reach. And that is that Piepho is
13 non-analogous art. So let me jump back to Slide 7, and I'll address, first, the
14 subject matter between the '568 Patent versus Piepho.

15 So Slide 7 shows the title of the '568 Patent. It's directed to a gyratory
16 crusher main shaft sleeve. If you now turn to Slide 8, the field of invention
17 in the '568 Patent is directed to a gyratory crusher main shaft sleeve. And
18 now, turning to Slide 9, if you take a look at the background art discussion,
19 every reference that's cited in the background section is gyratory crusher art.

20 Finally, taking a look at Slide 10, if you take a look at the examiner's
21 analysis of the application during prosecution, every reference that she cited
22 was a gyratory crusher reference. So, if you take a look at just the patent
23 itself, from the title to the field of invention to the background of the art and
24 to how it was examined by the examiner, the focus has been on gyratory
25 crushers, specifically a sleeve of a main shaft for a gyratory crusher.

1 This is in stark comparison to Piepho. So, turning to Slide 11, this is
2 the field of invention of Piepho. It's directed to a coal pulverizer,
3 specifically a Babcock and Wilcox Type E and Type EL coal pulverizer. If
4 you go --

5 JUDGE PESLAK: Counsel?

6 MR. ARJOMAND: Yes.

7 JUDGE PESLAK: Is there anything in this patent that makes a
8 distinction between coal and rocks?

9 MR. ARJOMAND: Well, I think -- I think the -- the distinction, Your
10 Honors -- and we can get to this in -- in subsequent slides, but the fact that
11 it's a coal pulverizer that's pulverizing coal is the distinction between Piepho
12 and the '568 Patent, which is directed to a gyratory crusher, which crushes
13 rock through gyratory action.

14 JUDGE PESLAK: Okay. Well, let me ask the question another way,
15 and maybe you can address this as you go through. But all the case law you
16 cited is pre-*KSR*, and you know, *KSR* tells us that the person of ordinary skill
17 in the art is not an automaton and can see, you know -- you know, and will
18 apply what is, you know, reasonably pertinent to, sort of -- to other
19 applications.

20 And the Federal Circuit has also told us subsequent to *KSR* that we
21 should interpret the scope of analogous art broadly. So maybe you can tailor
22 your argument to show how -- how this fits into the *KSR* case law, not pre-
23 *KSR* case law.

24 MR. ARJOMAND: Yes, Your Honor. I think if you take a look at
25 the post-*KSR* case law, at least with regard to the -- the field of endeavor
26 test, which is where I'm at, the -- the -- the analysis of looking at the subject

1 matter, the function, and the structure and the embodiments between the --
2 the patent at issue and the art has not changed.

3 I believe that the MPEP actually talks about this, that *KSR* has not
4 changed the analysis for the field of endeavor test. And the reason for that
5 is, Your Honors, is that if you try to kind of approach this at a very high
6 level and look at this as a just simply, well, you know, Piepho is directed to a
7 coal pulverizer that's crushing rocks, and the '568 Patent is directed to a
8 gyratory crusher, and that's crushing rocks, that's -- that's too high of a level
9 of analysis.

10 The Courts, even post-*KSR*, still continue to demand that the Board
11 consider the -- the subject matter, the function, the structure, and the
12 embodiments. And I think when you do that, there's only one conclusion
13 that you can reach, that the two -- between the '568 Patent and the -- Piepho,
14 they're completely different -- different animals.

15 Does that answer your question, Judge Peslak? I would be happy to
16 continue with that discussion. I think it's sort of baked into what I'll be
17 presenting, but happy to discuss it more with you.

18 JUDGE PESLAK: Well, I -- I mean, in the challenged patent, you
19 have a shaft with a sleeve. And in the -- Piepho, you have a shaft with a
20 sleeve. One's crushing rock. One's crushing coal. There's no distinction in
21 the prior art -- in the challenged patent between rocks and coal.

22 So, you know -- you know, it could be argued that you're really trying
23 to parse this far too thinly from what one of ordinary skill in the art -- why
24 wouldn't they look to Piepho when you have, you know, similar structures?

25 MR. ARJOMAND: Well, I'm going to get through the -- to the
26 similar structures point, but just beginning with the first part of your

1 question or your -- yeah, your question, Your Honor, I -- I think,
2 respectfully, the way you've framed the -- the '568 Patent versus Piepho is
3 not -- is not quite right.

4 So, when I went through the slides with regards to the '568 Patent, it's
5 actually directed to a gyratory crusher main shaft sleeve. It's not directed to
6 a gyratory main shaft. So your -- the way you framed it, that this is a shaft
7 and a sleeve in the '568 Patent and there's a shaft and a sleeve in Piepho, is
8 not -- is not quite right.

9 And if you go back to the slide that I was just at, which is Slide 12, I
10 think -- this is from Dr. Kytomaa's declaration, Exhibit 2022, paragraph 15.
11 He -- he says that the purported invention in Piepho is not about a sleeve but
12 a coating layer for a coal pulverizer shaft. And he quotes a -- a portion of
13 Piepho, specifically, quote, "The present invention comprises an intervening
14 layer of a material such as a thermal sprayed ceramic coating for reducing
15 local stresses in the shaft within the joint by reducing the relative
16 movement."

17 And we asked -- actually asked Mr. Smith at his deposition if that's
18 what he understood to be the purported invention of Piepho. And he said,
19 yes, it's -- it's a coating that can be placed on the shaft to reduce or eliminate
20 threading.

