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3 BEFORE THE PATENT TRIAL AND APPEAL BOARD
4 Patent No. 9,827,568
5 Inter Partes Review No. IPR2024-01380
6
7 ----------x
8 CMS CEPCOR LTD., and CMS CEPCOR
9 AMERICAS LLC,
10 Petitioner,
11 vs.
12 SANDVIK INTELLECTUAL PROPERTY AB,
13 Patent Owner.
14 ----------x
15
16
17 DEPOSITION of HARRI K. KYTOMAA, Ph.D.
18 Boston, Massachusetts
19
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21
22
23 Reporter: Michael D. O'Connor, RMR, CRR, CRC
24 Job No. 7809555
25

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CMS Cepcor LTD, and CMS America, LLC
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Monday, December 22, 2025
10:26 a.m.

DEPOSITION of HARRI KYTOMAA, Ph.D., held at Veritext Solutions, 101 Arch Street, Boston, Massachusetts, pursuant to notice, before Michael D. O'Connor, Registered Merit Reporter, Certified Realtime Reporter, Certified Realtime Captioner.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

A P P E A R A N C E S:

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IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

I N D E X

Deposition of: Page
HARRI K. KYTOMAA, Ph.D.
By Mr. Sanks 5

E X H I B I T S

No. Page
Exhibit 1001A U.S. Patent 9,827,568 13
Exhibit 1001B U.S. Patent 11,014,090 12
Exhibit 1018 U.S. Patent 6,270,026 8
Exhibit 1040 U.S. Patent 8,302,754 36

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

P R O C E E D I N G S

HARRI K. KYTOMAA, Ph.D.

having been satisfactorily identified by the production of his driver's license, and duly sworn by the Notary Public, was examined and testified as follows:

EXAMINATION
BY MR. SANKS:

Q. Sir, it's nice to be before you again, and this will be the last time.

I'm going to start off really just asking some general questions about gyratory crushers. Typically what's the purpose of a gyratory crusher?

MR. ARJOMAND: Objection to form.

A. The gyratory crushers that we're talking about here is to reduce the size of rocks of -- potentially various types of rocks from a larger size to a smaller size. In this case, we're talking about rocks about, you know, a foot in diameter to a size that's of the order of an inch or so.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

Q. Are there other types of crushers out there that can crush rocks?

MR. ARJOMAND: Objection to form.

A. Yeah. There are systems that are not gyratory that are more, I would say, sort of piston actuated, with various kinds of geometries, that don't have the gyrating shaft design that is unique to gyratory crushers.

Q. Okay. When a rock passes through a gyratory crusher, what's the byproduct?

MR. ARJOMAND: Objection to form.

A. It is -- basically it's reduced in size into multiple smaller rocks.

Q. And the process of reducing it in size, does it also create fines?

MR. ARJOMAND: Objection to form.

A. Mostly not, but it will always create some fines, but that's not its purpose.

Q. All right. What is the purpose of a coal pulverizer?

MR. ARJOMAND: Objection.

A. As the name suggests, it's to pulverize the coal, to create essentially a fine dust that has a particle size that's a little bit above the thickness of your hair

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

that can then be used in multiple applications, but typically in coal-fired boilers as an example.

Q. Is coal a rock?

A. I mean, it's constitution is very specific, that is what it is made of, but it is something that is found in geological formations. So you can call it a rock, but it's a very specific kind of rock that is, you know, that is rich in carbon.

Typical rocks have different constitution, depending on, you know, what their origins are, depending, you know, whether it's a volcanic rock or a rock that is formed from the sedimentation and it's a compaction of ancient coral reefs or materials that are more rich in silicates, for example.

So you will have calcium rich rocks, silicate rich rocks, various kinds of chemical compositions.

Q. Can coal be crushed with a gyratory crusher?

MR. ARJOMAND: Objection to form.

A. Yes. Larger, let's say, larger mined rocks from coal mines could be placed in

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

the gyratory crusher. There are various other kinds of crushers. Like, for example, bore mills are also used to reduce the size of coal.

Q. So if coal is crushed through a gyratory crusher, would it be reduced to fines?

MR. ARJOMAND: Objection to form.

A. No. It would be reduced -- so the gyratory crusher, by virtue of its geometry and the way it operates, will typically reduce large particles into like something of the size of about a foot, maybe a little less, to something of the order of about an inch in size.

The various kinds of rocks can be placed into a gyratory crusher of various compositions, including coal. But the gyratory crushers will essentially reduce from the larger size to the smaller size that I just mentioned, pulverizers are an entirely different class.

(Document marked as Exhibit 1018 for identification)

Q. Prior to being involved with this case, did you have any experience working with or opining on coal pulverizers?

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

A. Yes.
Q. Could you elaborate on your experience?
A. Yeah. My involvement with coal pulverizers is really in the context of coal-fired power plants. The most recent project that I've worked of that kind was in Brazil, where there were issues associated with the pulverizer, but generally there were issues with the power plant. That was just one of the issues.
Q. What I've handed you is Exhibit 1018, which is the Piepho reference that we've talked about before. In this reference, does it teach the intended input size of coal?
MR. ARJOMAND: Objection to form.
A. So this is the Piepho -- Piepho -- I'll call it Piepho if that's okay with you.
Q. That's fine.
A. I'm not quite sure what the correct pronunciation is. '026 patent assigned to the Babcock & Wilcox Company.
So this invention is in the context of Babcock & Wilcox pulverizers, specifically Type E and Type EL pulverizers.

I've specifically looked into the specifications associated with these pulverizers, and the answer to your question is, yes, there is a specific size range that is relevant to these types of pulverizers.

Q. Just so I'm clear, there's the specific size relevant to the B&W Type EL pulverizer?

A. That's correct. And I cite to that in my declaration.

Q. As used in Piepho, can you explain how coal is broken down into approximately the one-inch size to be fed into the pulverizer?

MR. ARJOMAND: Objection to form.

A. That's not what I said.

MR. SANKS: Scratch that question.

Q. In your declaration, you state that the coal particles -- is the Piepho reference limited to just having coal between the size of .75 to one inch to be inputted into it?

MR. ARJOMAND: Objection to form.

Counsel, if you're reading from his declaration --

MR. SANKS: No, I'm not reading

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

from it. If I read from it, the question would have sounded better.

A. So the field of invention of Piepho relates to an improved main shaft for a coal pulverizer, and more particularly, to an improved main shaft for use in the Babcock & Wilcox Type E and EL pulverizers.

So it's very specific to what this invention is intended for. And so, that defines, that is Babcock & Wilcox Type E and EL, defines the intended use of the product, and it is a coal pulverizer.

If I may supplement the question. The claims of the patent are also very specific to pulverizing coal.

Q. Could Piepho be applicable to other pulverizers other than just the -- scratch that.

Could Piepho be applicable to other pulverizers other than B&W Type EL pulverizer?

MR. ARJOMAND: Objection to form.

A. The field of the invention is specific to the Babcock & Wilcox Type E and EL coal pulverizer, but the claims of the patent

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

speak to coal pulverizers, and it is broader than just this brand of Babcock & Wilcox or the Type E and EL. It is slightly broader, but it is limited to coal pulverizers.

(Document marked as Exhibit 1001B for identification)

Q. So what I've handed you is one of the patents at issue. This is the Bergman -- excuse me. Just a minute. I've handed you the wrong one. You can set that one aside. We'll come back to that.

COURT REPORTER: Should I take the sticker off?

MR. SANKS: No, you can leave the sticker on.

COURT REPORTER: Do you want to leave it marked as 1001?

MR. SANKS: Yes. I don't know how we marked -- we marked both of them initially -- you can leave ...

MR. ARJOMAND: Do it as A and B for the purpose of this deposition if it's easier.