21 So I believe, like, right off the bat, what we're talking about are two
22 very different subject matters. One is directed to a gyratory crusher main
23 shaft sleeve, while the other is directed to a coal pulverizer where the focus
24 is on the thermal ceramic coating that's being applied to the shaft so that it
25 doesn't result in threading-induced failure through its interaction with the
26 yoke bushing.

1 And if I may, I think when you start to look at the -- the -- the
2 structure, the function, and the embodiments, those differences become even
3 more apparent. So, in the case of -- of -- let's take -- take first operation.
4 And I should say before I -- I walk through all of these different --
5 differences, instruction function between the '568 Patent's gyratory crusher
6 and the -- the coal pulverizer in Piepho, I don't believe this is actually
7 disputed by Petitioner.

8 In their amended surreply, they seem to accept that these differences
9 existed between the '568 Patent and Piepho. But let me just go through them
10 so that the record is clear. So, with regard to operation -- here, I'm on Slide
11 17. And this is showing Figure 1 of Piepho, and it's also -- has paragraph 20
12 from Dr. Kytomaa's declaration. And he explains that the main shaft of the
13 coal pulverizer is designed to rotate concentrically about the longitudinal
14 axis of the shaft.

15 Now, turning to Slide 18, this is now the '568 Patent. The shaft of the
16 gyratory crusher, on the other hand -- I'm -- I'm quoting from paragraph 21
17 of Dr. Kytomaa's declaration -- that the shaft of the gyratory crusher, on the
18 other hand, is designed to rotate eccentrically; that is, gyrate with the
19 longitudinal axis of the main shaft angled relative to the longitudinal axis of
20 the rock crusher itself. Those are two very different operations.

21 Now, turning to Slide -- Slide 22, let's discuss loading. This is -- this
22 is showing, again, Figure 1 of -- of Piepho, and it's -- it's also quoting from
23 Exhibit 2022, Dr. Kytomaa's declaration, paragraph 25. He says that the
24 grinding loads in Piepho are applied around the entire circumference of the
25 yoke. Compare that to the '568 Patent. This is Slide 23, paragraph 26 from
26 Dr. Kytomaa's declaration. It says that the '568 Patent, the crushing force is

1 only applied on one side of the shaft when the gyratory motion reduces the
2 size of the crushing zone between the opposing crushing shelves.

3 Now let's turn to the wear environment. This is Slide 24. In Piepho --
4 this is, again, from Dr. Kytomaa's declaration, paragraph 27 of Exhibit 2022.
5 The yoke bushing described in Piepho, Dr. Kytomaa is testifying, is not
6 directly exposed to the coal being processed and the resulting abrasive
7 environment. In contrast, he says, the main shaft sleeve described in the
8 '568 Patent is directly exposed to the materials being processed and the
9 resulting abrasive environment. That's yet another difference.

10 Now, turning to the fourth difference, look at the -- the rotations
11 between the two devices. I'm here on Slide 25. This is Exhibit 2022, again,
12 Dr. Kytomaa's declaration, paragraph 28. Dr. Kytomaa testifies the yoke
13 bushing must be able to transmit torque between the shaft and the yoke in
14 Piepho. Consequently, there's not -- there's not intended to be any relative
15 motion between the yoke and the yoke bushing or the yoke bushing and the
16 shaft.

17 He then goes on to say this is in contrast with the main shaft sleeve of
18 a gyratory crusher described in the '568 Patent, which is intended to slide
19 within the bearing assembly as the main shaft moves. This testimony, as --
20 as -- and all the testimony that I've so far read into the record, is unrebutted.
21 And in fact, as I've just said, Your Honors, I believe Petitioner doesn't
22 dispute these differences between the '568 Patent and the -- and Piepho's
23 coal pulverizer.

24 But just to finish it off, in terms of assembly and disassembly, the two
25 are very different. This is Slide 26. This is from Exhibit 2022, paragraph
26 29. Again, Dr. Kytomaa is testifying, in an unrebutted manner, that the yoke

1 bushing in Piepho is not a wear component in the coal pulverizer, and as
2 such, a POSITA would recognize that the yoke bushing would not be
3 expected to require regular replacement.

4 In contrast, the main shaft sleeve of the '568 Patent, which is what the
5 '568 Patent is directed to, is a wear component in a gyratory crusher. And as
6 we've provided with some evidence, Sandvik recommends that there be a
7 certain amount of time -- after a certain amount of time, that wear sleeve
8 should be replaced.

9 So, turning to Slide 28, if you look at the -- the rotation, the -- the --
10 the -- the way that the shaft is cantilevered or not, the load distribution
11 around the main shaft, the load concentration, the main shaft, you know,
12 wear sleeve replacement issue, the torque transmission -- these two subject
13 matters, gyratory crusher versus coal pulverizer, are very, very different.

14 And Petitioner's only, like, general point, Your Honors, is that, well,
15 coal is a rock, and a coal pulverizer crushes rock, and a gyratory crusher also
16 crushes rock. But if you just take a look at the words themselves, a coal
17 pulverizer pulverizes. It reduces the rock into a fine powder. A gyratory
18 crusher crushes rocks. There are -- there are completely different
19 approaches to analyzing or addressing comminution, you know, basically
20 reducing rock size. And we have --

21 JUDGE PESLAK: Counsel?

22 MR. ARJOMAND: Yes.

23 JUDGE PESLAK: I think Petitioner is also arguing that you may
24 have waived this argument. Piepho has been in the case since they filed the
25 petition and you filed a preliminary response. You filed a response to the
26 petition, never mentioned this. You filed two motions to amend. And only

1 in your reply to the second motion to amend did you raise this issue. What -
2 - what's your response to that?

3 MR. ARJOMAND: Absolutely not have we waived the issue. What's
4 happened in this proceeding is that Petitioner, from the start, has relied on
5 Polinski as its primary reference. It's -- it's relied on Polinski. In -- in our
6 view, as we'll discuss in the next proceeding, Polinski is a compromised
7 reference. And so I think it realized that Polinski was a compromised
8 reference.

9 And in response to our revised motion to amend, Petitioner shifted
10 gears and raised a new ground. The new ground is not Polinski in view of
11 Piepho or Coxhill 800 in view of Piepho. There's a new ground that was
12 raised in the opposition to the revised motion to amend, Your Honors. And
13 that ground was Torrence in view of Piepho.

14 I am sure Petitioner considered the -- the analysis of those two
15 references, whether it makes sense for it to combine those references. And it
16 was required to establish, when it raises a new ground, all the requirements
17 for establishing obviousness. So it introduced a new ground, and it didn't do
18 its homework. It didn't check off the boxes. It presented a ground where
19 Piepho is not analogous art. And furthermore, it had the opportunity -- after
20 we presented that argument in the reply, it had the opportunity to cross-
21 examine Dr. Kytomaa on the argument, and it took advantage of that
22 argument. They did depose Dr. Kytomaa.

23 So there's absolutely been no waiver of the issue, Your Honor.

24 JUDGE PESLAK: Let's just back up a second. Piepho, you agree,
25 was part of the grounds in the initial petition, correct?

26 MR. ARJOMAND: In the -- in the petition, yes, Your Honor.

1 JUDGE PESLAK: So you've just gone through the comparison
2 between Piepho and the challenged patent. It -- and that's the proper
3 analysis for whether the art is analogous or not, not which reference it's
4 combined with. So I don't think you've addressed my question, which is
5 why haven't you waived this argument?

6 MR. ARJOMAND: I -- with all due respect, Your Honor, I believe
7 we -- I have addressed your question. The -- the analysis is one they
8 presented in the petition, Polinski in view of Piepho. As I mentioned,
9 Polinski was a compromised reference. It was their primary reference. We
10 focused on that as the -- the -- the basis for our arguments in our initial
11 motion to amend.

12 That -- that's what we did. That -- that was what we focused on.
13 There's no waiver when we focused on a compromised reference, especially
14 when they then withdrew that compromised reference, Polinski, and inserted
15 a new ground.

16 JUDGE MARSCHALL: But the non-analogous -- non-analogous
17 argument was available to you in your first motion to amend, correct?

18 MR. ARJOMAND: Well, yes, Judge Marschall, in the sense that
19 there are lots of arguments that are available to us.

20 JUDGE MARSCHALL: Right. But you can't get around a waiver by
21 saying, we had a better argument; therefore, we didn't think we needed it --
22 and then raise it later.

23 MR. ARJOMAND: I -- I -- I -- I disagree with that, respectfully,
24 Your Honor. I mean, in -- in our opinion, when you have a situation where
25 they -- they have changed the grounds of the rejection -- they basically have
26 changed the art for the -- for the rejection -- that -- they -- they had to -- they

1 had to go through the same analysis that they did in their petition, which is --
2 I mean, putting aside the combination of Torrence and Piepho, they have to
3 check off all the boxes.

4 JUDGE MARSCHALL: Actually, in the petition, they don't have to
5 check off the box of going through a full analogous art argument. That's
6 something that they can respond to after Patent Owner raised it in a
7 preliminary response. So it's not as if they have to go through that full
8 analysis from the get-go.

9 MR. ARJOMAND: And as we'll show you, they never even did the
10 analysis anywhere else in the -- in the -- in the proceeding. And what they
11 did was -- was incomplete and incorrect. So whatever they did I don't think
12 is sufficient. But what -- what I'm trying to get at, Your Honors, is that the -
13 - the -- the presentation of a new ground allows us to raise whatever
14 arguments that we need to make to rebut that argument in reply. I don't
15 think that that's -- that's a waiver at all. I don't know if you had any further
16 questions on that issue, Your Honors.

17 JUDGE PESLAK: I don't.

18 MR. ARJOMAND: So let me now turn to -- so -- so I do want to just
19 briefly touch upon, Judge Peslak, your earlier questions about the -- the --
20 the case law. I do think *In re Clay* is still valid case -- is a valid case, even
21 post-*KSR*, with respect to analogous art. And one thing that *In re Clay*
22 makes very clear -- and here, I'm on Slide 29 -- is that you cannot just take a
23 look at the -- at -- at -- at a high level, the patent and the art that's being
24 challenged as being non-analogous art.

25 So, specifically in *Clay*, the issue was a gel for basically trying to
26 control or address the storage of petroleum fluids. And the art was also

1 related to a gel in the petroleum industry. And I think the Patent Office in
2 that case argued that it was -- that the reference -- Sydansk was the name of
3 the reference. Sydansk was -- was an analogous art because it related to the
4 petroleum industry.

5 The Court in *In re Clay* said that's not the right approach. They
6 focused on structure, function, and embodiment. And in doing so, they, I
7 think, made clear that you have to kind of go into the details. And I think
8 that the problem with Petitioner's arguments of saying, oh, this is all just
9 rock crushing, is that it sort of falls into the same trap that the Patent Office
10 did -- fell into with respect to the *Clay* case.