MR. SANKS: Do that one as B. So this will be Exhibit 1001A.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

(Document marked as Exhibit 1001A for identification)

Q. So this will be Exhibit 1001A. I'm going to refer to this one as Aberg. Do you call it Aberg or Aberg?

A. Aberg is fine.

Q. For Aberg, does it teach the supply size of rock to be crushed?

MR. ARJOMAND: Objection to form.

A. In the context of this matter, there are specific components that are part of the gyratory crusher shaft assembly. And so in the context of those specific components that I've looked at that are manufactured both by Sandvik and CMS, the answer is yes.

With respect to whether this patent, '568 patent, provides that information, I would need to take a quick look. I don't believe that it provides a specific size in the body of the patent itself.

However, a person of ordinary skill in the art would understand that rock crushers crush rocks and create an end product by virtue of the crushing process that are much larger than what a pulverizer would put out.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

Q. So you would agree that Aberg does not teach or disclose the intended output size of the rock once run through a gyratory crusher as claimed in Aberg?

MR. ARJOMAND: Objection to form.

A. By virtue of it being a rock crusher, it doesn't pulverize a rock. It simply crushes a rock into smaller rocks.

So to some extent, it does, but it doesn't give you a specific dimension. But if you go to the specification of the piece of equipment in dispute in this case, then you can make that determination with some degree of accuracy.

Q. Can gyratory rock crushers accept rocks greater than 9.8 inches wide?

A. The maximum -- both the maximum size and the size to which gyratory rock crushers crush is defined by the geometry of the crushing zone, if you will, mantel, the alta and the inner mantles.

Actually, to be more specific, these are labeled 105 and 106 in the '568 patent, and in the patent they are called -- the first crushing shell and the second

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

crushing shells.

So their geometry and separation, and indeed, the gyrating trajectory of the main shaft, defines ultimately the size that the gyratory rock crusher accepts and is able to crush to, because those three things THAT I just mentioned define ultimately the gaps at the opening, and the size that can enter the crushing zone, and as well as the gap size of the exit, which defines the size of the rocks that can leave.

Q. Is there any stated limitations in Aberg as to the size or dimensions of the outer mantel?

MR. ARJOMAND: Objection to form.

A. I don't believe the '568 patent issued to Aberg provides a specific size. But by virtue of being a rock crusher, a person of ordinary skill in the art would understand that it is a rock crusher.

Q. Does Aberg teach a particular dimension or size of the outer mantel?

MR. ARJOMAND: Objection. Form.

A. I don't believe that Aberg provides a size for the outer mantel, but

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

generally speaking, I wouldn't necessarily expect patents to be limit to any specific size, in my experience.

Q. Does Aberg state or describe dimensions for physical size of the inner mantel?

MR. ARJOMAND: Objection to form.

A. I don't believe it does. And as I just said a moment ago, I wouldn't expect it to either.

Q. Now, let's go back to Exhibit 1001B, and I'll refer to this one as Bergman.

Does Bergman teach the size rock to be used with this invention?

MR. ARJOMAND: Objection to form.

A. Bergman is directed at a gyratory crusher which generally would inform a person of ordinary skill in the art as to what this piece of equipment does and specifically, therefore, a broad range of size of rocks that it crushes.

But I don't believe, and I don't expect, it to actually provide specific dimensions in the patent.

Q. Does Bergman disclose an intended

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

output size of crushed rock?

MR. ARJOMAND: Objection to form.

A. I don't believe it does, and I don't expect it to either.

Q. Is it possible to use the invention of Bergman in a gyratory crusher that accepts rocks larger than 9.8 inches wide?

MR. ARJOMAND: Objection to form.

A. The dimension of the rock crusher or that is the dimension of the rocks that the rock crusher can accommodate are defined ultimately by geometrical characteristics of the crushing components.

So these are the ones that I identified before as items labeled 105 and 106 in the '568 patent. Actually also, the numbering is identical in the '090 patent.

If you look at Figure 1, Figure 1 is a figure that is common to both patents. As of the size, the size of particles that the crusher accepts, which is, I think, your question, is defined by sort of the entrance geometry of the space that is defined by items 105, 106, as well as the eccentric nature of the gyration of the main shaft.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

Q. Is it possible to use Bergman to produce a gyratory crusher that accepts rocks -- scratch that.

Is it possible to apply Bergman to a gyratory crusher that has an adjustable output size greater than .3 to 1.8 inches?

MR. ARJOMAND: Objection to form.

A. Your question is, is it possible for the output size to be greater than .3 to .8 inches?

Q. 1.8 inches.

A. I'm sorry, yes.

MR. ARJOMAND: Objection to form.

A. So in principle, the output size of the gyratory crusher is defined by the geometries that I've described, whether you can adjust the output size or you have to actually swap out certain components, whether it is the sleeve, the eccentric sleeve that controls the gyratory motion, or the shape and dimension of items 105 and 106.

We need to swap them out or adjust is not something that I've looked at. So I'm not sure whether you can actually adjust.

Q. If you can go back to Exhibit

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

1018, Piepho. Does Piepho teach a tapered shaft?

MR. ARJOMAND: Objection to form.

A. It teaches a tapered shaft as well as a straight shaft.

Q. In the comminution fill, are tapered shafts known or well known prior to 2010?

MR. ARJOMAND: Objection to form.

A. I would say generally speaking, tapered shafts were known, as well as straight shafts. So specifically in the field of pulverizers, which is the field of endeavor of Piepho, it talks about straight shafts and tapered shafts.

Q. In the comminution equipment fill, were tapered friction fit shafts and sleeves known prior to 2010?

A. Tapered and straight shafts were known generally on the one hand, and more specifically, they were known before 2010 in the field of pulverizers.

Q. Pulverizers are in the comminution equipment fill?

MR. ARJOMAND: Objection to form.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

A. Yes. So pulverizers are in the field of comminution equipment.

Q. Are tapered shafts known greater than the comminution equipment fill in the mechanical arts?

MR. ARJOMAND: Objection to form.

A. Yes.

Q. And have they been known prior to 2010?

A. Yes.

Q. Can you identify other examples of where they have been used?

MR. ARJOMAND: Objection to form.

A. I mean, they have been used, you know, we've seen prior art mentioned in association with the use of tapered shafts with gear or tooth -- their attachment to gear or tooth wheels as an example. But there would be other examples as well.

Just to be clear, I've not undertaken an effort to research the variety of applications of tapered shafts.

Q. Understood. In Piepho, is the tapered shaft designed to handle the same forces around the full circumference of the

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

tapered shaft?

MR. ARJOMAND: Objection to form.

A. I'm not sure I understand your question.

Q. Let me try to ask it this way. I've asked certain parts.

So Piepho, they teach a tapered shaft, correct?

A. Both a tapered and straight shaft, but, yes.

Q. And at a given location on the shaft around that circumference, is that area, that circumference, designed or developed to handle the same force level going around the full circumference?

MR. ARJOMAND: Objection to form.

A. Yeah, so the design of the shaft for Piepho is in the context of the Babcock & Wilcox pulverizers, and the pulverizers in their normal operation will impose loads at the end of the shaft, and those loads will tend to not be sideways forces so much. They will be -- they will tend to be bending type forces because of the, let's say, the act of pulverizing.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

So essentially the ball is rolling in those two races, the upper and lower race of the pulverizer, and can constitute, let's say, a little bit of a bumpy ride for the balls, and that bumpiness is then relayed to the top of the shaft in the form of bending moments.

So those bending moments really are caused by -- let's see. Those bending moments in the specific orientation is derived by where is it that the balls are having to ride over material that is being crushed.

So it would be a sort of like, if you will, a situation where the ball has to rise over material that is being crushed, and as a result, creates a twisting of the lower race, and then the structure that supports it.