11 We had another case, Your Honors, that we cited to. This is on Slide
12 30. This is the *Wang* case. And in the *Wang* case -- also had a similar
13 situation where -- and with respect to the field of endeavor test, the -- the --
14 the -- the party argued that it wasn't analogous art because the -- the patent at
15 issue and the art all related to memories. And they said that that was not the
16 sufficient -- that's not the right approach.

17 I don't think these two cases are in any way -- have been changed or
18 their import has changed since *KSR*. The case law is pretty clear that you
19 always look to the function, structure, embodiments at a detail that makes
20 sense, which in this case is not at the high-level detail like memories or
21 petroleum industry or crushing rock, but rather, you go to the actual
22 operation, function, and structure of the patent versus the art.

23 Let me just briefly turn to the -- to the second test, which is
24 reasonably pertinent to the problem solved by the '568 Patent. So, for this
25 test, I should -- I should first say that Petitioner never raised this -- this test
26 in any of their papers. So -- so, to the extent that you think that they raised

1 the field of endeavor test in -- in their papers -- and I'll get to that; I don't
2 think they did -- they -- they didn't at all in the reasonably pertinent context.
3 They didn't raise that test. They -- they -- they did not -- even though they
4 knew about the test, they didn't raise it.

5 But let me just quickly just address what the -- the -- the problem here
6 is. And here on Slide 32, this is Exhibit 2022, paragraph 32 from Dr.
7 Kytomaa's declaration. And he says that the '568 Patent concerns the
8 problem of assembling and disassembling a wear sleeve from a main shaft of
9 a gyratory crusher. And I believe that we asked Mr. Smith -- I'm here on
10 Slide 34 -- what the problem that was addressed -- this is in the context of
11 the '090 Patent. But he said basically the same thing. We are -- what are the
12 best ways for seating or assembling of the sleeve? This is Exhibit 2006 at
13 line 21 -- or page 21, line 20, to page 22, line 1.

14 So there's no dispute, I think, between the parties of what the problem
15 in the '568 Patent is directed to. Now, if you -- if you take a -- take a look at
16 -- at Slide 35 here, Your Honors, or actually Slide 37, what the '568 Patent is
17 focused on is this focus on the cylindrical geometry of wear sleeves. And it
18 says -- this is in the Background section. It says that these were commonly
19 used. And this is, you know, basically column 1, lines 38 to 47 -- but that
20 there was problems associated with them.

21 And that's explained a little bit more in Slide 39 here, where they --
22 they said there's a number of problems that exist with conventional
23 protective sleeves. And so the -- the '568 Patent is looking at cylindrical
24 sleeves, and it basically has an innovation where it -- it went past cylindrical
25 sleeves to do something else. So the problem that's being presented here is a
26 focus on -- on the wear sleeve, its assembly, and disassembly. And when

1 you look at the -- at Piepho, what it says -- and this is -- this is at -- let me go
2 back to Slide 33. The -- the -- or actually Slide -- Slide 35.

3 What it's saying is that there is really -- in its view, there's two
4 options. There's -- there's the option of a tapered job or, alternatively, a
5 cylindrical joint. So it's making it very clear that those are two options. And
6 what's even more important about Polinski is that it says that -- here on Slide
7 46 that some of the advantages of the present invention include the
8 following: the existing shaft and yoke geometries need not be changed.

9 So someone looking at the problem of cylindrical sleeves in the case
10 of the '568 Patent wouldn't find Piepho to be at all reasonably pertinent
11 because it's not making any kind of definitive statement about cylindrical
12 sleeves versus tapered sleeves. And instead, it's saying that the existing
13 shaft and yoke geometries need not be changed.

14 And so, if you go to Slide 47, Your Honors -- this is Exhibit 2022,
15 paragraph 16 from Dr. Kytomaa's declaration. He says at the end of this --
16 at the end of this paragraph a POSITA, therefore, would not look to Piepho
17 when considering the -- the geometric design of a shaft sleeve and associated
18 shaft for a gyratory crusher since Piepho does not address the geometric
19 designs of such components. So, in our view, Piepho is not reasonably
20 pertinent to the problem that the '568 Patent is concerned with.

21 Now, let me just briefly discuss why we think that Petitioner has not
22 raised this issue in any of its briefings. So let me just turn to Slide 49. This
23 is from Dr. -- or Mr. Smith's declaration, paragraph 13. He -- he sets forth
24 what the test is. He was aware of the test. There's -- there's no doubt about
25 that. In Slide 50, it's very clear from the case law -- I think you mentioned

1 it, Your Honors -- that you're supposed to compare the reference to the
2 challenged patent, not compare the references to each other.

3 If you go to Slide 54, Your Honors, what -- what did Petitioner do?
4 This is in the petition. Judge Marschall, you asked, they're not supposed to
5 raise -- they're not required to raise it in the -- in the petition. But in their
6 view, they were comparing Polinski and Piepho. They said they're -- they're
7 -- they're the same, and they're both directed to a gyratory rock crusher.

8 One, they're not supposed to compare Polinski to Piepho, and Piepho
9 is definitely not a gyratory rock crusher. So they -- they don't apply the
10 correct test, and they're mischaracterizing what the reference is. So, if you
11 go to Slide 56, Your Honors, in terms of the reasonably pertinent test, they
12 had in -- in their papers -- they knew how to raise that test. They never
13 raised that test. So, here, they're using -- raising it with respect to Yagi, but
14 when it came to Piepho, they never raised it as reasonably pertinent.

15 So the -- the -- if you look through the record, they never, never, in
16 any of their papers, framed the issue correctly. They just assumed that
17 Piepho is analogous art because they were comparing it to Polinski, which is
18 -- which is error. And you know, I think it's -- it's important, in our view,
19 that that error sort of infects their entire analysis. So, beyond the analogous
20 art argument, we think that they -- they -- their approach to Piepho has -- has
21 -- sort of indicates that their -- that they have looked to the combination with
22 -- you know, with hindsight. And that's -- and that's wrong.

23 So, if I -- if you can go to Slide 67 here, Your Honors -- so, when we
24 asked Mr. Smith, you know, a little bit about Piepho, he testified -- this is
25 Exhibit 2021 at page 65, lines 5 through 16. He testified that, I basically

1 looked at Piepho to talk about the main shaft and a tapered section of the
2 main shaft.

3 In other words, he -- he took a look at our claims, looked to see, you
4 know, what he needed to find, and for the case of -- you know, for the claim
5 limitations directed to a -- a tapered sleeve, he basically hunted for it and
6 looked at Piepho without considering the rest of Piepho -- one, that Piepho is
7 not directed to a gyratory crusher -- it's directed to a coal pulverizer -- but
8 two, you know -- you know, he argues that the reason for combination is that
9 a cylindrical sleeve -- you know, putting on a cylindrical sleeve in these
10 contexts was notoriously difficult. He says that it's notoriously difficult.

11 But when you look at Piepho itself, it says that -- in Slide 68, it says
12 that, you know, utilizing a cylindrical joint is -- is an alternative to utilizing a
13 tapered joint. There's nothing in Piepho to suggest that a cylindrical sleeve
14 is notoriously difficult to place on. So we think that those are telltale signs,
15 both his testimony regarding how he approached Piepho, which I just
16 provided you in Slide 67, and what Piepho itself discloses in terms of
17 undercutting its motivation that there's a notoriously difficult approach to
18 doing a cylindrical fit. I think those make clear that his motivation analysis,
19 his combination, is based on improper hindsight.

20 Unless Your Honors have any further questions, I can -- on -- on this
21 issue as relating to analogous art and motivation to combine, I'll pivot to
22 secondary considerations.

23 JUDGE PESLAK: Actually, maybe you should address Claims 13 to
24 17 first.

25 MR. ARJOMAND: Yes, of course. Happy to do. So, as you noted,
26 Judge Peslak and -- and Judge Marschall, Petitioner did not challenge

1 Claims 13 and 17 in -- in its opposition to the revised motion to amend.
2 That's Paper 29. The paper addresses Claims 11 and 12, and then at page 20
3 of that paper, it shifts to Claims 18 and 19.

4 In our -- in our reply, Paper 46, we argued that Petitioner forfeit its
5 challenge to the -- to the claims and -- not -- I should say our paper wasn't
6 46. In our reply, we argued that Petitioner forfeited its challenge to its -- to
7 its claims, and Petitioner did not respond at all in its amended surreply,
8 which is Paper 46, Your Honors. So we put -- we put Petitioner on notice
9 they didn't argue these claims, and they didn't provide any response.

10 Now, I think, Judge Marschall, you indicated that there might have
11 been a general reference to the unpatentability of Claims 11 through 19. But
12 we don't think that that's a sufficient -- that's sufficient for the purposes of
13 establishing that Claims 13 through 17 are unpatentable.

14 First, there's a new ground in the opposition. So for them to rely on
15 what's done in the past is not proper. As Judge Peslak noted, in the -- in the
16 opposition to the first motion to amend, the grounds were different. It was
17 Polinski in view of Piepho, and it was Coxhill in view of -- of -- of Piepho.
18 It was a different ground with regard to Torrence in view of Piepho. And
19 those limitations that are directed in Claims 13 and 17 are not -- are -- are
20 limitations that are directed to the primary reference, not the secondary
21 reference. So the ground shifting is -- is definitely relevant.

22 In addition, even if -- even if you were to accept that or to believe that
23 their ground hasn't changed, it's not our job to go hunt for the record to find
24 what arguments that they've made as to Claims 13 and 17. They have to tee
25 up the issue for us to respond. So they didn't raise it in the opposition, and
26 we -- we made that note. And to the extent that Petitioner believes that a

1 general statement somehow incorporates by reference, you know, what's
2 prior -- for example, in the Smith reference, I think that's wrong.

3 If you can -- if I can jump forward to Slide 97, Your Honors were
4 very clear -- you know, this is -- I believe this is Paper 20, which is the
5 preliminary guidance in this case, at pages 8 through 9. Your Honors were
6 very clear that you can't incorporate by reference. This goes back to my
7 earlier point. The way Petitioner has conducted its case has been -- has been
8 very, very challenging. And they, in the first round of briefing, basically
9 provided a very lengthy Smith declaration, and their papers basically just
10 cited to the Smith declaration and made no arguments.

11 And you reminded Petitioner at that point in the preliminary guidance
12 that improperly incorporated arguments from a declaration are in violation
13 of 37 CFR 42.6(a)(3) and may not be considered by the Board. So they were
14 on notice. They didn't raise it in the opposition. We raised it in the reply.
15 They didn't raise it -- or they didn't address it in the surreply.

16 We're not in the -- we're not in the position or we -- we're not -- we
17 shouldn't be hunting in the record for what their arguments are. And to the
18 extent that they're pointing to other aspects of the record, they can't
19 improperly incorporate, and they were on notice of that as well. So we think
20 13 and 17 -- Petitioner has forfeited its challenge as to those claims.