So it will be mostly sort of bending type loads that are experienced in this pulverizer design, but those bending loads will occur all the way around, but they don't necessarily occur all the way around, that is at different angles at the same time. It's distributed in time and also distributed in sort of angular orientation covering all angular orientations.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

Q. Going back to Aberg, was the tapered shaft designed to experience forces all the way around its tapered shaft?

MR. ARJOMAND: Objection to form.

A. The forces that Aberg shaft experiences, and specifically at its very top, are mostly sideways forces. So very different loading from the Piepho loading.

The Piepho loading derives from the significant moment arm associated with the lower race in which the balls sit.

There is no such moment arm in the Aberg '568 patent, and the loads that the top of the Aberg shaft has to withstand are mostly side loads, and there will always be side loads from one side at a time, and the side load really has to do with the gyrating motion of the shaft that defines where the crushing zone is, and the location of the crushing zone, or specifically the angular position of the crushing zone, then defines where that side force is coming.

What I just described, and specifically the location of side forces, in Aberg '568 patent, does not arise at all in the

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

'026 Piepho patent.

Q. I'd like to ask a couple of questions about the POSITA or person of ordinary skill in the art.

In prior declarations there's been discussions about the POSITA -- really, the question is, is the POSITA the same for the Aberg patent and the Piepho patent?

MR. ARJOMAND: Objection to form.

A. My understanding is that opposing expert, Mr. Smith, has proposed a POSITA for this matter. That person of ordinary skill in the art would be the person essentially reviewing all of these patents.

There is no distinction, that I understand, of, let's say, a different definition in accordance with the different patent that is cited in this suit.

Q. How about would it be different with respect to your representation of a pulverizer versus a gyratory crusher?

MR. ARJOMAND: Objection to form.

A. No. In this matter, but other intellectual property matters that I've worked on, the size would agree on the definition of a

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

1 person of ordinary skill in the art, and that's
2 not dependent on one reference versus another.
3 Q. Piepho mentioned that the shaft
4 could be either cylindrical or tapered. Did
5 one configuration come before the other one in
6 development of coal pulverizers?
7 MR. ARJOMAND: Objection to form.
8 A. I've not reviewed the history of
9 coal pulverizers with respect to the choice of
10 shaft, but in accordance with Piepho, both are
11 acceptable.
12 And since Piepho is really not an
13 invention associated with whether the shaft has
14 a tapered or straight shaft, but rather, it is
15 an invention associated with a specific kind of
16 coating that can be applied to a preexisting
17 shaft, both are acceptable.
18 MR. SANKS: Could we take a
19 ten-minute break?
20 MR. ARJOMAND: Sure.
21 (Recess taken at 11:21 a.m. and
22 reconvening at 11:32 a.m.)
23 BY MR. SANKS:
24 Q. I wanted to ask a couple more
25 general questions about you're at a coal mine.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

They mine the coal. The coal that's mined, do they put it directly into the type of crusher -- scratch that and let me back up and get this straight.

Once coal is mined, does it typically go into the B&W Type EL pulverizer?

MR. ARJOMAND: Objection to form.

A. No.

Q. Can you explain the process, how it works?

A. Sure. Essentially you'll start with, depending on the mining operation, you'll start with a broad range of sizes, and there may be sort of a, let's say, a coarse size classification that allows smaller components to -- let's say, smaller pieces of rock to move on, and larger ones may get crushed by some kind of crusher that accommodates large rocks.

But ultimately, the coal has to be reduced in size small enough for the pulverizer to accept. And before the pulverizer, there may be, for example, a bore mill. A bore mill that then reduces the size to a size that's sufficient for the pulverizer to accept.

So there will be multiple steps,

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

typically two or three, that also includes a classification of size. So larger rocks will need to be crushed by a different kind of equipment than the smaller rocks, and the classification will direct different sizes to different pieces of equipment.

Q. Okay. How about the gyratory rock crusher, and how it's used at a quarry or a mine, is it a similar process?

MR. ARJOMAND: Objection to form.

A. I would expect it to be a similar process, but I have not really looked at quarry mine operations with respect to other pieces of equipment and exactly what sizes are available from the initial mining process.

What I do know is that the end product ultimately is classified into size ranges that are, you know, essentially then sold for end use.

Q. And from your experience, do you know if they sell the fines that result from -- that result from, say, a gyratory crusher?

MR. ARJOMAND: Objection to form. Outside the scope of his testimony.

A. What I do know is that, just as an

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

example, granite. Granite is sold in a broad range of size ranges, and each of those have very different end uses, whether it is used as aggregate, for example, in concrete or used as -- think of it as sand. So when particles are of the order of, let's say, perhaps of the order of one millimeter in diameter or so.

The finer particles that I've just described will not be the typical product associated with gyratory rock crushers. There will be other processes downstream of the gyratory rock crusher to create the finer products.

Now, to the extent there's a small amount of fines that arise out of the, let's say, the act of using the gyratory rock crusher, those will ultimately be sent to the appropriate size range of product that is then sold on the market.

Q. Turning back to Piepho, you've discussed that it teaches both cylindrical main shaft as well as a tapered main shaft. Is there a preferred embodiment discussed in Piepho?

MR. ARJOMAND: Objection to form.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

A. Piepho states that both are acceptable, and as I pointed out, the invention of Piepho addresses a specific problem related to fretting, and it provides a solution for new and preexisting shafts that are either tapered or straight.

The patent itself indicates both are acceptable, and it does say that tapered are preferred. But it also states that the coating can be applied to other.

Q. I'm going to ask you to look at Aberg again. That's the '568 patent. Can you point me to the description in Aberg that states that the second end of the shaft is freely rotatable about a longitudinal access of the shaft within the bearing assembly?

MR. ARJOMAND: Objection to form. Counsel, for the record you have been asking Dr. Kytomaa questions for over an hour without having provided him his declarations in this case.

Do you intend to give him his declarations or not?

MR. SANKS: I can give them to him.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

Q. Pause on that question until I give you a declaration.
A. Okay. Thank you.
MR. ARJOMAND: If it helps, I have copies of his declaration.
MR. SANKS: That would be great.
MR. ARJOMAND: You can take a look at them, first, if you want. This is the fourth and fifth declaration.
MR. SANKS: Do you have an extra copy for him or shall I have him make a copy?
MR. ARJOMAND: That's fine. I can pull up an electronic copy. This is the fourth and fifth declaration in the 01381 proceeding. Let me give you the second and third declaration in the 01380 proceeding.
Q. Let me know when you're ready.
A. I'm ready.
MR. ARJOMAND: Do you want to reask the question?
MR. SANKS: Yeah, I waited until he said he was ready.
Q. Can you identify to me in the

Aberg patent where it teaches second end of the shaft is freely rotatable about a longitudinal -- that's not the question. Hold on. Scratch that.

Could you point out to me in Aberg where it teaches that the second end of the shaft is freely rotatable about a longitudinal axis of the shaft within the bearing assembly?

A. The first appearance of -- let me make sure that I've got the papers here. In Aberg, if you look at -- the very end of Column 3 in the '568 patent, it says, "A very uppermost end 117 of shaft 107 is maintained in an axially rotatable position by a top bearing assembly 112."

So those geometries to a person of ordinary skill in the art are such that you would understand that it is a freely rotatable connection, and that is also the case for the bottom drive of the shaft, which only imposes the eccentric trajectory of the shaft, but allows it to freely rotate.

So a person of ordinary skill in the art would understand that by virtue of the descriptions, one of which I just provided to

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

you, in the '568 patent, as well as the figures of the '568 patent, which is the Aberg patent, a person of ordinary skill in the art would understand that the shaft is freely rotatable.

In addition to this, give me two seconds so that I can give you a clear answer.

Q. Take your time.

A. And here I make reference to what I just described in my disclosure, dated October 31, 2025 on Page 9, Paragraph 11, and it spills into Page 10 as well.

Q. Is the term "freely rotatable" expressly stated anywhere in Aberg?

MR. ARJOMAND: Objection to form.

A. Can you ask that question again, please?

Q. I was asking is the term "freely rotatable" used in I where in Aberg?

A. As I understand it, or as I recall, the term --

MR. ARJOMAND: Objection to form. Sorry to interrupt.

A. -- the term "rotatable" does appear in Aberg. And I think Mr. Smith and I both agree that it is free to rotate within the

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

bearing assembly at the top of the shaft.

Q. My question is, does the term "freely rotatable" appear in the patent?

MR. ARJOMAND: Objection to form.

A. I think I just -- I tried to answer that. I thought I did, and so I'll just repeat my answer.

So I don't believe that those exact words appear in the patent, but Mr. Smith and I both agree that the shaft is free to rotate.

Q. I will direct you back to the Bergman patent. In your declaration, you stated that Shigley explains that the stress concentrations can arise from a single groove.

Do you remember stating that? Is that --

MR. ARJOMAND: Objection to form.

A. Going from memory, I don't know whether those are the exact words, but in general, if you point me to that, then I can confirm.

Q. I just need it in general.

A. But in general, yes, single groove will create or can create stress

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

concentrations.

Q. Okay. And can a groove also -- scratch that.

Can fretting wear also occur due to a groove being put in an object?

MR. ARJOMAND: Objection to form.

A. It will depend on the specific loading conditions associated with the mating surfaces, in one of which there is a groove. But fretting can occur also as a result of stress concentration that is created by a groove.

Q. Is the stress concentration based on the dimensions of the groove?

MR. ARJOMAND: Objection to form.

A. There are many factors that come into play, including one of which is the dimension of the groove.

Q. Can you identify some of the other factors that come into play?

A. Yes. For example, what Piepho teaches is that fretting wear can arise due to surface roughness. In fact, the coatings in Piepho are intended to smoothen, if you will, the surface, so as to provide a different

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

surface, a characteristic. That is one.

Then the nature of the load, so that you have axial, radial bending loads, where their magnitudes are, and then also both the diameter and the axial extent -- so the length, if you will -- of the bearing surfaces in question, all of those will ultimately influence whether you can get fretting wear or not. And, of course, the magnitude of the loads, not just the different types of the loads.

And then finally, the choice of material, you know, what materials are in question. You have two surfaces. You may have the same material on both surfaces, you may have different materials on the surfaces, and those also have an influence.

Q. So could a POSITA use all of those factors in determining whether to place a groove?

MR. ARJOMAND: Objection to form.

A. I don't believe so. I think that a POSITA would recognize that the existence of the factors that I just outlined. But I don't think that a POSITA would necessarily be in a

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

position to make a determination as to whether fretting wear would occur or not or even to redesign a part so as to avoid fretting wear.

(Document marked as Exhibit 1040 for identification)

Q. So before you is Exhibit 1040. I will call it Yagi. Patent number 8,302,754. Does Yagi teach the use of a groove?

A. Yes.

Q. Does Yagi teach an internal passage that routes to a groove?

A. Yes.

Q. Does Yagi teach an internal oil path that extends to a groove where the groove has an axial conduit and a radial conduit to the groove?

MR. ARJOMAND: Objection to form.

A. Can you read that back, please?

Q. Yes. Does it teach an internal oil path that extends to a groove where the groove has an actual conduit and a radial conduit to the groove?

MR. ARJOMAND: Objection to form.

A. Yagi teaches an oil path that has an axial conduit and two radial conduits to the

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

groove.

Q. So Yagi has at least one radial conduit to the groove?

MR. ARJOMAND: Objection to form.

A. I think it always shows two. I don't think -- it talks about at least one. I've reviewed Yagi and I've always seen two radial conduits that are essentially going in opposite directions to any one groove.

Q. Okay. Have you ever applied for a U.S. patent as an inventor?

A. I have.

Q. How many times?

A. Twice that I know of.

Q. Did either one of them issue?

A. Yes. One issued.

Q. Do you remember what the technology was?

A. It was a fuel cell technology -- sorry. Hydrogen production technology.

Q. How about the other one?

A. The other one related to characterization of fine particular materials and their size distribution. Yeah, that was the field of endeavor.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

Q. Okay. For the patent that issued -- well, did the patent office issue any office actions?

A. I don't recall. I'm a named inventor, but I actually didn't do the -- I wasn't engaged in the back and forth with the patent office. So I don't know.

Q. Were there other people named?

A. Yes.

Q. Do you know if they were engaged with the patent office?

A. I actually don't know who was doing the legwork.

Q. How about for the one that did not issue? For the one that did not issue, do you know if an office action issued?

A. So I don't really know. I haven't thought about that in a long time. I don't know what actions there were. All I know is that the collaborators I was working with ultimately did succeed, but I don't know --

MR. ARJOMAND: I just didn't want him to unnecessarily disclose any attorney-client communications in terms of that application.

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

MR. SANKS: Okay. Let's just take a five-minute break. I'm about to wrap up, I think.

MR. ARJOMAND: Okay.

(Recess taken at 12:08 p.m. and reconvening at 12:15 p.m.)

MR. SANKS: I have no further questions. The witness is yours.

MR. ARJOMAND: We don't have any questions.

COURT REPORTER: A regular delivery transcript?

MR. SANKS: We would like to get it sooner. I thought we had requested the next day. Is it possible to get next day?

COURT REPORTER: Yes. And you, Mr. Arjomand?

MR. ARJOMAND: We don't need next day. Regular is fine. We would like a rough.

(Whereupon the deposition concluded at 12:16 p.m.)

IPR2024-01381
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1 E R R A T A
2
3 I, HARRI K. KYTOMAA, Ph.D., do hereby
4 certify that I have read the foregoing
5 transcript of my testimony, and further
6 certify that it is a true and accurate
7 record of my testimony (with the exception
8 of the corrections listed below):
9 Page Line Correction
10
11
12
13
14
15
16
17 _
18 Signed under the pains and penalties of
19 perjury this day of ,
20 2025.
21
22
23 HARRI K. KYTOMAA, Ph.D.
24
25

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

C E R T I F I C A T E

I, Michael O'Connor, Registered Merit Reporter/Certified Realtime Reporter, do hereby certify:

That HARRI K. KYTOMAA, Ph.D., the witness whose testimony is hereinbefore set forth, was duly sworn by me and that such testimony is a true and accurate record of my stenotype notes taken in the foregoing matter to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal this 23rd day of December 2025.