21 I don't know if, Judge Peslak or Judge Marschall, you have any
22 questions with respect to that.

23 JUDGE PESLAK: I don't.

24 JUDGE MARSCHALL: I think we'll wait to hear from Petitioner
25 first.

1 MR. ARJOMAND: Okay. Great. I -- I'm -- I see that I'm going into
2 my rebuttal time. I'll try to address objective indicia of non-obviousness,
3 and then whatever's remaining I'll use for rebuttal. Is that okay, Judge
4 Marschall?

5 JUDGE MARSCHALL: Yes.

6 MR. ARJOMAND: Okay. Great. So let me just turn to Slide 70.
7 And this -- this is a slide setting forth the case law for objective indicia of
8 non-obviousness. I -- I think you're all aware evidence of objective indicia
9 of non-obviousness, if present, which is the case here, must always be
10 considered before reaching a determination on the issue of obviousness.

11 And then, in -- in the *Medtronic* case, objective indicia of non-
12 obviousness may often be the most probative and cogent evidence in the
13 record. And so, with regard to that, we provided objective indicia of non-
14 obviousness. We provided evidence of the Sandvik CH440 main shaft
15 sleeve. We established nexus to that shaft sleeve. And you know, I think
16 there wasn't really any dispute from Petitioner as to that.

17 If we jump ahead to Slide 79, we also -- we also showed that
18 Petitioner's main shaft sleeve embodies and is coextensive with Substitute
19 Claim 11. In fact, here on Slide 79 -- this is from Exhibit 2010 -- basically,
20 Petitioner markets itself as offering all the replacement parts you need for
21 Sandvik's CH440. So it's -- it's -- it was very clear, in our opinion, that the --
22 both the CH440 and Petitioner's main shaft sleeve embody and are
23 coextensive with Substitute Claim 11.

24 And we also believe that there's really no dispute that CMS has copied
25 Sandvik, as I've discussed here on Slide 79. CMS's website specifically
26 refers to offering all the parts you need for Sandvik's CH440 product. If you

1 go to Slide 80, this is showing from the record a comparison of the Sandvik
2 sleeve versus the CMS sleeve. And as you'll see, the critical dimensions are
3 basically the same or essentially the same.

4 And what's even more, sort of, proof of the fact that CMS has copied
5 Sandvik here is that the -- if you take a look at Slide 82, the OEM number of
6 -- of CMS's product is 213813, basically. If you go back to Sandvik's
7 product, what is the OEM number? 213813. This is in Slide 71. So there's
8 really -- there's no dispute here that CMS has copied Sandvik's invention.

9 Turning to Slide 83, Your Honors, you -- in your preliminary
10 guidance, you noted this. You noted that, at the time, Petitioner had not
11 rebutted that there was copying. It had not rebutted that the product didn't
12 embody the claimed features, that there was no nexus. There was just no
13 rebuttal at all. And this was in response to our first motion to amend. In our
14 revised motion to amend, we submitted essentially the same evidence. And
15 once again, Petitioner did not provide any rebuttal at all.

16 Turning to Slide 93, I think their only argument is that, well, we have
17 such a strong prima facie case, we don't have to really worry about
18 secondary considerations. And I think that's legally and factually wrong.
19 First of all, as discussed, we think they don't have a strong prima facie case.

20 But even if you take a look at some of the case law that we cited in
21 our brief, specifically in our reply at page 11, there's the *Tec Air* case and the
22 *Medtronic* case. Both of those cases -- the secondary in -- in -- I think in *Tec*
23 *Air*, Your Honors, there actually -- there was a prima facie case that was
24 established by the challenger. But the secondary consideration was
25 sufficient to overcome that. And in the *Medtronic* case, there's a

1 parenthetical here that says a close prima facie case can be overcome by
2 strong objective evidence. This is all in Slide 93.

3 Turning to Slide 95, I know that Your Honors have indicated that
4 copying evidence may -- may not be the strongest form of -- of secondary
5 considerations. But we want to just highlight these two cases here on Slide
6 95 that underscore that copying in fact can be a very strong indicia of non-
7 obviousness, and in fact they might be the most probative and cogent
8 evidence in the record.

9 And I want to underscore the fact here that it's especially probative
10 here because a competitor, CMS, copied the invention. There's no dispute
11 about that. The evidence shows that CMS did not come up with the -- the
12 invention on its own. It found Sandvik's invention of value and then copied
13 it. And I think that makes this evidence particularly probative. They clearly
14 thought the invention was non-obvious and had value; otherwise, they would
15 not have copied it.

16 Now, I know that the *Volvo Penta* cite also mentions that it alone is
17 not dispositive of non-obviousness -- that is, copying. But if you take a look
18 at -- if you take a look at -- at Slide 86, we have another basis for secondary
19 considerations, and that's the *Leo* case. The *Leo* case says that the length of
20 time between the publication dates of the prior art and the claimed invention
21 can also qualify as an objective indicator of non-obviousness. This is Slide
22 86.

23 And that's the case here because when you take a look at Torrence,
24 which is Slide 87, it was -- it issued 1974. That's about 40 years before the
25 '568 Patent application was filed. And what we know from Torrence -- this
26 is on Slide 88 -- is that it explains that the wear sleeve in Torrence was

1 replaceable. So we know that for 40 years, people were utilizing wear
2 sleeves, and they knew that they were replaceable, but no one had come up
3 with the '568 Patent's invention until, obviously, the '568 application was
4 filed and issued.