Michael O'Connor

MICHAEL O'CONNOR, RMR, CRR, CRC
Notary Public

My Commission expires:
November 9, 2029

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

&

& 3:12 9:22,24 11:6,10,24 12:2 21:18

0

01380 30:18
01381 30:16
026 9:21 24:1
090 17:17

1

1 17:18,18
1.8 18:6,11
10 32:11
1001 12:17
1001a 4:9 12:25 13:1,3
1001b 4:10 12:5 16:12
101 2:12
1018 4:11 8:21 9:13 19:1
1040 4:12 36:4,6
105 14:23 17:15 17:24 18:21
106 14:23 17:15 17:24 18:21
107 31:13
10:26 2:8
11 32:10
11,014,090 4:10
112 31:15
117 31:13
11:21 25:21
11:32 25:22
12 4:10
12:08 39:5
12:15 39:6
12:16 39:23
13 4:9
17393 41:17

2

2010 19:8,18,21 20:9
2025 2:7 32:10 40:20 41:15
2029 41:21
213 3:15
22 2:7
23rd 41:14
250 3:5

3

3 18:6,9 31:12
31 32:10
32803 3:6
36 4:12

4

407 3:7

5

5 4:4
568 13:17 14:23 15:16 17:16 23:13,25 29:12 31:12 32:1,2

6

6,270,026 4:11
612 3:5
644-8888 3:7

7

707 3:13
75 10:20
7809555 1:24

8

8 4:11 18:9
8,302,754 4:12 36:7
892-5630 3:15

9

9 32:10 41:21
9,827,568 1:4 4:9
9.8 14:16 17:7
90017-3543 3:14

a

a.m. 2:8 25:21 25:22
ab 1:12
aberg 13:4,5,5,6 13:7 14:1,4 15:13,17,21,24 16:4 23:1,5,13 23:14,25 24:8 29:12,13 31:1,5 31:11 32:2,13 32:18,24
ability 41:12
able 15:5
above 6:25
accept 14:15 26:21,24
acceptable 25:11,17 29:2,8
accepts 15:5 17:7,21 18:2
access 29:15
accommodate 17:11
accommodates 26:18
accordance 24:17 25:10
accuracy 14:14
accurate 40:6 41:9
act 21:24 28:16
action 38:16
actions 38:3,19
actual 36:21
actually 14:22 16:23 17:16 18:17,24 38:5 38:12
actuated 6:6
addition 32:5
addresses 29:3
adjust 18:17,22 18:24
adjustable 18:5

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

aggregate 28:4
ago 16:9
agree 14:1 24:25 32:25 33:10
allows 26:15 31:22
alta 14:21
americas 1:9
amount 28:15
ancient 7:16
angeles 3:14
angles 22:22
angular 22:24 22:25 23:20
answer 10:3 13:15 32:6 33:6 33:7
appeal 1:3
appear 32:24 33:3,9
appearance 31:9
applicable 11:16,19
application 38:25
applications 7:1 20:22
applied 25:16 29:10 37:10
apply 18:4
appropriate 28:18
approximately 10:12
arch 2:12
area 21:12
arjomand 3:16 5:18 6:3,11,16 6:21 7:23 8:6 9:16 10:14,22 11:22 12:21 13:9 14:5 15:15 15:23 16:7,15 17:2,8 18:7,13 19:3,9,25 20:6 20:13 21:2,16 23:4 24:9,22 25:7,20 26:7 27:10,23 28:25 29:17 30:4,7,13 30:21 32:14,21 33:4,18 34:6,15 35:21 36:17,23 37:4 38:22 39:4 39:9,18,19
arm 23:10,12
art 13:22 15:19 16:18 20:15 24:4,13 25:1 31:17,24 32:3
arts 20:5
aside 12:10
asked 21:6
asking 5:15 29:19 32:17
assembly 13:12 29:16 31:8,15 33:1
assigned 9:21
associated 9:8 10:2 23:10 25:13,15 28:10 34:8
association 20:16
attachment 20:17
attorney 38:24
attorneys 3:3,11
available 27:14
avoid 36:3
axial 35:3,5 36:15,25
axially 31:14
axis 31:8

b

b 4:7 12:21,24
b&w 10:7 11:20 26:6
babcock 9:22,24 11:6,10,24 12:2 21:18
back 12:11 16:11 18:25 23:1 26:3 28:20 33:12 36:18 38:6
ball 22:1,13
balls 22:4,10 23:11
based 34:13
basically 6:12
bearing 29:16 31:8,14 33:1 35:6
behalf 3:3,11
believe 13:19 15:16,24 16:8 16:22 17:3 33:8 35:22
bending 21:23 22:6,7,8,18,19 35:3
bergman 12:8 16:12,13,16,25 17:6 18:1,4 33:13
best 41:11
better 11:2
beusse 3:4
bit 6:25 22:4
board 1:3
body 13:20
boilers 7:2
bore 8:2 26:22 26:22
boston 1:18 2:13
bottom 31:20
boulevard 3:13

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

brand 12:2
brazil 9:8
break 25:19 39:2
broad 16:20 26:13 28:1
broader 12:1,3
broken 10:12
bumpiness 22:5
bumpy 22:4
byproduct 6:10

c

c 3:1 5:1 41:1,1
calcium 7:18
california 3:14
call 7:8 9:18 13:5 36:7
called 14:24
captioner 2:16
carbon 7:10
case 5:23 8:24 14:12 29:21 31:19
caused 22:8
cell 37:19
cepcor 1:8,8
certain 18:18 21:6
certified 2:15,16 41:4
certify 40:4,6 41:5
characteristic 35:1
characteristics 17:12
characterization 37:23
chemical 7:20
choice 25:9 35:12
circumference 20:25 21:12,13 21:15
cite 10:9
cited 24:18
claimed 14:4
claims 11:14,25
class 8:20
classification 26:15 27:2,5
classified 27:17
clear 10:6 20:20 32:6
client 38:24
cms 1:8,8 13:15
coal 6:20,23 7:2 7:4,21,25 8:3,4 8:16,25 9:4,6,15 10:12,18,19 11:5,12,15,25 12:1,4 25:6,9,25 26:1,1,5,19
coarse 26:14
coating 25:16 29:10
coatings 34:23
collaborators 38:20
colonial 3:5
column 31:11
come 12:11 25:5 34:16,20
coming 23:22
comminution 19:6,16,23 20:2 20:4
commission 41:20
common 17:19
communicatio... 38:24
compaction 7:15
company 9:22
components 13:11,13 17:13 18:18 26:15
compositions 7:20 8:16
concentration 34:11,13
concentrations 33:15 34:1
concluded 39:23
concrete 28:4
conditions 34:8
conduit 36:15 36:15,21,22,25 37:3
conduits 36:25 37:8
configuration 25:5
confirm 33:22
connection 31:19
constitute 22:3
constitution 7:5 7:12
context 9:5,24 13:10,13 21:18
controls 18:19
copies 30:5
copy 30:11,12 30:14
coral 7:16
correct 9:21 10:9 21:8
correction 40:9
corrections 40:8
counsel 10:23 29:18
couple 24:2 25:24
course 35:9
court 12:12,16 39:11,17
covering 22:24
crc 1:23 41:18
create 6:15,18 6:23 13:23 28:12 33:25,25

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

created 34:11
creates 22:15
crr 1:23 41:18
crush 6:2 13:23 14:19 15:6
crushed 7:21 8:4 13:8 17:1 22:11,14 26:17 27:3
crusher 5:17 6:10 7:22 8:1,5 8:8,15 13:12 14:3,7 15:5,18 15:20 16:17 17:6,9,11,21 18:2,5,15 24:21 26:2,18 27:8,22 28:12,17
crushers 5:16 5:19 6:1,8 8:2 8:17 13:23 14:15,19 28:10
crushes 14:8 16:21
crushing 13:24 14:20,25 15:1,9 17:13 23:18,19 23:21
cylindrical 25:4 28:21

d

d 1:23 2:14 4:1 5:1
dated 32:9
day 39:15,16,20 40:19 41:14
december 2:7 41:15
declaration 10:10,17,24 30:2,5,9,15,17 33:13
declarations 24:5 29:21,23
define 15:7
defined 14:19 17:11,22,23 18:15
defines 11:10,11 15:4,10 23:18 23:21
definition 24:17 24:25
degree 14:13
delivery 39:12
depend 34:7
dependent 25:2
depending 7:12 7:13 26:12
deposition 1:17 2:11 4:2 12:22 39:22
derived 22:9
derives 23:9
describe 16:4
described 18:16 23:23 28:9 32:9
description 29:13
descriptions 31:25
design 6:8 21:17 22:19
designed 20:24 21:13 23:2
determination 14:13 36:1
determining 35:19
developed 21:13
development 25:6
diameter 5:24 28:7 35:5
different 7:11 8:20 22:22 23:7 24:16,17,19 27:3,5,6 28:3 34:25 35:10,16
dimension 14:10 15:22 17:9,10 18:20 34:18
dimensions 15:13 16:5,24 34:14
direct 27:5 33:12
directed 16:16
directions 37:9
directly 26:2
disclose 14:2 16:25 38:23
disclosure 32:9
discussed 28:21 28:23
discussions 24:6
dispute 14:12
distinction 24:15
distributed 22:23,23
distribution 37:24
document 8:21 12:5 13:1 36:4
doing 38:13
downstream 28:11
dr 29:19
drive 3:5 31:20
driver's 5:6
due 34:4,22
duly 5:6 41:8
dust 6:24

e

e 3:1,1 4:1,7 5:1 5:1 9:25 11:7,10 11:24 12:3 40:1 41:1,1
easier 12:23
east 3:5

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

eccentric 17:24 18:19 31:21
effort 20:21
either 16:10 17:4 25:4 29:5 37:15
el 9:25 10:7 11:7 11:11,20,24 12:3 26:6
elaborate 9:2
electronic 30:14
embodiment 28:23
endeavor 19:13 37:25
engaged 38:6,10
enter 15:8
entirely 8:19
entrance 17:22
equipment 14:12 16:19 19:16,24 20:2,4 27:4,6,14
esq 3:8,16
essentially 6:23 8:17 22:1 24:13 26:11 27:18 37:8
exact 33:9,20
exactly 27:14
examination 5:10
examined 5:7
example 7:3,17 8:2 20:18 26:22 28:1,4 34:21
examples 20:11 20:19
exception 40:7
excuse 12:9
exhibit 4:9,10 4:11,12 8:21 9:12 12:5,25 13:1,3 16:11 18:25 36:4,6
existence 35:23
exit 15:10
expect 16:2,9,23 17:4 27:11
experience 8:24 9:3 16:3 23:2 27:20
experienced 22:18
experiences 23:6
expert 24:11
expires 41:20
explain 10:11 26:9
explains 33:14
expressly 32:13
extends 36:14 36:20
extent 14:9 28:14 35:5
extra 30:10

f

f 41:1
fact 34:23
factors 34:16,20 35:19,24
fed 10:13
field 11:3,23 19:12,13,22 20:2 37:25
fifth 30:9,15
figure 17:18,18 17:19
figures 32:1
fill 19:6,16,24 20:4
finally 35:12
fine 6:24 9:19 13:6 30:13 37:23 39:20
finer 28:8,12
fines 6:15,18 8:5 27:21 28:15
fired 7:2 9:6
first 14:25 30:8 31:9
firstiniplaw.c... 3:9
fit 19:17
five 39:2
florida 3:6
foerster 3:12
follows 5:8
foot 5:24 8:11
force 21:14 23:22
forces 20:25 21:22,23 23:2,5 23:7,24
foregoing 40:4 41:10
form 5:18 6:3 6:11,16 7:23 8:6 9:16 10:14,22 11:22 13:9 14:5 15:15,23 16:7 16:15 17:2,8 18:7,13 19:3,9 19:25 20:6,13 21:2,16 22:6 23:4 24:9,22 25:7 26:7 27:10 27:23 28:25 29:17 32:14,21 33:4,18 34:6,15 35:21 36:17,23 37:4
formations 7:8
formed 7:14
forth 38:6 41:8
found 7:7
fourth 30:9,15
free 32:25 33:10
freely 29:15 31:2,7,18,22 32:4,12,17 33:3

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

fretting 29:4 34:4,10,22 35:8 36:2,3
friction 19:17
fuel 37:19
full 20:25 21:15
further 39:7 40:5

g

g 5:1
gap 15:9
gaps 15:7
gear 20:17,17
general 5:15 25:25 33:21,23 33:24
generally 9:9 16:1,17 19:10 19:20
geological 7:7
geometrical 17:12
geometries 6:7 18:16 31:16
geometry 8:8 14:19 15:2 17:23
give 14:10 29:22 29:24 30:2,16 32:5,6
given 21:11
go 14:11 16:11 18:25 26:6
going 5:14 13:4 21:14 23:1 29:11 33:19 37:8
granite 28:1,1
great 30:6
greater 14:16 18:6,9 20:3
groove 33:15,24 34:2,5,9,12,14 34:18 35:20 36:8,11,14,14 36:16,20,21,22 37:1,3,9
gyrating 6:7 15:3 23:17
gyration 17:25
gyratory 5:15 5:17,19 6:5,8,10 7:22 8:1,5,8,15 8:16 13:12 14:3 14:15,18 15:5 16:16 17:6 18:2 18:5,15,20 24:21 27:7,22 28:10,12,16

h

h 4:7
hair 6:25
hand 19:20 41:14
handed 9:12 12:7,9
handle 20:24 21:14
harri 1:17 2:11 4:3 5:3 40:3,23 41:6
held 2:12
helps 30:4
hereinbefore 41:7
hereunto 41:13
history 25:8
hold 31:3
hour 29:20
hydrogen 37:20

i

identical 17:17
identification 8:22 12:6 13:2 36:5
identified 5:5 17:15
identify 20:11 30:25 34:19
impose 21:20
imposes 31:20
improved 11:4 11:6
inch 5:25 8:12 10:13,20
inches 14:16 17:7 18:6,10,11
includes 27:1
including 8:16 34:17
indicates 29:7
influence 35:8 35:17
inform 16:17
information 13:17
initial 27:15
initially 12:20
inner 14:21 16:5
input 9:15
inputted 10:20
intellectual 1:12 24:24
intend 29:22
intended 9:15 11:9,11 14:2 16:25 34:24
inter 1:5
internal 36:10 36:13,19
interrupt 32:22
invention 9:23 11:3,9,23 16:14 17:6 25:13,15 29:2
inventor 37:11 38:5
involved 8:23
involvement 9:4
ipr2024-01380 1:5

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

issue 12:8 37:15 38:2,15,15
issued 15:17 37:16 38:1,16
issues 9:8,9,11
items 17:15,23 18:21

j

job 1:24

k

k 1:17 4:3 5:3 40:3,23 41:6
kind 7:9 9:7 25:15 26:18 27:3
kinds 6:6 7:19 8:2,14
know 5:24 7:10 7:12,13 12:18 20:15 27:16,18 27:21,25 30:19 33:19 35:13 37:14 38:7,10 38:12,16,17,19 38:19,21
knowledge 41:11
known 19:7,7 19:11,18,20,21 20:3,8
kytomaa 1:17 2:11 4:3 5:3 29:19 40:3,23 41:6

l

labeled 14:23 17:15
large 8:10 26:18
larger 5:22 7:24 7:24 8:18 13:25 17:7 26:17 27:2
leave 12:14,17 12:20 15:11
legwork 38:13
length 35:6
level 21:14
license 5:6
limit 16:2
limitations 15:12
limited 10:19 12:4
line 40:9
listed 40:8
little 6:25 8:11 22:4
llc 1:9
llp 3:12
load 23:16 35:2
loading 23:8,8,9 34:8
loads 21:20,21 22:18,19 23:13 23:15,15 35:3 35:10,11
location 21:11 23:19,24
long 38:18
longitudinal 29:15 31:2,7
look 13:18 17:18 29:11 30:7 31:11
looked 10:1 13:14 18:23 27:12
los 3:14
lower 22:2,15 23:11

m

made 7:6
magnitude 35:9
magnitudes 35:4
main 11:4,6 15:3 17:25 28:21,22
maintained 31:13
make 14:13 30:11 31:10 32:8 36:1
mantel 14:20 15:14,22,25 16:6
mantles 14:21
manufactured 13:14
marjomand 3:17
marked 8:21 12:5,17,19,19 13:1 36:4
market 28:19
massachusetts 1:18 2:13
material 22:11 22:14 35:13,15
materials 7:16 35:13,16 37:23
mating 34:8
matter 13:10 24:12,23 41:11
matters 24:24
maximum 14:17 14:17
mean 7:5 20:14
mechanical 20:5
mehran 3:16
memory 33:19
mentioned 8:19 15:7 20:15 25:3
merit 2:14 41:4
michael 1:23 2:14 41:3,18
mill 26:22,22
millimeter 28:7
mills 8:3
mine 25:25 26:1 27:9,13
mined 7:25 26:1 26:5