5 So we think that that's a strong factor --

6 JUDGE PESLAK: Counsel?

7 MR. ARJOMAND: Yes.

8 JUDGE PESLAK: Isn't the second part of long-felt need that you
9 have to show that others tried and failed? I don't know that you can just rely
10 on an inference here, which is what you're asking us to do, I think, that it
11 was a long time between the prior art and this patent.

12 MR. ARJOMAND: Judge Peslak, we actually looked into that. And I
13 will direct you to -- to our Paper 34. Specifically, on page 12, we cite the
14 *Millennium Pharmaceutical* case. That's 862 F3d 1356 at 1369. In that
15 case, it makes it clear that long-felt need doesn't necessarily need to require
16 failure of others.

17 JUDGE PESLAK: Okay. So the second question is -- maybe I
18 missed it, but when you were going through your discussion of secondary
19 considerations, did you point us to where in the record there's a factual
20 showing of nexus?

21 MR. ARJOMAND: Yes, Your Honor. I can certainly go through
22 those slides. I have them here. But we -- we provided detailed evidence,
23 and it's in the record. Beginning, for example, in -- in Slide 73, we sort of
24 walk through each claim element and map it to the Sandvik sleeve that we
25 have. And we do the same thing for the CMS sleeve. It's -- it's --

1 JUDGE PESLAK: Did you have your expert do that, or is it just
2 argument on your part?

3 MR. ARJOMAND: No, no. We -- we have our expert -- we had our
4 expert do that. And I can point you specifically to the paragraphs where we
5 -- where he did that. I will -- let me point you to -- so beginning --
6 beginning at paragraph 78, Your Honor, of -- of Exhibit 2020, Dr. Kytomaa
7 goes element by element through -- through the analysis. And he maps
8 every claim element to the Sandvik CH440 product. And then he does that
9 as well for the CMS.

10 And that goes all the way -- that basically goes all the way -- it starts
11 at what I said, paragraph 78, I believe. It goes all the way to paragraph -- I
12 think it goes all the way to paragraph 129. So from 78 to 129, I think, is the
13 analysis, Your Honor.

14 JUDGE PESLAK: Okay. Thank you.

15 MR. ARJOMAND: So, finally, with the -- the few minutes that I
16 have left, I just want to also raise that we believe that there's a 325(d) issue,
17 as well, here, in that when they raised a new ground in their opposition to the
18 revised motion to amend, they basically cited art that was considered by the
19 examiner. So Torrence was cited by the examiner, Your Honors, as was
20 Coxhill '800. In fact, Coxhill '800 was applied. We have testimony in the
21 record that we've pointed to that -- from Mr. Smith where he understands
22 that, at least in the context of the sleeve, Coxhill '800 and Torrence are -- are
23 essentially the same disclosures.

24 So, in our opinion -- again, this goes to the fairness issue -- they --
25 they have -- they -- they scrupulously avoided citing art that had been
26 considered in the case of Polinski. After showing that Polinski was a

1 compromised reference, they turned around and cited art that had already
2 been in front of the examiner. And we think that that's an additional basis
3 for denying their challenge.

4 Unless there are any further questions, I'll reserve the remainder of my
5 time for rebuttal.

6 JUDGE MARSCHALL: Okay. Thank you. You have nine minutes
7 left.

8 MR. ARJOMAND: Thank you, Your Honors.

9 JUDGE MARSCHALL: You can begin when ready. You have up to
10 25 minutes left.

11 MR. SANKS: All right. Thank you. To begin with, I just want to
12 reiterate we did not concede anything with respect to Piepho. And just as
13 your kind of recap, when our petition was filed, Patent Owner did not file a
14 response to the petition. Instead, they opted to amend. We simply presented
15 the best prior art at that time based on their amendment.

16 Then they chose to do a substitute amendment. Again, we went back,
17 looked at the prior art, and we presented the best arguments with respect to
18 prior art that was out there to show that even their amendments were still not
19 patentable.

20 Patent Owner relies a lot on Dr. Kytomaa. Dr. Kytomaa, to us, was
21 simply nothing -- I consider a hired gun. He was going to say what they
22 needed to support their case. A classic example, that came back to the
23 Piepho case. In that case, we asked specifically about, didn't Piepho disclose
24 the preferred embodiment was a tapered shaft? He would never
25 acknowledge that. He would always just go back and say they disclosed a

1 cylindrical and tapered shaft, even though there's -- in the specification
2 itself, it states the preferred embodiment is a tapered shaft.

3 That was kind of just a -- the two times we took his deposition, I
4 mean, we never got what I consider would have been a straight answer on
5 such -- such matters when it was clearly disclosed, even down to freely
6 rotatable and with respects to Torrence.

7 Turning back to Claims 13 through 17, 13 through 17 all depend from
8 Claim 11. We did not address that -- I will go on the record and say we did
9 not go into details as to why we said that they were not patentable. But
10 Claim 13, for example -- I mean, again, it was, in our view, not absent both
11 over Torrence in view of Piepho and Polinski, which are on the record.

12 Claim 13 all is --

13 JUDGE MARSCHALL: Well, it's in the analysis in the expert
14 declaration, the third one, but it didn't make it into the --

15 MR. SANKS: Into the --

16 JUDGE MARSCHALL: -- the brief. And given our warning before
17 that even if you cited to it, that wouldn't be proper, you know, arguably,
18 you're skirting the briefing limitations even if you did cite to it. So -- and it
19 didn't really put Patent Owner on notice as to what you were going to argue.
20 Even though they could read the declaration and --

21 MR. SANKS: Understood.

22 JUDGE MARSCHALL: -- and understand it, it puts --

23 MR. SANKS: He --

24 JUDGE MARSCHALL: -- puts Patent Owner in an awkward
25 position.

1 MR. SANKS: I understand that. But even from that standpoint, to be
2 able to get 13 through 17 in, they'd have to show that Claim 11 is patentable.