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

mines 7:25
mining 26:12 27:15
minute 12:9 25:19 39:2
mofo.com 3:17
moment 16:9 23:10,12
moments 22:6,7 22:9
monday 2:7
morrison 3:12
motion 18:20 23:17
move 26:16
multiple 6:13 7:1 26:25

n

n 3:1 4:1 5:1
name 6:22
named 38:4,8
nature 17:24 35:2
necessarily 16:1 22:21 35:25
need 13:18 18:22 27:3 33:23 39:19
new 29:4
nice 5:12
normal 21:20
notarial 41:14
notary 5:7 41:19
notes 41:10
notice 2:13
november 41:21
number 36:7
numbering 17:17

o

o 5:1
o'connor 1:23 2:14 41:3,18
object 34:5
objection 5:18 6:3,11,16,21 7:23 8:6 9:16 10:14,22 11:22 13:9 14:5 15:15 15:23 16:7,15 17:2,8 18:7,13 19:3,9,25 20:6 20:13 21:2,16 23:4 24:9,22 25:7 26:7 27:10 27:23 28:25 29:17 32:14,21 33:4,18 34:6,15 35:21 36:17,23 37:4
occur 22:20,21 34:4,10 36:2
october 32:10
office 1:2 38:2,2 38:7,11,16
oil 36:13,20,24
okay 6:9 9:18 27:7 30:3 34:2 37:10 38:1 39:1 39:4
once 14:3 26:5
ones 17:14 26:17
opening 15:8
operates 8:9
operation 21:20 26:12
operations 27:13
opining 8:25
opposing 24:10
opposite 37:9
order 5:25 8:12 28:6,7
ordinary 13:21 15:19 16:18 24:4,12 25:1 31:17,23 32:3
orientation 22:9 22:24
orientations 22:25
origins 7:13
orlando 3:6
outer 15:13,22 15:25
outlined 35:24
output 14:2 17:1 18:6,9,14 18:17
outside 27:24
owner 1:13 3:11

p

p 3:1,1 5:1
p.m. 39:5,6,23
page 4:2,8 32:10 32:11 40:9
pains 40:18
papers 31:10
paragraph 32:10
part 13:11 36:3
partes 1:5
particle 6:24
particles 8:10 10:18 17:20 28:5,8
particular 15:21 37:23
particularly 11:5
parts 21:6
passage 36:11
passes 6:9
patent 1:2,3,4 1:13 3:11 4:9,10 4:11,12 9:21 11:14,25 13:17 13:17,20 14:24

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

14:24 15:16 16:24 17:16,17 23:13,25 24:1,8 24:8,18 29:7,12 31:1,12 32:1,2,2 33:3,9,13 36:7 37:11 38:1,2,7 38:11
patents 12:8 16:2 17:19 24:14
path 36:14,20 36:24
pause 30:1
penalties 40:18
people 38:8
perjury 40:19
person 13:21 15:18 16:17 24:3,12,13 25:1 31:16,23 32:3
petitioner 1:10 3:3
ph.d. 1:17 2:11 4:3 5:3 40:3,23 41:6
physical 16:5
piece 14:11 16:19
pieces 26:16 27:6,13
piepho 9:13,17 9:17,18 10:11 10:18 11:4,16 11:19 19:1,1,14 20:23 21:7,18 23:8,9 24:1,8 25:3,10,12 28:20,24 29:1,3 34:21,24
piston 6:6
place 35:19
placed 7:25 8:15
plant 9:10
plants 9:6
play 34:17,20
please 32:16 36:18
pllc 3:4
point 29:13 31:5 33:21
pointed 29:2
posita 24:3,6,7 24:11 35:18,23 35:25
position 23:20 31:14 36:1
possible 17:5 18:1,4,8 39:15
potentially 5:21
power 9:6,10
preexisting 25:16 29:5
preferred 28:23 29:9
principle 18:14
prior 8:23 19:7 19:18 20:8,15 24:5
problem 29:3
proceeding 30:16,18
process 6:14 13:24 26:9 27:9 27:12,15
processes 28:11
produce 18:2
product 11:11 13:23 27:17 28:9,18
production 5:6 37:20
products 28:13
project 9:7
pronunciation 9:21
property 1:12 24:24
proposed 24:11
provide 16:23 34:25
provided 29:20 31:25
provides 13:17 13:19 15:17,25 29:4
public 5:7 41:19
pull 30:14
pulverize 6:23 14:7
pulverizer 6:20 9:9 10:8,13 11:5 11:12,21,25 13:25 22:3,19 24:21 26:6,20 26:21,24
pulverizers 8:19 8:25 9:5,24,25 10:3,5 11:7,17 11:20 12:1,4 19:13,22,23 20:1 21:19,19 25:6,9
pulverizing 11:15 21:25
purpose 5:16 6:18,19 12:22
pursuant 2:13
put 13:25 26:2 34:5

q

quarry 27:8,12
question 10:3 10:16 11:2,13 17:22 18:8 21:4 24:7 30:1,22 31:3 32:15 33:2 35:7,14
questions 5:15 24:3 25:25 29:19 39:8,10
quick 13:18
quite 9:20

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

r

r 3:1 5:1 40:1,1 41:1
race 22:2,16 23:11
races 22:2
radial 35:3 36:15,21,25 37:2,8
range 10:4 16:20 26:13 28:2,18
ranges 27:18 28:2
rather 25:14
read 11:1 36:18 40:4
reading 10:23 10:25
ready 30:19,20 30:24
really 5:14 9:5 22:7 23:17 24:6 25:12 27:12 38:17
realtime 2:15,16 41:4
reask 30:22
recall 32:20 38:4
recent 9:6
recess 25:21 39:5
recognize 35:23
reconvening 25:22 39:6
record 29:18 40:7 41:9
redesign 36:3
reduce 5:20 8:3 8:9,17
reduced 6:12 8:5,7 26:20
reduces 26:23
reducing 6:14
reefs 7:16
refer 13:4 16:12
reference 9:13 9:14 10:19 25:2 32:8
registered 2:14 41:3
regular 39:11 39:20
related 29:3 37:22
relates 11:4
relayed 22:5
relevant 10:5,7
remember 33:16 37:17
repeat 33:7
reporter 1:23 2:15,15 12:12 12:16 39:11,17 41:4,4
representation 24:20
requested 39:14
research 20:21
respect 13:16 24:20 25:9 27:13
result 22:15 27:21,22 34:10
review 1:5
reviewed 25:8 37:7
reviewing 24:14
rich 7:10,17,18 7:19
ride 22:4,11
right 6:19
rise 22:14
rmr 1:23 41:18
rock 6:9 7:4,8,9 7:14,14 13:8,22 14:3,6,7,8,15,18 15:5,18,20 16:13 17:1,9,11 26:16 27:7 28:10,12,16
rocks 5:21,21,23 6:2,13 7:11,19 7:19,25 8:14 13:23 14:8,16 15:10 16:20 17:7,10 18:2 26:18 27:2,4
rolling 22:1
rotatable 29:15 31:2,7,14,18 32:4,12,18,23 33:3
rotate 31:22 32:25 33:11
rough 39:21
roughness 34:23
routes 36:11
run 14:3

s

s 3:1 4:7 5:1
sand 28:5
sandvik 1:12 13:15
sanks 3:4,8 4:4 5:11 10:16,25 12:14,18,24 25:18,23 29:24 30:6,10,23 39:1 39:7,13
satisfactorily 5:5
says 31:12
scope 27:24
scratch 10:16 11:18 18:3 26:3 31:3 34:3
seal 41:14
second 14:25 29:14 30:17

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

31:1,6
seconds 32:6
sedimentation 7:15
see 22:8
seen 20:15 37:7
sell 27:21
sent 28:17
separation 15:2
set 12:10 41:7 41:14
shaft 6:7 11:4,6 13:12 15:4 17:25 19:2,4,5 20:24 21:1,8,9 21:12,17,21 22:6 23:2,3,5,14 23:18 25:3,10 25:13,14,17 28:22,22 29:14 29:16 31:2,7,8 31:13,20,21 32:4 33:1,10
shafts 19:7,11 19:12,14,15,17 19:19 20:3,16 20:22 29:5
shape 18:20
shell 14:25
shells 15:1
shigley 33:14
shows 37:5
side 23:15,15,16 23:16,21,24
sideways 21:22 23:7
signature 41:17
signed 40:18
significant 23:10
silicate 7:19
silicates 7:17
similar 27:9,11
simply 14:8
single 33:15,24
sir 5:12
sit 23:11
situation 22:13
size 5:20,22,22 5:24 6:13,15,24 8:3,10,13,18,18 9:15 10:4,7,13 10:20 13:8,19 14:2,18,18 15:4 15:8,9,10,13,17 15:22,25 16:3,5 16:13,20 17:1 17:20,20 18:6,9 18:14,17 24:25 26:14,20,23,23 27:2,17 28:2,18 37:24
sizes 26:13 27:5 27:14
skill 13:22 15:19 16:18 24:4,12 25:1 31:17,23 32:3 41:11
sleeve 18:19,19
sleeves 19:17
slightly 12:3
small 26:20 28:14
smaller 5:22 6:13 8:18 14:8 26:15,16 27:4
smith 24:11 32:24 33:9
smoothen 34:24
sold 27:19 28:1 28:19
solution 29:4
solutions 2:12
sooner 39:14
sorry 18:12 32:22 37:20
sort 6:5 17:22 22:12,17,24 26:14
sounded 11:2
space 17:23
speak 12:1
speaking 16:1 19:10
specific 7:6,9 10:4,7 11:8,14 11:24 13:11,13 13:19 14:10,22 15:17 16:2,23 22:9 25:15 29:3 34:7
specifically 9:25 10:1 16:19 19:12,21 23:6 23:20,24
specification 14:11
specifications 10:2
spills 32:11
start 5:14 26:11 26:13
state 10:17 16:4
stated 15:12 32:13 33:14
states 1:2 29:1,9 29:14
stating 33:16
stenotype 41:10
steps 26:25
sticker 12:13,15
straight 19:5,11 19:14,19 21:9 25:14 26:4 29:6
street 2:12
stress 33:14,25 34:11,13
structure 22:16
succeed 38:21
sufficient 26:24
suggests 6:22
suit 24:18
suite 3:5
supplement 11:13

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

supply 13:8
supports 22:16
sure 9:20 18:24 21:3 25:20 26:11 31:10
surface 34:23 34:25 35:1
surfaces 34:9 35:6,14,15,16
swap 18:18,22
sworn 5:7 41:8
systems 6:4

t

t 4:7 40:1 41:1,1
take 12:12 13:18 25:18 30:7 32:7 39:1
taken 25:21 39:5 41:10
talked 9:14
talking 5:20,23
talks 19:14 37:6
tapered 19:1,4,7 19:11,15,17,19 20:3,16,22,24 21:1,7,9 23:2,3 25:4,14 28:22 29:5,8
teach 9:15 13:7 14:2 15:21 16:13 19:1 21:7 36:8,10,13,19
teaches 19:4 28:21 31:1,6 34:22 36:24
technology 37:18,19,20
ten 25:19
tend 21:21,23
term 32:12,17 32:20,23 33:2
terms 38:24
terry 3:8
testified 5:8
testimony 27:24 40:5,7 41:7,9
thank 30:3
thickness 6:25
things 15:6
think 17:21 28:5 32:24 33:5 35:22,25 37:5,6 39:3
third 30:17
thought 33:6 38:18 39:14
three 15:6 27:1
time 5:13 22:22 22:23 23:16 32:7 38:18
times 37:13
tooth 20:17,18
top 22:5 23:6,13 31:14 33:1
trademark 1:2
trajectory 15:3 31:21
transcript 39:12 40:5
trial 1:3
tried 33:5
true 40:6 41:9
try 21:5
tsanks 3:9
turning 28:20
twice 37:14
twisting 22:15
two 22:2 27:1 32:5 35:14 36:25 37:5,7
type 9:25,25 10:7 11:7,10,20 11:24 12:3 21:23 22:18 26:2,6
types 5:21 6:1 10:5 35:10
typical 7:11 28:9
typically 5:16 7:2 8:9 26:6 27:1

u

u.s. 4:9,10,11,12 37:11
ultimately 15:4 15:7 17:12 26:19 27:17 28:17 35:7 38:21
under 40:18
understand 13:22 15:19 21:3 24:16 31:18,24 32:4 32:19
understanding 24:10
understood 20:23
undertaken 20:21
unique 6:8
united 1:2
unnecessarily 38:23
upper 22:2
uppermost 31:13
use 11:6,11 17:5 18:1 20:16 27:19 35:18 36:8
used 7:1 8:3 10:11 16:14 20:12,14 27:8 28:3,4 32:18
uses 28:3
using 28:16

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

v

variety 20:21
various 5:21 6:6 7:19 8:1,14,15
veritext 2:12
versus 24:21 25:2
virtue 8:8 13:24 14:6 15:18 31:24
volcanic 7:14
vs 1:11

w

waited 30:23
want 12:16 30:8 30:21 38:22
wanted 25:24
way 8:9 21:5 22:20,21 23:3
we've 9:13 20:15
wear 34:4,22 35:8 36:2,3
wheels 20:18
whereof 41:13
wide 14:16 17:7
wilcox 9:22,24 11:7,10,24 12:2 21:19
wilshire 3:13
withstand 23:14
witness 39:8 41:7,13
words 33:9,20
worked 9:7 24:24
working 8:24 38:20
works 26:10
wrap 39:2
wrong 12:10

x

x 1:7,14 4:1,7

y

yagi 36:7,8,10 36:13,24 37:2,7
yeah 6:4 9:4 21:17 30:23 37:24

z

zone 14:20 15:9 23:18,19,21

IPR2024-01381
CMS Cepcor LTD, and CMS America, LLC
Exhibit 1057

Massachusetts Rules of Civil Procedure

Part V. Deposition and Discovery

Rule 30

(e) Submission to Witness; Changes; Signing. When the testimony is fully transcribed the deposition shall be submitted to the witness for examination and shall be read to or by him, unless such examination and reading are waived by the witness and by the parties. Any changes in form or substance which the witness desires to make shall be entered upon the deposition by the officer with a statement of the reasons given by the witness for making them. The deposition shall then be signed by the witness, unless the parties by stipulation waive the signing or the witness is ill or cannot be found or refuses to sign. If the deposition is not signed by the witness within 30 days of its submission to him, the officer shall sign it and state on the record the fact of the waiver or of the illness or absence of the witness or the fact of the refusal to sign together with the reason, if any, given therefor; and the deposition may then be used as fully as though signed, unless on a motion to suppress under Rule 32(d)(4) the court holds

that the reasons given for the refusal to sign require rejection of the deposition in whole or in part.

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COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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