3 JUDGE MARSCHALL: Well, it's -- they depend from Claim 11, so
4 if we find Claim 11 unpatentable, we would then have to address those
5 claims. If they -- if they win on Claim 11, then we don't even need to get
6 there. So, arguably, if you are unsuccessful, then we won't need to get there.
7 But if you want to knock out all the claims, we'll have to eventually address
8 whether those claims are patentable and whether we can even consider the
9 arguments made in the declaration, given that they weren't made in the brief.
10 So --

11 MR. SANKS: And I -- again, I look at this whole process from the
12 standpoint this has been brought back to the Patent Office with the prior art.
13 That's, to me, uncontroverted that this is -- this is prior art that wasn't
14 considered and probably should have been considered. It's not been brought
15 to the Patent Office. That's -- that's kind of how I kind of analyze the
16 situation here.

17 As for, like, secondary considerations, I mean, the argument Patent
18 Owner is essentially making is that if it's been out there, even if it's not
19 patentable, the patent should -- should remain because it's been out there.
20 Patents -- which, to me, is contrary to the whole point of the patenting
21 process. Patenting process is out there to -- to root out and identify patents
22 that are truly patentable.

23 Litigation occurs when, again, prior art is brought up that invalidates
24 patents. Just because there's secondary consideration, that alone should not
25 be sufficient to allow a patent to continue. As for long-felt need and arguing
26 that it's been 40-plus years since Torrence, I think that's kind of

1 disingenuous from the standpoint -- until around in the early 20-teens,
2 maybe a little earlier, patents weren't even published, or patent applications
3 weren't published.

4 So we don't know what has been filed that could have attached or
5 addressed the issues at -- at -- at stake here and any prior art in those other
6 references because they were never published. Even today, applications
7 aren't always published if the patent owner or patent attorney representing
8 them chooses not to publish them. So it's not -- to say there's a long-felt
9 need -- that doesn't really, to me, cut the mustard completely in view of
10 what's not published versus what is published at the Patent Office.

11 And that is the extent of what I have in the way of rebuttal.

12 JUDGE MARSCHALL: Any further questions?

13 JUDGE PESLAK: I don't.

14 JUDGE MURPHY: No questions. Thanks.

15 JUDGE MARSCHALL: Thank you.

16 Counsel for Patent Owner, you may begin when ready.

17 MR. ARJOMAND: Your Honors, do -- do you see the screen? I
18 don't see a screen.

19 JUDGE MARSCHALL: I don't see a screen. So I'm guessing they
20 can't either.

21 MR. ARJOMAND: It's okay. I can just reference the slides.

22 JUDGE MARSCHALL: Yeah. We've got the slides right in front of
23 us, so you don't have to share your screen.

24 MR. ARJOMAND: I'm not sure what's going on. So I will be brief in
25 -- in surrebuttal, Your Honors. I -- I will first say, with regard to the long-
26 felt need point, I direct you back to Slide 87. So my understanding is that

1 Torrence issued in 1974. This is not an issue about when applications are
2 filed but not yet published.

3 I think it's pretty clear that, at least as of 1974, there was a need to
4 have a replaceable wear sleeve. And it took about 40 years until the '568
5 Patent was filed and the patent issued for there to be a solution to that long-
6 felt need. So I'm not sure I exactly follow what Petitioner's Counsel was
7 trying to -- to say there.

8 With regard to Dr. Kytomaa and being a hired gun, I think that's
9 absolutely false. Dr. Kytomaa is a respected scientist. He has an extensive
10 CV that he's provided in this record. He has a -- he was a professor. He has
11 a PhD from Caltech. He's a professor at MIT. I think he answered the
12 questions, and you can take a look at the transcripts yourselves, Your
13 Honors. He answered the questions the best way that he could. The
14 questions themselves were many times vague and unclear, and he tried to
15 answer them with the clarity that, you know, he was able to muster from the
16 -- the unclear questions.

17 Also, I direct you to Slide 84 of our presentation. Previously,
18 Petitioner has raised that Dr. Kytomaa was biased. And in your preliminary
19 guidance, you reviewed that information, and you concluded that there
20 wasn't any basis to nullify Patent Owner's argument because Dr. Kytomaa
21 was somehow biased. I think it's just absolutely false and wrong to suggest
22 that Dr. Kytomaa was somehow biased and a hired gun.

23 I also want to just briefly touch upon a few other points that Petitioner
24 has made in its presentation. In the first part of the presentation, he referred
25 to the uppermost extremity language being vague. In our view, that is never

1 raised by Petitioner in any of its papers, so that's a new argument that's being
2 raised today.

3 And there are arguments that he has made associated with the slides
4 that he's presented today, and we've made objections to those slides as
5 presenting new arguments on surreply. And so, to the extent that he's made
6 those arguments here in today's hearing, we also object on that basis as well.

7 Unless Your Honors have any further questions, we'll rest.

8 JUDGE PESLAK: I have no questions.

9 JUDGE MURPHY: No questions. Thank you.

10 JUDGE MARSCHALL: Okay. Thank you. That concludes the
11 hearing in this matter. We are adjourned.

12 (Whereupon, the above-entitled matter went off the record at 11:51
13 a.m.)

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Patent 9,827,568 B2

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